



**GREAT  
USED CARS**  
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# Insect Repellents That *Really* Work

# CR Consumer Reports™

## REVIEWS & RATINGS

- Dishwashers
- Laptops
- Desktops
- Printers
- Chevy Bolt

# Too Many Meds?

Follow our doctor-approved plan to take fewer drugs, avoid dangerous side effects, and feel better



**Ransomware:  
How to Stay Safe**

**Owners Rate  
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**Top Cash-Back  
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## ABOUT CONSUMER REPORTS

We are the world's largest independent, nonprofit, consumer-product-testing organization, based in Yonkers, N.Y. We survey millions of consumers about their experiences with products and services. We pay for all the products we rate. We don't

accept paid advertising. We don't accept free test samples from manufacturers. We do not allow our name or content to be used for any promotional purposes.

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**RATINGS** Overall scores are based on a scale of 0 to 100. We rate products using these symbols:

POOR FAIR GOOD  
VERY GOOD EXCELLENT



## A Prescription for Better Health

IF YOU'RE READING THIS, it's more likely than not that you regularly take a prescribed medication—more than half of all Americans do, according to CR's latest research. The average American takes four prescriptions plus a helping of over-the-counter drugs, vitamins, and supplements. The result: Americans take more pills today than at any other time in recent history, and far more than in any other country.

While advancements in medicine have made many of these drugs critical to our health, the parallel rise of questionable supplements, unnecessary prescriptions, and dangerous drug interactions has created a perfect storm of preventable harms. Almost 1.3 million people went to U.S. emergency rooms because of adverse drugs effects in 2014, and about 124,000 people died as a result, according to estimates based on data from the Centers for Disease Control and Prevention and the Food and Drug Administration.

In addition to illness and loss of life, the problem also imposes

an enormous financial burden on our healthcare system.

To ensure that you're being helped and not harmed by your drug regimen, our CR Best Buy Drugs and Choosing Wisely programs generate advice you can use to make better-informed decisions. In our special report, "Too Many Meds?" on page 24, we spotlight the questions to ask your provider about whether a prescription is truly necessary, offer guidance about how common ingredients interact with one another, and provide insight on treatments and lifestyle changes that can sometimes effectively supplant prescribed medications. At CR, we're dedicated to bringing you independent knowledge you can trust so that you feel empowered to protect your well-being.

*Marta Tellado*

**Marta L. Tellado,**  
President and CEO  
Follow me on Twitter  
**@MLTellado**

### ANNUAL MEETING AND BALLOT FOR BOARD OF DIRECTORS ELECTION

The Board is elected at the annual meeting, which will be held Oct. 25, 2017, at CR's Auto Test Center in Colchester, Conn. Please go to [CR.org/annualmeeting](http://CR.org/annualmeeting) for additional details. And watch your email for this year's ballot. If you haven't provided your email address, you can do so before Aug. 25 by calling us at 800-333-0663 or by going to [CR.org/myaccount](http://CR.org/myaccount).

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## Empowering Consumers in a Digital World

JESSICA RICH SPENT more than two and a half decades battling deceptive and fraudulent business practices at the Federal Trade Commission, most recently as the agency's director of the Bureau of Consumer Protection. She left the FTC in February, and now brings her expertise to Consumer Reports as vice president of consumer policy and mobilization. CR's editors spoke with her recently about what she learned while fighting to protect consumer interests from within government, and where she sees fresh opportunities for Consumer Reports to continue to empower consumers in a world where their personal data is an increasingly tempting target.

### Q. How did you get into public service?

I'm a Washington, D.C., native—my father was a reporter for the Washington Post, and my mother ran a nonprofit—so I was always very aware of the policy environment and public debates when I was growing up. After I went to law school, I worked in law firms for a while. But I was looking for something where I could have more connection to people. And I found that at the FTC.

### Q. You worked at the FTC for 26 years. How did the agency—and your role in it—change in that time?

When I started, we were mostly doing straightforward fraud and false advertising cases—there was no privacy work to speak of. I belonged to a fraud division bringing cases against scam artists who sold worthless gemstones to older consumers over the phone. The advent of the internet changed everything, and the FTC has

been on a technology highway ever since. In the late 1990s, I led efforts to create the FTC's privacy program, which now addresses such issues as TVs that snoop on their owners' viewing habits, data breaches harming millions of consumers, and IP cameras and routers that are vulnerable to hackers. And as bureau director, many of my efforts dealt with tech issues, such as phony health apps, fraud on Kickstarter, and unauthorized mobile payments.

### Q. What do you think are some of the most pressing issues facing consumers today?

One of my primary concerns is the credibility of information in the marketplace. There's a lot of blurring of advertising and content, and advertising formats that look like journalism.

It's very difficult for consumers to distinguish credible sources from sources that are bought and paid for through advertising dollars.

The incredible explosion of technology is also a huge issue. It means there are lots of new platforms where marketing claims are made. And it also means data is collected about consumers everywhere they go, from all sorts of devices.

When you're online, websites and many companies in the background know what you're searching for, reading, and watching. And now we're facing the internet of things, where products such as your car and your thermostat are collecting data all the time.

### Q. Giving up privacy can often be seen as the cost of doing business for consumers in the digital world. Why should they be concerned?

The information that's collected can include the medicines you take, your political and religious interests—even your bank account number. And it can wind up in the hands of your

insurance company, landlord, or employer. Even worse, it can be sold to wrongdoers. The FTC brought several cases involving the sale of bank account numbers to scam artists who used it to debit consumers' accounts.

### Q. What is Consumer Reports' role in this issue?

Consumers say they care about whether companies protect their privacy, but they can't really make informed choices about which ones do a better job. It's too complex.

That's why Consumer Reports is developing a Digital Standard to evaluate privacy and security protections. It addresses such questions as whether a company provides security against hackers, whether it's being straight with consumers about the data it's collecting, and whether consumers are given choices about how their data is used.

Companies can use the standard to build better products and services. But ultimately, we want to test and rate products such as routers, security cameras, health apps, and connected cars for privacy and security. This will take a lot of time and work, but it could be a game-changer.

One of the great appeals of Consumer Reports is that by doing testing, ratings, and reviews, we give consumers clear information on products and services, and empower them to vote with their feet on issues they care about.

What I've seen from working on this for two decades is that what drives privacy action the most is a sense that it matters to a brand. If companies believe their customers care about privacy, they'll address it.



LEARN

For tips on how to protect your privacy, go to [CR.org/66privacy](https://www.consumerreports.org/66privacy).



## Driving Home the Safety Discussion

People of all ages were revved up after reading our July 2017 article “At the Wheel Over 65: Driving Safer, Driving Longer,” which reported on the research and innovation surrounding the 40 million American drivers who are 65 and older. You can join the conversation at [CR.org/seniors0917](https://www.consumerreports.org/seniors0917).

TODAY'S CARS ALLOW drivers to control the interior lighting, windshield wiper speeds, and interior and defrosting temperatures. Why not a setting to vary the loudness of turn-signal clickers so that those with hearing deficiencies won't wander down the road with their signals flashing? Not that I would ever do anything like that.

—Steve Longo, Laguna Beach, CA

I HAVE ANOTHER REASON to buy a vehicle like the Subaru Forester: In addition to ease of getting in and out of the

driver's seat and good visibility, the higher floor level of the luggage area allows me to slide grocery bags in and out without bending or putting much pressure on my back.

—Michael Mase, Portland, OR

THE DECISION to take the keys, the vehicle, or the driver's license away from an aging parent or family member is emotionally wrenching. As my father's driving worsened, he had fender benders and neighbors complained of his erratic driving. Because I knew broaching the subject with him would cause WWII, I decided to go through our state's Department of Motor Vehicles to initiate having his driving privileges revoked—completely anonymously. However, despite receiving letters advising him that he was no longer legally allowed to drive, he continued

anyway and got into a terrible wreck. Luckily, the other driver was not hurt, nor did they sue. After a court appearance, the judge laid this law down and the matter came to rest. My father now operates only a sidewalk-legal scooter, and I can sleep at night. For those in similar situations, please consider the other cars and pedestrians who share the road. The life you save won't be just your family member's.

—Monica Muller, Chesterfield, VA

THE “REASONS SENIORS Would Stop Driving” chart that accompanies the article does not mention the primary reasons I stopped driving six years ago: the expense of owning and driving a car in a dense urban area. On my reduced retirement income, the cost of a car was quite substantial. A second reason

for not driving was a desire to, in a small way, help the environment by reducing carbon emissions. The ready availability of public transportation in San Francisco was an additional factor. Lack of public transportation in many suburban areas was mentioned in your article. I was disappointed that my two other reasons were not.

—John Peters, San Francisco

MY HUSBAND AND I have been driving for more than 57 years and currently drive a late-model Subaru Impreza and a new Honda Fit, both great little cars. The rearview camera systems in particular are a godsend for those of us who can't whip our necks around like we used to. However, the touch-screen sound systems aren't safe for anyone to use while driving because they require one to look right at the screen to use it, and the slightest tremor, bump in the road, or bad aim can result in prolonged distraction, meaning eyes are not on the road until the task is finished. Have car designers not noticed that people on cell phones walk around staring down rather than looking where they are going? Adding that feature to cars seems like a very bad idea.

—Carol Nelson-Selby, San Luis Obispo, CA

**EDITOR'S NOTE** Those screens are a concern to us, too. We've called out Honda for its touch screens, noting how poorly they respond and how often drivers have to take their eyes off the road to make adjustments. Look for our October issue—we'll discuss infotainment systems and which flashy dash functions may be too distracting.

### Sunscreen Smarts

I FOUND IT disappointing that you suggested choosing a sunscreen containing avobenzone (“Don't Get Burned!” July 2017). When avobenzone gets on clothing and is washed in hard water,



WRITE

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

you can end up with stains. So unless you restrict sunscreen use to the beach or wear only orange clothing, it isn't a good option. It would be great if you could write a follow-up piece that lists effective sunscreens that don't ruin clothing.

—Mark Van Horne, Studio City, CA

**EDITOR'S NOTE** Most of the products in our tests carry a warning about the possibility of staining on the label. If there is no warning, we test the product to see whether it stains. Over the years we've found that the majority of sunscreens do stain—even the ones that don't list avobenzone on the label. To keep your clothes safe, allow sunscreen to dry before you get dressed. If you do get sunscreen on your clothes, try sprinkling the area with baby powder or cornstarch and brush it off once the powder turns damp.

YOUR ARTICLE INDICATES that “chemical” sunscreens perform better than “natural” ones that contain only zinc oxide and/or titanium dioxide. But many chemical sunscreens contain oxybenzone and retinyl palmitate, which several health websites I read have indicated are potentially harmful ingredients. Are these ingredients harmful, and is avobenzone as well?

—Melanie Tuck, Albuquerque, NM

**EDITOR'S NOTE** “The risk of skin damage and skin cancer from unprotected exposure to the sun's harmful rays far outweighs any risk from the ingredients in sunscreen,” says Don Huber, Consumer Reports' director of product safety. “But if the sunscreen contains retinol or retinyl palmitate, pregnant women may want to steer clear. Some research in animals

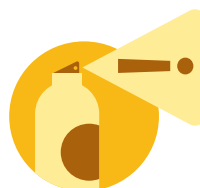
suggests that both the chemical and mineral active ingredients in sunscreen may have adverse health effects, but more research is needed. Still, you shouldn't over-rely on sunscreen. It's just one part of a smart sun-protection strategy that should also include minimizing your time in the sun and covering up with clothing and a hat when you are outside.”

Your recent review of sunscreens extensively covered which ones protect skin best from UVA and UVB rays. However, there is another factor to consider. Many use ingredients that have been shown to damage coral reefs. The legislature in Hawaii has considered banning sunscreens that contain oxybenzone as an active ingredient as studies have shown oxybenzone is a contributor to coral bleaching. Imagine millions of Hawaii's beachgoers slathering on sunscreen that gets washed off and stays in our waters.

—Michael Daniel, Waikoloa, HI

**EDITOR'S NOTE** Our sunscreen ratings show the active ingredients of each formula, making it easy to avoid products that contain oxybenzone. The top two oxybenzone-free options in our tests of lotions and sprays: Ocean Potion Protect & Nourish SPF 30 lotion, \$8, a recommended product and a CR Best Buy; and Hawaiian Tropic Island Sport Ultra Light Spray SPF 30, \$8— not quite as highly rated as our recommended products but still a Very Good choice.

I TAKE CR's sunscreen ratings very seriously; melanoma runs in my family, and I spend a lot of time in the sun. Last



## To keep your clothes safe from staining, allow sunscreen to dry before you suit up.

—The Editors

year, No-Ad SPF 50 was ranked as the No. 5 lotion, with an overall score of 94, and an Excellent rating in both UVA and UVB. This year, No-Ad SPF 50 had dropped to 20th and is no longer a recommended product, despite a lower price than last year. No-Ad has the lowest price per ounce of any lotion that you rated this year, so it is a very attractive product. So my question is: What happened? Was I using an inferior product since last July's issue? Should I throw out my remaining product and buy something else? What gives?

—A.G. Crockett, Durham, NC

**EDITOR'S NOTE** No-Ad's formulation changed, and when we tested the product for this year's ratings we got different results. If the bottle you purchased last year lists retinyl palmitate in the ingredients list, it is the old formulation and last year's ratings

apply. Need a replacement? Six of our 15 currently recommended sunscreens cost \$1 per ounce or less.

### Faster, Fresher, Cheaper

“SHOP LIKE a Food Safety Expert” (in “Faster, Fresher, Cheaper,” July 2017) has good ideas about avoiding the spread of germs and bacteria. However, one issue not mentioned is the checkout conveyor belt. When I see a wet spot on the belt, I wonder, “Chicken juice? A leaky ground beef package?” Also, shoppers sometimes put their own bags on the belt, and some of those don't look too clean.

—Lisette Sage, Beaverton, OR

**EDITOR'S NOTE** You're right that the conveyer belt is a potential source of contamination. You can pick a self-checkout line to control where your groceries land on the belt, or double bag items like a porous bag of grapes or meat.

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Consumer Reports is seeking dynamic, dedicated candidates with a desire to advance our mission and improve the lives of consumers by serving on

our Board of Directors. Ideal candidates will bring creativity, diversity of background and thought, experience in leadership, and a passion for empowering

consumers and working to create a fairer, safer, healthier marketplace. Applications should be submitted online at [CR.org/boardapplication](http://CR.org/boardapplication) by Sept. 15, 2017.

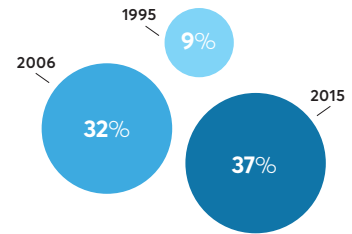
A committee of the Board will review applications, conduct interviews, and recommend a slate to stand for election to a three-year term of board service beginning in October 2018.

Board members are required to attend three meetings per year and participate in Board business by phone and email on an ongoing basis. No compensation is provided, but travel expenses are covered.

# Product Updates

The latest ratings from our labs

Percentage of U.S. employees who say they've worked from home by computer



Source: U.S. News & World Report/CNN/Gallup Poll.



## Home Sweet Home Office

Taking care of business in your home? Here are the best choices for the gear you need, plus strategies to help you work smarter.

by Tercius Bufete

**FOR A GROWING** number of Americans, home is where the office is. A 2016 survey by the Society for Human Resource Management found that 60 percent of employers provide telecommuting as a benefit, a threefold increase since 1996, and a recent PwC study revealed that almost 70 percent of U.S. workers think that in the future work will be done remotely and not in a traditional office. Contrary to the

PHOTOS: BRENDAN WIXTED



GOOGLE  
HOME  
\$130

40

OVERALL  
SCORE

MICROSOFT  
SURFACE  
STUDIO  
\$3,000

85

OVERALL  
SCORE

suspensions of skeptical bosses, studies find that employees who work at home at least part of the time tend to be more engaged, more productive, and less stressed out.

And though some people are content to toil on a laptop squeezed onto the kitchen table among the remains of breakfast, we think that a dedicated workspace with the digital tools you need to communicate with the boss and

collaborate with your colleagues is a better way to go.

This guide will help you find a computer with the power and features to get any job done and a printer that will not only meet your immediate needs but also provide the best value in the long run. We'll also suggest some high-tech splurges worth considering and a few tips you can use to create a healthy workspace.

## THE COMPUTER

### Consider a Desktop, Again

The personal computing revolution started with desktops, but they've been largely ignored in recent years as consumers opted for the portability of laptops, smartphones, and tablets. Now the tried-and-true desktop is poised for a comeback as companies including Apple, HP, and Microsoft race to design models that can answer a growing appetite for processors fast enough for demanding tasks such as video editing and gaming, and big, beautiful screens that display 4K video in all its Ultra High Definition glory.

At the pricey end of the spectrum, Microsoft's powerful and versatile new **Surface Studio** features a sleek 28-inch touch-screen display that swivels up and down like a tabletop drafting board. You can raise it upright to use it as a conventional monitor or angle it down to sketch ideas with the Surface Pen (included), adjusting the color and thickness of each brushstroke by turning the \$100 hockey-puck-shaped Surface Dial tool. The Surface Studio starts at \$3,000 and goes up to \$4,200. For Apple fans, the new **iMac Pro** (due out in December) offers pro-level graphics, awesome computing power, and a whopping 128 gigabytes of memory for \$5,000.

But you don't have to take out a small-business loan to afford a desktop with a very good screen and enough processing power for web browsing, spreadsheet management, and even some serious video editing. The all-in-one **HP Pavilion 24-b217c** has a 24-inch screen, earned an Excellent performance rating from our testers, and comes at a price of only \$800. And if you don't need high-level gaming performance, the **Lenovo 510-22ISH**, \$500, has a 21.5-inch touch screen and made our recommended list.

For those who just can't resist the portability of a laptop, we've included a list of top models in the ratings chart on page 13. You can always buy a monitor and a full-sized keyboard to use it more like a desktop at home.

THE PRINTER

Factor In Long-Term Ink Costs

When given a choice between a printer that costs \$200 and one that costs half that, many people opt to save money. But that’s often a bad move: In the long run the cost of replacement ink can significantly dwarf the purchase price.

To illustrate this, we chose a few printers from our ratings and estimated the long-term costs for each, using the price of replacement ink and data on printing frequency from our reader surveys and on ink consumption from our testing. (See “How Printer Costs Can Soar Over Time,” below.)

Based solely on its \$130 price, the **HP Envy 7640** looks like a good deal. But our estimates show the total cost is closer to \$471 after three years of use. The \$225 **Brother MFC-J6520DW**, on the other hand, will set you back a total of \$336 during that span. Stretch the timeline to five years—the length of time most people in our reliability survey expect to own a printer—and that bargain HP ends up costing you \$735. Similarly, if you buy the \$500 **Epson**

**Workforce Pro WF-6530**, you’d shell out about an additional \$288 for replacement ink over five years. The Brother’s five-year total cost? Only \$444.

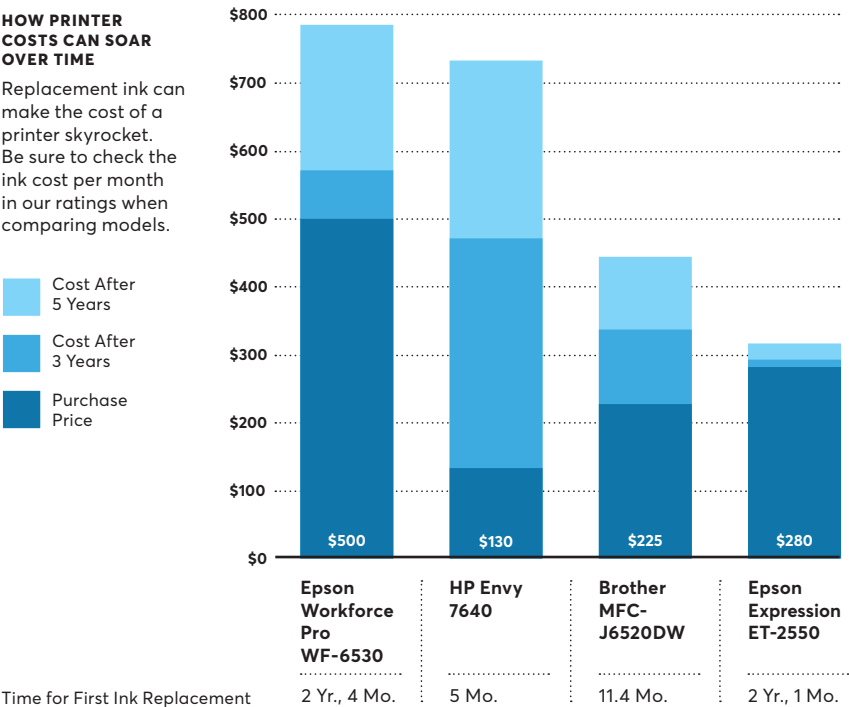
Epson and Canon make printers with refillable ink tanks, which can save significantly on replacement ink costs. The \$280 **Epson Expression ET-2550** is replenished with \$12 bottles of ink and will cost a total of \$315 over five years. The drawback? The text quality is only fair. To get a tank model with Very Good text quality, you’ll need to spend closer to \$400 at the start.

If you print only text (as opposed to photos and color graphics), a black-and-white laser printer is a fast and efficient way to go. The **Samsung Xpress M2835DW** sells for \$140, and, given the price of toner, we estimate the five-year total cost to be about \$192.

Before you buy any printer, research ink prices and do the math. We provide the ink cost per month on the ratings charts at the end of this report, as well as the two- through five-year cost of ownership on the model pages at [CR.org](http://CR.org).

HOW PRINTER COSTS CAN SOAR OVER TIME

Replacement ink can make the cost of a printer skyrocket. Be sure to check the ink cost per month in our ratings when comparing models.



BROTHER  
MFC-  
J6520DW  
\$225

65  
OVERALL  
SCORE

Assistants  
That Never Take  
a Water-  
Cooler Break

Amazon’s Alexa, Apple’s Siri, and Google Assistant can schedule appointments and tackle other tasks without your ever having to lift a finger.



## THE ROUTER

### Make Sure You're Fully Covered

One of the appealing things about working from home is not being holed up in a cubicle. You can migrate to the living room to kick back on the couch during your coffee break or head out to the patio to return phone calls in the fresh air.

If you work on a laptop or a tablet and want the freedom to roam, you'll need reliable WiFi coverage in every room, which is no simple feat—especially if your home is multistory or more than about 1,500 square feet. For maximum WiFi coverage consider routers from companies such as Eero and Google that come in packs of three and link together wirelessly to create “mesh networks,” blanketing your home in WiFi signals without sacrificing internet speed.

These products aren't cheap, but they have come down in price in the past year. The **Eero** three-pack originally cost \$500. It now sells for \$300 and delivers roughly 3,000 square feet of WiFi coverage. The **Google WiFi** three-pack—also \$300—is advertised as covering 4,500 square feet.

Before you spend that kind of money, though, consider simply buying a new router, especially if you live in a home of more modest proportions. Today's models can accommodate 20 or more devices—from computers to game consoles to smart TVs. Thanks to the 802.11ac WiFi standard adopted in 2013, they're able to detect where each device is located and push a stronger “smart signal” to the spots in need. They can cost half the price of a mesh network.

LIKE ANY ASSISTANT worth his or her salt, the digital helpers created by Amazon, Apple, and Google can update your calendar, order you a car service, and even adjust the lighting in your home office. All you have to do is voice the right command within earshot of

Amazon's Echo speaker, the Google Home speaker, or a smartphone with the right app. Here are a few commands to get you started:

**'Okay, Google, tell me about my day.'** When Google Assistant hears this command, it

gives you a rundown of the weather forecast, events in your calendar, commute times, and news headlines. Alexa and Siri can provide that info, too—when prodded with their own unique queries.

**'Hey, Siri, find a table for four in Charlotte tonight.'** All three services can book dinner reservations and even a Lyft or an Uber car to get you to that dinner on time. Google can also check the status of flights and suggest activities to try at your travel destination.

**'Alexa, turn off the lights in my home office.'** If you want to call it a day and you have compatible, internet-connected bulbs, you can control the lighting in each room of your home. Google Assistant and Siri can do this, too.

# Office Equipment That Shows You Mean Business

These high-performance products may be pricey, but they offer pro-level perks

Mighty Mouse  
**LOGITECH  
MX MASTER 2S**  
\$100



With its precision performance and ergonomic élan, the original Logitech MX Master earned a 2015 International Design Excellence Award. And much like that device, the new \$100 Logitech MX Master 2S snugly supports your

hand and wrist, wirelessly links to three devices, and offers a wide range of customizable features. Instead of reaching for the volume button on your keyboard, for instance, you just assign the mouse's scroll wheel to perform that task.

**A MORE AFFORDABLE ALTERNATIVE** If you don't mind that it has a cord, the \$70 **Razer DeathAdder Chroma** is plenty comfortable and has a gaming-level sensor for accurate tracking.

Keys to Success  
**DAS KEYBOARD 4  
PROFESSIONAL**  
\$170



Available in Windows- and Mac-compatible versions, the German-engineered \$170 Das Keyboard 4 Professional has well-defined, full-sized keys that are easy to depress and make a satisfying, old-school click. But the

benefits go beyond aesthetics: Studies have shown that mechanical keyboards such as this can significantly increase words-per-minute counts and accuracy. The built-in USB ports and dedicated media-player controls (play/pause,

fast forward, etc.) make this keyboard especially versatile and easy to use. **A MORE AFFORDABLE ALTERNATIVE** The \$80 **Logitech G610** delivers not only a satisfying typing experience but also LED-backlighting for those late-night work sessions.

High-Tech Headphones  
**BOSE  
QUIETCONTROL 30**  
\$300

**87**  
OVERALL  
SCORE



Like many noise-canceling headphones from Bose, the \$300 QuietControl 30 is excellent at quieting the commotion beyond your desk. But this wireless model goes a step further: A control on the cord lets you adjust how much outside noise reaches

your ears, so you can dial down the jackhammer in the street but still hear the doorbell. The QuietControl 30 also delivers excellent sound, so you can fully appreciate Chris Stapleton's song stylings while you tab through your spreadsheets.

**A MORE AFFORDABLE ALTERNATIVE** If you're willing to give up the variable noise cancellation and wireless access, the \$250 **Audio-Technica SonicPro ATH-MSR7NC** (Overall Score of 81) rate Excellent for noise-canceling and sound quality.

The Ultimate Coffee Maker  
**CUISINART  
DCC-3200**  
\$100

**88**  
OVERALL  
SCORE



When you need to power through the day, you don't have time to cajole your coffee maker into making the perfect cup. The \$100 Cuisinart Programmable DCC-3200—our top-rated drip model—aced our

brewing test and turned out to be easy to program and to clean, too. Its 14-cup capacity will fuel you all day long. **A MORE AFFORDABLE ALTERNATIVE** The \$25, 12-cup **Hamilton Beach Programmable 49465** almost matched the

Cuisinart in performance and convenience, with an Overall Score of 84, but it lacks a control for brew strength and comes in plastic rather than stainless steel.

**Ratings** ➤ **Tools of the Trade** To help you get down to business, here are our top-rated laptops, desktops, and all-in-one printers.



## LAPTOPS

\$ CR BEST BUY ✓ RECOMMENDED

		Brand & Model	Price	Overall Score		Test Results						Features			
Rec.	Rank				Operating System	Ergonomics	Portability	Performance	Versatility	Display	Battery Life (Hr.)	Weight (Lb.)	Processor	Memory (GB)	Storage (GB)
12- TO 13-INCH LAPTOPS															
✓	1	Vaio Z	\$1,500	81	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	17.25	2.6	Intel Core i5-6267U 2.9 GHz	8	256
✓	2	LG Gram 13 Touchscreen	\$1,100	80	Windows 10 Home	⬆️	⬆️	⬆️	⬆️	⬆️	12.75	2	Intel Core i5-7200U 2.5 GHz	8	256
✓	3	HP Spectre x360 13t	\$1,170	78	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	15.25	2.8	Intel Core i5-7200U 2.5 GHz	8	256
✓	4	Microsoft Surface Laptop	\$1,300	78	Windows 10 Pro	⬆️	⬆️	⬆️	⬇️	⬆️	13.75	2.8	Intel Core i5-7200U 2.5 GHz	8	256
✓	5	HP Spectre x360 13-AC013DX	\$1,200	76	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	13.5	2.9	Intel Core i7-7500U 2.7 GHz	8	256
✓	6	Dell XPS 13 Convertible	\$1,350	75	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	12	2.7	Intel Core i7-7Y75 1.3 GHz	16	256
✓	7	Vaio Z Flip	\$1,800	74	Windows 10 Home	⬆️	⬆️	⬆️	⬆️	⬆️	10.75	2.9	Intel Core i5-6267U 2.9 GHz	8	256
✓	8	Microsoft Surface Laptop	\$1,000	74	Windows 10 Pro	⬆️	⬆️	⬆️	⬇️	⬆️	12.25	2.8	Intel Core i5-7200U 2.5 GHz	4	128
✓	9	Apple MacBook Pro 13-inch MLL42LL/A	\$1,300	73	MacOS Sierra 10.12	⬆️	⬆️	⬆️	⬇️	⬆️	14.25	3	Intel Core i5 2 GHz	8	256
✓	10	Acer Aspire S 13 S5-371T-76CY	\$1,050	73	Windows 10 Home	⬆️	⬆️	⬆️	⬆️	⬆️	11.5	3	Intel Core i5-6500U 2.5 GHz	8	512
✓	11	Apple MacBook 13-inch MPXR2LL/A	\$1,300	73	MacOS Sierra 10.12	⬆️	⬆️	⬆️	⬇️	⬆️	13.75	3	Intel Core i5 2.3 GHz	8	128
✓	12	Apple MacBook 12-inch MLHE2LL/A	\$1,300	72	OS X El Capitan 10.11	⬆️	⬆️	⬆️	⬇️	⬆️	13	2.1	Intel Core m3 1.1 GHz	8	256
✓	13	Apple MacBook 12-inch MF855LL/A	\$1,300	72	OS X Yosemite 10.10	⬆️	⬆️	⬆️	⬇️	⬆️	12.5	2	Intel Core M 1.1 GHz	8	256
✓	14	Apple MacBook Pro 13-inch with Retina Display MF839LL/A	\$1,100	72	OS X Yosemite 10.10	⬆️	⬆️	⬆️	⬇️	⬆️	14.5	3.5	Intel Core i5 2.7 GHz	8	128
14-INCH LAPTOPS															
✓	1	Lenovo Yoga 910	\$1,115	78	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	14	3	Intel Core i7-6500U 2.7 GHz	8	256
✓	2	LG Gram 14 Touchscreen	\$1,165	76	Windows 10 Home	⬆️	⬆️	⬆️	⬆️	⬆️	12.75	2.1	Intel Core i5-7200U 2.5 GHz	8	256
💰	3	Lenovo Yoga 710 80V4000GUS	\$805	72	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	10.25	3.4	Intel Core i5-7200U 2.5 GHz	8	256
✓	4	Lenovo ThinkPad X1 Carbon 4th Gen.	\$2,025	69	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	11.25	2.6	Intel Core i5-6200U 2.3 GHz	8	128
15- TO 16-INCH LAPTOPS															
✓	1	Samsung Notebook 9	\$1,400	77	Windows 10 Home	⬆️	⬆️	⬆️	⬇️	⬆️	12.5	2.6	Intel Core i7-7500U 2.7 GHz	16	256
💰	2	Lenovo Yoga 720-15IKB	\$1,000	76	Windows 10 Home	⬆️	⬆️	⬆️	⬆️	⬆️	12.75	4.4	Intel Core i7-7700HQ 2.8 GHz	8	256
✓	3	Apple MacBook Pro 15-inch with Touch Bar MPTU2LL/A	\$2,400	74	MacOS Sierra 10.12	⬆️	⬆️	⬆️	⬇️	⬆️	14.5	4	Intel Core i7 2.8 GHz	16	256
✓	4	Apple MacBook Pro 15-inch with Retina Display MJLQ2LL/A	\$1,800	74	OS X Yosemite 10.10	⬆️	⬆️	⬆️	⬇️	⬆️	12.5	4.4	Intel Core i7 2.2 GHz	16	256
✓	5	HP Spectre 15-BL012DX x360	\$1,500	73	Windows 10 Home	⬆️	⬆️	⬆️	⬆️	⬆️	10.75	4.4	Intel Core i7-7500U 2.7 GHz	16	512
💰	6	Samsung Notebook 9 NP900X5L-K02US	\$1,030	73	Windows 10 Home	⬆️	⬆️	⬆️	⬆️	⬆️	8.25	2.8	Intel Core i7-6500U 2.5 GHz	8	256

### HOW WE TEST:

**Desktops and Laptops:** Overall Score reflects all the ratings factors out of a total score of 100. Performance reflects speed while running productivity applications,

multimedia applications, and 3D games. Versatility includes hardware such as memory-card slots and audio/video connections, software such as productivity applications, and tech support and warranty.

Display covers criteria including clarity, color, and brightness. Weight (Lb.) includes the battery (and the keyboard dock of detachable laptops) but not the power adapter.

**Printers:** Overall Score is based mainly on speed, as well as text, graphics, and photo quality. Maintenance Ink Use is the amount of extra ink used by the printer to maintain its print heads. For more ratings go to [CR.org](https://www.crd.org).

## ALL-IN-ONE DESKTOPS

Rec.	Rank	Brand & Model	Price	Overall Score	Operating System	Test Results					Features		
						Performance	Versatility	Ergonomics	Display	Speakers	Processor	Memory (GB)	Storage (GB)
	1	HP Envy 27-b110	\$2,000	86	Windows 10 Home						Core i7-7700T	16	1128
	2	HP Envy 27-b014	\$1,650	86	Windows 10 Home						Core i7-6700T	16	2256
	3	Microsoft Surface Studio	\$3,000	85	Windows 10 Pro						Core i5-6440HQ	8	1000
	4	Asus Zen Pro 240IEGT-16	\$1,480	84	Windows 10 Home						Core i7-7700T	12	1128
	5	HP Pavilion 24-b217c	\$800	83	Windows 10 Home						Core i5-7400T	12	1000
	6	Dell Inspiron 5488-7536SLV	\$1,000	82	Windows 10 Home						Core i7-7700T	12	1000
	7	Apple 27-inch iMac MNE92LL/A	\$1,800	77	MacOS Sierra 10.12						Core i5	8	1032
	8	Asus Zen Z240IC-GT-09S	\$1,150	77	Windows 10 Home						Core i5-6400T	8	1000
	9	HP Pavilion 24-b230	\$750	76	Windows 10 Home						Core i5-7400T	8	1000
	10	Lenovo 510-22ISH	\$500	75	Windows 10 Home						Pentium G4560T	8	1000
	11	HP Pavilion 27-a230	\$950	75	Windows 10 Home						Core i5-7400T	12	1000
	12	Dell Inspiron 3464-5007BLK	\$800	73	Windows 10 Home						Core i5-7200	8	1000

## PRINTERS

Rec.	Rank	Brand & Model	Price	Overall Score	Test Results								Features	
					Text Quality	Text Speed	Graphics Quality	Photo Quality	Maintenance Ink Use	Scan Quality	Copy Quality	Total Ink Cost/Month	Text Speed (PPM)	Built-In Fax

### ALL-IN-ONE INKJET PRINTERS

	1	Epson Expression Premium XP-640	\$80	74								\$9.80	9.4	
	2	Epson Expression Premium XP-830	\$130	74								\$9.20	10.3	•
	3	HP Envy 7640	\$130	71								\$11.00	10.0	•
	4	Epson Workforce Pro WF-5690	\$300	71								\$5.70	15.0	•
	5	Brother MFC-J680DW	\$120	70								\$8.40	9.7	•
	6	Canon Pixma MX532	\$150	70								\$9.00	9.1	•
	7	Epson Workforce Pro WF-4630	\$180	70								\$6.80	15.8	•
	8	HP OfficeJet 250 Mobile	\$280	69								\$8.10	10.0	
	9	Epson Workforce Pro WF-6530	\$500	69								\$9.00	18.8	•
	10	Epson Expression Photo XP-960	\$300	68								\$10.10	5.7	

### ALL-IN-ONE BLACK-AND-WHITE LASER PRINTERS

	1	Dell S2815dn	\$360	77				NA				\$2.70	25.0	•
	2	Dell H815dw	\$380	77				NA				\$2.70	23.1	•
	3	Samsung Xpress M2885FW	\$200	76				NA				\$3.30	17.6	•
	4	Canon ImageClass MF249dw	\$210	76				NA				\$3.70	20.0	•
	5	Brother MFC-L2700DW	\$150	74				NA				\$4.50	15.0	•

# Healthy Work Habits

A desk job can make your muscles kinked and knotted. Here's how to stay fit and feeling good no matter how you work—sitting down, standing up, or even in your bed.



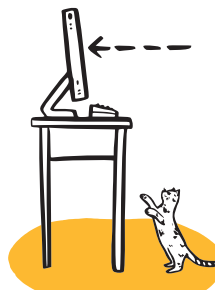
## Exercise Ball

Swapping your desk chair for one of these oversized inflated balls has been touted as a way to burn calories and strengthen abdominal, pelvic, and lower-back muscles, but there's no evidence that it will. In fact, ergonomics experts say that resting your spine against a chair back, which can support its natural curve, is better than trying to maintain a straight-back posture without support for long periods. A better bet than a ball is to get up and move for a few minutes every half-hour. This is important for overall health: Too much sitting appears to increase the risk of heart disease, type 2 diabetes, and cancer, according to a review of studies published in 2015 in the journal *Annals of Internal Medicine*.



## Task Chair

These wheeled swivel chairs, including the Herman Miller Aeron Chair, allow multiple adjustments, such as seat and armrest height and, most important, lumbar support. Whichever you choose (see *Recalls*, below, for one to avoid), sit with your feet flat on the floor, arms at a 90-degree angle for typing, shoulders relaxed, and elbows near your sides and on the armrests. The center of the monitor should be at eye level. Reclining slightly will help prevent backaches and fatigue, says Alan Hedge, Ph.D., professor of ergonomics at Cornell University. "When you lean forward, you lose a lot of the functionality of the chair," he says. You can save by buying your chair at a good secondhand office supply store.



## Standing desk

Prolonged sitting can have potentially negative effects on your health. Standing desks generally get you to sit less, but that doesn't mean you'll get all the physical activity you need every day, Hedge says. His research finds that the optimal mix is 20 minutes of sitting, 8 minutes of standing, and 2 minutes of moving around. A standing desk paired with a high task chair is a good option for trying to approach that mix. You could also consider a sit-to-stand workstation, which you can quickly raise and lower as you change position. Just be sure your desktop is high enough: The center of your monitor should be even with your eyes, and your arms should be at a 90-degree angle while you type.



## Your Bed

The awkward postures you might adopt using your laptop in bed—slumped or hunched—is what may come naturally—can lead to neck pain and backaches. To avoid that, sit with your back to the wall or headboard, with one pillow placed horizontally behind your lower back for support and one vertically along the length of your spine for cushioning, Hedge says. To position your laptop properly on your lap, put a few pillows on your thighs and bend your legs slightly, so you're looking straight ahead—not down—at the screen. Be sure to rest the computer on a lap desk (or other traylike surface) on top of the pillows, so the device's vents remain unobstructed. Otherwise, your laptop could overheat.



## RECALLS



### COFFEE PRESSES

Bradshaw International is recalling about 85,000 Bialetti coffee

presses because the glass beakers can break during use, posing a risk of laceration. The presses were sold at specialty and grocery stores nationwide and at Amazon.com from July 2016 through March 2017 for \$15 to \$20.

**What to do:** Stop using the press. For a free replacement, call the company at 877-614-9571 or click [Recalls](#) at [bradshawintl.com](#).



### OFFICE CHAIRS

Staples is recalling about 124,000 Quill Hazen Mesh Task chairs

because the legs on the base can break. The chairs were sold nationwide and online from October 2014 through April 2017 for between \$100 and \$180.

**What to do:** Stop using the chair and call Staples at 866-755-1321 or go to [staples.com](#) and click on *Warranty & Recall* under the *Customer Service* tab to arrange for a free replacement base.



### LIGHT FIXTURES

Design Solutions International is recalling about 64,200 Home


Decorators Collection light fixtures. The shades—made of chrome-colored glass—can fall off, posing burn or laceration risks. The lights were sold at Home Depot stores and online from December 2014 through March 2017 for between \$95 and \$110.

**What to do:** Call the company at 800-388-6141 or go to [dsilighting.com](#) and click *Recall Information* for free replacements.


# How to Keep the Bugs Away

Discover which repellents work well—and those that don't—against mosquitoes and ticks.

by Jeneen Interlandi

 **LIKE MOST UNINVITED** guests, mosquitoes and ticks tend to linger—in this case, well after summer celebrations end. Depending on where you live, you may need to take precautions against those bugs into autumn, according to the Centers for Disease Control and Prevention.

What's more, the number of diseases that the insects carry and the geographical range across which they can spread are growing. That includes familiar diseases, like West Nile and Lyme, and some lesser-known ones, such as Powassan. "Mosquitoes and ticks are being found in new areas," says a CDC spokesman, Benjamin Haynes. "We also know that many people do not recognize the risks of getting bitten or regularly take steps to protect themselves."

 Those measures include things like ridding your yard of standing water (where mosquitoes breed), repairing any holes in the screens on your windows and doors, and wearing long pants and closed-toe shoes plus socks when in the great outdoors.

It also means using an effective repellent. But making sense of the options isn't easy. Do lotions work as well as sprays? Are store brands okay? Is the active ingredient the only thing you really need to know? And what about "natural" repellents?

## What Works Best

Our ratings focus on how long a repellent protects against mosquitoes. The highest-rated products protect for 6.5 hours or more, the lowest-rated

ones for 2 hours or less. Our tests have shown that repellents that work well against mosquitoes consistently protect against ticks, too.

We also found that the type and concentration of active ingredient were most important in identifying effective repellents. Among our nine recommended ones, there are only three active ingredients: deet, at 15 to 30 percent concentration; 20 percent picaridin; and 30 percent oil of lemon eucalyptus (OLE). Products with lower concentrations of those ingredients didn't work as well, nor did those with other active ingredients.

The Environmental Protection Agency says—and our experts agree—that when used appropriately, those three ingredients are safe.

## The Problem With 'Natural'

Picaridin and OLE are derived from plants. Picaridin is a synthetic chemical modeled after one found in black pepper plants; OLE is an oil extract of the gum eucalyptus tree.

Many other plant-based repellents, or botanicals, are also available, including those with citronella, geraniol, or soybean oil. But unlike picaridin- and OLE-based repellents, botanicals aren't registered with the EPA. That's because the agency considers botanicals unlikely to pose serious risks, so it doesn't require manufacturers to prove that the products actually work.

And our testing has repeatedly found that they don't work well. In addition, while botanicals may not pose serious safety risks, they can cause allergic

reactions. More important, using a less effective repellent leaves you vulnerable to dangerous insect-borne diseases.

## Face-Off: Lotion vs. Spray

Our top-performing repellents include sprays and lotions, suggesting that you don't have to worry too much about the form of your repellent—with one important exception.

We found that Sawyer's 20 percent picaridin lotion protected for less than an hour, while its 20 percent picaridin spray worked for 7 hours. Travis Avery, a company spokesman, suggests that the discrepancy stems from the amount of repellent we applied on our test subjects. People usually apply about 1.5 times as much lotion as we used in our test, he says, and at that higher amount the lotion is long-lasting, he maintains. "Sawyer stands by the effectiveness and longevity claims on our product," Avery says.





























































Consumer Reports tests all repellents using the same amount of each product, to ensure a fair comparison. The EPA doesn't require that manufacturers tell consumers exactly how much repellent to apply—and Sawyer's label doesn't recommend specific amounts (nor do any other repellents we tested).

Joe Conlon, an adviser to the American Mosquito Control Association, says there's no reason to apply more of one repellent than another. "Use just enough to cover your skin," he says. "That should be enough for any product to work as advertised."



**Ratings** ➤ **Bug Busters** Focus on effectiveness against mosquitoes and ticks, but look at cost and risk to clothes and other materials, too. All products we recommend are safe when used properly.



		Brand & Product	Price	Overall Score	Test Results		Active Ingredients	Type	Cost Per Oz. (\$)	
Recommended	Rank				Protection Against Mosquitoes and Ticks	Resists Damage to Materials				
		1	<b>Total Home</b> (CVS) Woodland Scent Insect Repellent	\$7	<div><div>95</div></div>			Deet 30%	Aerosol	1.17
		2	<b>Off</b> Deep Woods Insect Repellent VIII Dry	\$8	<div><div>94</div></div>			Deet 25%	Aerosol	2.00
		3	<b>Repel</b> Plant-Based Lemon Eucalyptus Insect Repellent2	\$5	<div><div>91</div></div>			Oil of lemon eucalyptus 30% [Approx. 65% p-menthane-3,8-diol]	Pump Spray	1.25
		4	<b>Ben's</b> 30% Deet Tick & Insect Repellent	\$8	<div><div>88</div></div>			Deet 30%	Aerosol	1.33
		5	<b>Sawyer</b> Premium Insect Repellent 20% Picaridin	\$7	<div><div>84</div></div>			Picaridin, 1-Methylpropyl-2-(2-hydroxyethyl)-1-piperidine carboxylate 20%	Pump Spray	1.75
		6	<b>Repel</b> Insect Repellent Scented Family 15% Deet	\$4	<div><div>84</div></div>			Deet 15%	Aerosol	0.62
		7	<b>Sawyer</b> Ultra 30 Insect Repellent	\$10	<div><div>84</div></div>			Deet 30%	Lotion	3.33
		8	<b>Off</b> Deep Woods Sportsmen Insect Repellent II	\$5	<div><div>74</div></div>			Deet 30%	Aerosol	0.63
		9	<b>Natrapel</b> Tick & Insect Repellent	\$9	<div><div>70</div></div>			Picaridin 20%	Aerosol	1.50
		10	<b>Coleman</b> SkinSmart Insect Repellent	\$8	<div><div>58</div></div>			3-[N-Butyl-acetyl]-amino propionic acid ethyl ester IR3535 20%	Aerosol	1.33
		11	<b>Coleman</b> Botanicals Insect Repellent	\$6	<div><div>56</div></div>			Oil of lemon eucalyptus 30% [Approx. 65% p-menthane-3,8-diol]	Pump Spray	1.50
		12	<b>Avon</b> Skin-So-Soft Bug Guard Plus Picaridin	\$16	<div><div>56</div></div>			Picaridin 10%	Aerosol	4.00
		13	<b>HOMS</b> BioUD Insect Repellent & Clothing Treatment Mini Trigger	\$9	<div><div>38</div></div>			2-Undecanone (CAS # 112-12-9), 7.75%	Pump Spray	1.50
		14	<b>Cutter</b> Lemon Eucalyptus Insect Repellent	\$5	<div><div>36</div></div>			Oil of lemon eucalyptus 30% [Approx. 65% p-menthane-3,8-diol]	Pump Spray	1.25
		15	<b>Cutter</b> Skinsations Insect Repellent1	\$6	<div><div>21</div></div>			Deet 7%	Pump Spray	1.00
		16	<b>Up &amp; Up</b> (Target) 7% Deet Insect Repellent Unscented	\$5	<div><div>10</div></div>			Deet 7%	Pump Spray	0.67
		17	<b>All Terrain</b> Herbal Armor Natural Insect Repellent	\$10	<div><div>9</div></div>			Oil of soybean 11.5%, oil of citronella 10%, oil of peppermint 2%, oil of cedar 1.5%, oil of lemon grass 1%, oil of geranium 0.05%	Pump Spray	2.50
		18	<b>Off</b> FamilyCare II Insect Repellent Clean Feel	\$6	<div><div>9</div></div>			Picaridin 5%	Pump Spray	1.00
		19	<b>Cutter</b> Natural Insect Repellent	\$4	<div><div>9</div></div>			Geraniol 5%, soybean oil 2%, sodium lauryl sulfate 0.4%, potassium sorbate 0.1%	Pump Spray	0.67
		20	<b>All Terrain</b> Kids Herbal Armor Natural Insect Repellent	\$10	<div><div>7</div></div>			Oil of soybean 11.5%, oil of citronella 10%, oil of peppermint 2%, oil of cedar 1.5%, oil of lemon grass 1%, oil of geranium 0.05%	Pump Spray	2.50
		21	<b>EcoSmart</b> Insect Repellent	\$6	<div><div>5</div></div>			Geraniol 1%, rosemary oil 0.5%, cinnamon oil 0.5%, lemon-grass oil 0.5%	Pump Spray	1.00
		22	<b>California Baby</b> Natural Bug Blend Bug Repellent	\$16	<div><div>5</div></div>			Pure essential oils of cymbopogon nardus (citronella) 5%, cymbopogon schoenanthus (lemon grass) 0.5%, cedrus atlantica (cedar) 0.5%	Pump Spray	2.46
		23	<b>Sawyer</b> Picaridin Insect Repellent	\$9	<div><div>4</div></div>			Picaridin, 1-Methylpropyl-2-(2-hydroxyethyl)-1-piperidine carboxylate 20%	Lotion	2.25
		24	<b>Up &amp; Up</b> (Target) Deet-Free Insect Repellent	\$5	<div><div>4</div></div>			Oil of citronella, 2.5%, geraniol, 2.5%, soybean oil, 1.5%, potassium sorbate, 0.1%	Pump Spray	0.67
	25	<b>HOMS</b> Organic Bite Blocker Insect Repellent Itch & Sting Relief	\$9	<div><div>3</div></div>			Soybean oil, 2%, geranium oil, 5%	Lotion	2.25	

**HOW WE TEST** We apply a standard dose of repellent to a measured, exposed area on the forearms of test volunteers, and have them stick

each arm into a cage of disease-free mosquitoes. This is done at 30 minutes and 1 hour after applying, then hourly until the tester receives either two bites

in one 5-minute session or one bite in each of two consecutive sessions. Excellent repellents protect for more than 6.5 hours; poor ones for 2 hours

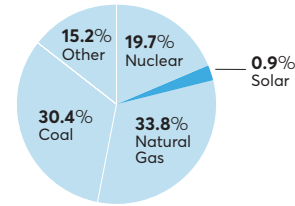
or less. Repellents that work well against mosquitoes also work well against ticks, our tests have shown. For more information, go to [CR.org/repellents0917](https://www.consumerreports.org/repellents0917).



# Insights

Notable news and smart solutions

As an electricity source, solar, while small, has grown at an average rate of 68% annually over the past decade.



Source: United State Energy Information Administration; SEIA/GTM Research U.S. Solar Market Insight™.

## Something New Under the Sun

Tesla just released its new Solar Roof, saying you can turn your home “into a personal utility.” We analyzed the installation costs—and potential savings—to see what might be in the forecast for your energy bill.

by Paul Hope

**Raising the Roof**  
Tesla's Solar Roof takes a different (and pricey) approach to solar power. Shown here are the smooth Solar Roof tiles.

**IN MAY**, when Tesla announced pricing for its much-hyped Solar Roof, plenty of homeowners plunked down their \$1,000 deposit. So many, in fact, that Tesla is sold out of the product until early 2018.

Consumer Reports hasn't tested (or even handled) these new-to-market solar tiles. But CR's statisticians did put three hypothetical projects through their paces to see how the potential savings the company touts—via a calculator at [tesla.com/solarroof](http://tesla.com/solarroof)—would play out in the real world. Tesla's virtual tool allows you to input the specs of your own house to run an individualized cost-benefit analysis.

The Solar Roof carries a price in the tens of thousands of dollars, compared with traditional solar panels that typically run between \$12,000 and \$16,000. But it's hard to make a direct comparison to traditional panels, since Tesla hasn't released certain details, such as the electricity output of these new systems. We asked Tesla about the efficiency and output of Solar Roof; at press time, the company declined to comment on the record.

For now, we applied the math to widely different homes across the country to help you determine whether your next roof should be solar. First, answers to common questions about this innovative product and its pricing.

**Q: How does Tesla calculate potential savings?**

**A:** When you enter your address on the Solar Roof calculator, Tesla pulls data from the U.S. Energy Information Administration about your local rate for electricity, as well as from

Project Sunroof, a Google tool that estimates geographic solar savings. Then the company determines the number of energy-producing tiles you need to power your home.

Tesla also makes cheaper nonsolar tiles and will recommend a split (50/50, say, or 60/40), taking shaded or low-light areas into account (for more details on how these roof tiles operate, see "Shedding Light on Tesla's Application of Solar Technology," on page 22). Factoring in a federal tax credit, the calculator computes how much the project will cost and whether you'd recoup your investment after 30 years.

**Q: But energy prices are a moving target. How can I really know what my long-term savings will be?**

**A:** That's true—you can't, precisely. The price we pay to power our homes fluctuates with everything from the laws of supply and demand to changes in government regulations and policy. So it's difficult to project the future cost of electricity with certainty.

The Solar Roof calculator assumes your electric bill will increase by 2 percent each year over the next 30 years, meaning that 30 years from now you'll be paying about 78 percent more for electricity than you are today. But if the cost of electricity does not increase, that could dramatically alter the cost-benefit analysis of installing the Solar Roof.

When we ran the numbers on real-world houses, we found that a CR staffer with a 2,700-square-foot house near our Yonkers, N.Y., headquarters would save \$46,800 in electricity over 30 years—more

than enough to recoup the installation costs and pocket a net savings of \$13,900. (See the complete breakdown on page 21.) That's based, of course, on Tesla's baked-in prediction of a 2 percent annual increase in electricity costs. But if electricity rates stay flat for the next 30 years, that same staffer would save about \$34,600 in energy costs and pocket a modest \$1,700 net savings after 30 years. If rates dropped by 5 percent next year and stayed there, installing the system would result in a net loss of several hundred dollars.

Then again, energy costs could always rise faster than Tesla is predicting, in which case your potential savings would grow proportionally. Much like the energy economy itself, your potential savings with the Solar Roof are highly variable.

**Q: What if I'm not sure how long I'll stay in my current house?**

**A:** According to Tesla, the solar tiles are warrantied to produce electricity for 30 years. And the company's calculator bases potential savings on a 30-year time frame. But your savings could diminish dramatically if you move or sell before then.

And in fact, most people do. According to an American Housing Survey (a joint effort by the Department of Housing and Urban Development and the Census Bureau), about half of Americans will move after 13 years of home ownership. If you move out 13 years after installing a Solar Roof, you'd miss out on potentially the most profitable years of owning it. No scenario we've run through the calculator would allow you to recoup the roof's

cost in that amount of time.

"According to Tesla's calculator, the CR staffer in New York would stand to save \$1,153 in electricity in the Solar Roof's first year," explains Michael Saccucci, CR's director of statistics. "But that 2 percent annual climb means that they'd save \$2,048 per year by year 30. The potential savings would shrink significantly if that person moved out sooner."

If there's a good chance you'll relocate before recouping the costs but you still like the idea of solar power, consider traditional panels. For an average American house, these systems start around \$12,000 to install over an existing roof. "And if you own the system, traditional solar panels offer 100 percent payback in an average of seven years, depending on your state and utility," explains Vikram Aggarwal, founder and CEO of EnergySage, an online marketplace for comparison shopping solar quotes. That way, if you move or sell after a decade or so, you'll probably have recovered the cost of the system.

**Q: Will installing a Solar Roof improve the resale value of my home?**

**A:** "Residential solar installations are on the rise, and Solar Roof may be the latest evolution," says Amanda Stinton, director of sustainability and green designation at the National Association of Realtors. "But as for resale values, it's early. We'll just have to wait and see." In the 2017 National Association of Realtors Sustainability Report, the organization polled its members and found that 42 percent believed

that traditional solar panels improve the resale value of a property and 9 percent felt that the panels might bring a house's value down.

Any boost to resale value may depend largely on how you pay for the system in the first place. If you pay cash for the high cost of a Solar Roof, you could see a nice bump to your home's resale value. But some homeowners might consider financing the roof with a loan through a bank, credit union, or other lender. Tesla offers financing options for the Solar Roof, too. When you select the finance option in Tesla's calculator, it shows you how the monthly payment would compare with your typical monthly electric bill.

Certain traditional solar-panel companies offer financing as well, and if you decide to sell the home before you've paid off the roof, your contract might allow you to transfer the financing terms to the next owner. Depending on how that person or family feels about solar power (and how your year-over-year electricity savings measure up against the added expense of paying down the loan), it could become a liability—or a boon—for a potential buyer.

### Q: The calculator makes its estimates based on typical electricity use, right?

**A:** Right. Tesla's cost calculator makes some basic assumptions about how much energy a typical home uses. What it can't account for? Your family's habits.

How much electricity your household needs on a day-to-day basis will directly affect what you might save with

a Solar Roof. If your home is optimized to save energy (for example, you have LED lightbulbs and Energy Star certified appliances), you stand to save less because you're already more efficient. To account for this, you can override the calculator's default assumption by clicking "edit assumptions." Enter your average monthly electric bill (you can get a year's worth of statements from your utility company) to get a more accurate picture of how your house would fare.

### Q: Am I entitled to the tax incentives promised by Tesla's calculator?

**A:** Like any solar installation, the Solar Roof qualifies for a 30 percent federal tax credit, which you'd see reflected on future tax returns. But not every component qualifies.

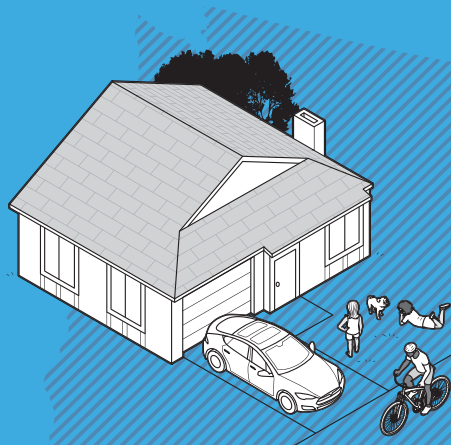
The tax credit applies only to solar-producing tiles and Tesla's Powerwall battery, and only if they're all installed at the same time. For instance, if your roof has a 60/40 split between solar and nonsolar tiles, the tax break wouldn't apply to the cost of tiles that don't produce electricity. You should also know that although the U.S. government has extended the credit for residential solar systems before, the current plan calls for phasing it out: The 30 percent break holds through 2019, then it drops to 26 percent in 2020 and 22 percent in 2021—before expiring in 2022.

Our statistical analysis showed that Tesla's Solar Roof calculator, which displays the federal tax credit to which you'd be entitled, accurately generates that number by applying the 30 percent tax credit only to solar-producing tiles and Powerwall batteries.

You might be entitled to additional tax credits at the state level. Go to [energy.gov/savings](http://energy.gov/savings) to see whether your state offers incentives beyond those at the federal level.

## A Tale of Three Houses

We ran three actual homes through Tesla's online tool to see how the company's calculations about its Solar Roof would perform in real-world circumstances.



### Soak Up the Sun

One-story ranch in Thousand Oaks, Calif.

Built: 1975  
Interior square footage: 1,500  
Roof square footage: 1,878

#### WHAT THE ROOF COSTS

Solar Roof: 50% solar tiles, 50% nonsolar tiles	\$49,800
One Powerwall battery	\$7,000

#### WHAT THE OWNER GETS BACK

Federal tax credit	\$13,900
Estimated energy savings over 30 years	\$84,700

**AFTER 30 YEARS A SOLAR ROOF WOULD SAVE \$41,800**

**SUN-DRENCHED** southern California offers the perfect climate to take full advantage of a Solar Roof. In addition to ample sunshine, California has net metering policies that allow consumers to earn credit for surplus electricity they produce but don't use.

Single-story ranch houses also have more available roof space in proportion to their total square footage, compared with a three-story house. With three levels under a roof of the same size, you'd have more space to light, heat, and cool—with no additional surface area for solar tiles.



LEARN

Visit [CR.org](http://CR.org) for continued coverage as more information on Solar Roof becomes available.

## Through the Roof

Two-story home in  
Bellaire, Texas

Built: 1990  
Interior square footage: 4,562  
Roof square footage: 2,779

### WHAT THE ROOF COSTS

Solar Roof: 50% solar tiles, 50% nonsolar tiles	\$73,600
Two Powerwall batteries	\$12,500

### WHAT THE OWNER GETS BACK

Federal tax credit	\$21,300
Estimated energy savings over 30 years	\$52,100

**AFTER 30 YEARS A SOLAR ROOF RESULTS IN A SAVINGS SHORTFALL OF** **-\$12,700**



## Back to the Future

A three-story Gothic Revival in  
Salisbury Mills, N.Y.

Built: 1850  
Interior square footage: 2,700  
Roof square footage: 1,175

### WHAT THE ROOF COSTS

Solar Roof: 70% solar tiles, 30% nonsolar tiles	\$38,400
One Powerwall battery	\$7,000

### WHAT THE OWNER GETS BACK

Federal tax credit	\$12,500
Estimated energy savings over 30 years	\$46,800

**AFTER 30 YEARS A SOLAR ROOF WOULD SAVE** **\$13,900**



A SPRAWLING home in the Lone Star State seems the perfect place to reap the benefits of a Solar Roof. After all, this house in the Houston suburbs might require air conditioning 250 days a year, and that usage pattern might be an opportunity for energy savings. But according to Tesla's calculator, this system would need two

Powerwall batteries (to store enough electricity to run a home this size when the sun isn't shining). That, coupled with the high cost of a roof this large, means the owner of this house would not recoup the investment after 30 years. In fact, he or she would still have to recover \$12,700 just to break even.

A 19TH-CENTURY farmhouse in upstate New York might not seem like the most obvious candidate for solar power, but the owner would come out financially ahead after 30 years—provided he or she paid for the Solar Roof outright. Financing the roof, even at a modest 3 percent interest over the 30 years for which it's warrantied, would add

more than \$23,000 in interest charges, erasing any savings and costing the owner about \$9,000 total in the end.

The \$13,900 in savings also assumes that this family stays put. If they move after 13 years, they'd be out \$15,965. That, or the owner would need to find a buyer who placed real value on the investment and reflected that in the purchase price.

## Shedding Light on Tesla's Application of Solar Technology

*The automaker's new power play is a product that does double duty as a roof and an energy generator. Consumers may also find the roof an aesthetic leap forward. However, to find out if it works as promised, homeowners will need to take the long view.*

TRADITIONAL SOLAR PANELS, which still represent the bulk of the market, are usually mounted on top of a homeowner's roof and convert sunlight into electricity. The panels connect to a meter that keeps track of the electricity the system produces, sending any surplus back into the grid. A battery can be used to store surplus energy for rainy days. Tesla's Solar Roof is different in that its glass solar tiles take

the place of roofing shingles, avoiding the look of big, boxy panels. Tesla's thin tiles contain solar cells sandwiched between layers of tempered glass. Based on the energy needs of your home and the amount of sunlight your roof receives, the company recommends installing a mix of energy-producing tiles and cheaper nonsolar tiles; the two types

look alike from street level, according to Tesla. Again, based on your energy needs, the company also recommends that you install one or more of its Powerwall batteries to store electricity for later use. (The batteries, which carry a 10-year warranty, start at \$7,000 apiece; Tesla's pricing calculator drops the cost if it suggests you install multiple batteries at the same time.)

CR has not tested these tiles. But Tesla claims the product is more than three times stronger than standard roofing tiles and offers an "infinite tile warranty" for physical damage, such as from a hailstorm. The tiles are warrantied against weatherization (i.e., leaks) for 30 years, a length of time in line with traditional roofing shingles.

### Smooth tiles

Available to order now



### Tuscan tiles

Available to order in 2018



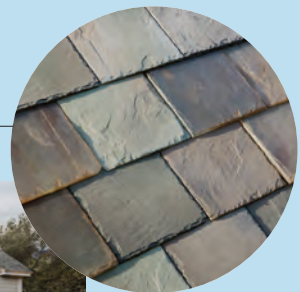
### Textured tiles

Available to order now



### Slate tiles

Available to order in 2018





## How do ransomware attacks work? And if one happens to me, should I pay?

When you've been hit by ransomware, you'll know it: The malicious software infects a victim's computer with a virus, locking the device's data so that it can no longer be accessed. Then an onscreen message appears telling the victim to pay—often a few hundred or thousand dollars in bitcoin online currency—or never be able to access those files again. Because the ransomed data is encrypted, little can be done to recover your files or trace the cybercriminal.

But according to a survey by Symantec's Norton Cyber Security Insight Team, only 47 percent of victims who paid ransom reported that their data

was subsequently unlocked. "So there's no guarantee you'll get your files back," says Russell Vines, Consumer Reports' director of information security. Plus, paying only rewards cybercrime and won't fix your security vulnerability, which means a hacker could hit you again.

The best offense truly is defense, when it comes to security. Vines advises regularly backing up your files to the cloud or another drive. That way if your computer does get ransomed, you can wipe the infected device's hard drive and start over. (Go to [CR.org/data0917](http://CR.org/data0917) for our experts' data-restoring advice.) Also, always install security updates promptly and be alert to "phishing" scams that come by email. According to the IBM X-Force research team, 40 percent of the spam emails they analyzed in 2016 contained ransomware. That's up from an average of just 0.6 percent in 2015.



LEARN

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

### In my drugstore, I saw that 'prescription-strength' Flonase Allergy Relief is for sale without a prescription. What gives?

Flonase Allergy Relief (fluticasone propionate) is just one of many formerly prescription-only medications that are now sold over the counter. In fact, according to the Consumer Healthcare Products Association, more than 700 current OTC drugs once required a prescription. "Over the last five years, seven of the nine drugs that were switched from Rx to OTC were allowed to contain the exact strength as the prescription version," says Lisa Gill, deputy editor of Consumer Reports Best Buy Drugs. OTC Flonase is one of them.

When a drug manufacturer applies to make a prescription drug available OTC, it must prove to the Food and Drug Administration that the drug can be safely self-administered when following the instruction label—without medical oversight. The FDA considers whether the prescription-strength dose is habit forming or toxic. In those cases, the FDA may require that the OTC formulation be a lower dose

than the Rx version. By touting "prescription strength," drugs like Flonase are telling you the dosage is unaltered.

### I keep reading about laptops catching fire on planes. What can I do to stay safe?

When a laptop, phone, camera, or other portable electronic device heats up, sparks, or explodes, the culprit often is the lithium-ion (Li-ion) battery inside. Though the chance of any single Li-ion battery igniting is slim, you're right to be wary: In 2017 the Federal Aviation Administration reported at least 18 incidents involving Li-ion batteries through the end of May. Some were caused by damage to the battery, others by a defect.

"Battery fires of all types are dangerous. They burn very hot, can emit toxic byproducts, and can flare up again even hours after it seems like the fire was extinguished," says Consumer Reports' chief scientific officer, James H. Dickerson, Ph.D.

So take precautions: Pack Li-ion devices and extra batteries in your carry-on, not in checked luggage, so that you can see them if they spark. If you do spot trouble, don't touch the device or attempt to douse it with water; that can result in electric shock or the unintended spread of red-hot chemicals that disperse the harmful toxic materials. Instead, immediately notify the flight crew, who have safety equipment designed to contain the fire safely.



# Too Many Meds?





Americans are taking more prescription pills than ever before, and more than people in any other country. But that may be doing more harm than good. Follow our doctor-approved plan to discover how you can take fewer meds—and feel better.

**by Teresa Carr**



**If** you're like most Americans, you probably start your day with a hot shower, a cup of coffee—and a handful of pills.

More than half of us now regularly take a prescription medication—four, on average—according to a new nationally representative Consumer Reports survey of 1,947 adults. Many in that group also take over-the-counter drugs as well as vitamins and other dietary supplements.

It turns out Americans take more pills today than at any other time in recent history (see “*Pill Nation: The Rise of Rx Drug Use*,” on page 38)—and far more than people in any other country.

Much of that medication use is lifesaving or at least life-improving. But a lot is not.

The amount of harm stemming from inappropriate prescription medication is staggering. Almost 1.3 million people went to U.S. emergency rooms due to adverse drug effects in 2014, and about 124,000 people died from those events. That's according to estimates based on data from the Centers for Disease Control and Prevention and the Food and Drug Administration. Other research suggests that up to half of those events were preventable.

All of that bad medicine is costly, too. The U.S. spends an estimated \$200 billion per year on the unnecessary and improper use of medication, for the drugs themselves and related medical costs, according to the market research firm IMS Institute for Healthcare Informatics.

Our previous surveys have found that higher drug costs—including more expensive drugs and higher out-of-pocket costs—also strain household budgets, with many people telling us they had to cut back on groceries or delay paying other bills to pay for their prescriptions.

The nation's expensive and harmful pill habit comes in several forms:

**Taking too many drugs.** Nicole Lamber of Williamsburg, Va., says she became “completely nonfunctional”—with pain, rashes, diarrhea, and anxiety—from the adverse effects of several drugs, including some her doctors prescribed to treat side effects from her initial prescriptions.

**Taking drugs that aren't needed.** Jeff Goehring of Waukesha, Wis., suffered a debilitating stroke shortly after he began taking testosterone, which his doctor prescribed for fatigue even though the FDA hadn't approved it for that use, according to a lawsuit he's involved in.

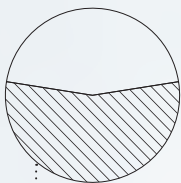
**Taking drugs prematurely.** Diane McKenzie from Alsip, Ill., had regular bouts of diarrhea and vomiting, side effects she attributed to the drug metformin, which her doctor prescribed for “prediabetes,” or borderline high blood sugar. But McKenzie found that losing weight controlled her blood sugar levels without drugs.

Why would so many people take so many potentially harmful pills?

Partly because while all drugs pose some risks, they're often essential, treating otherwise deadly or debilitating diseases, notes Andrew Powaleny, director of public affairs for the Pharmaceutical Research and Manufacturers of America (PhRMA), a trade group.

To be sure, some people—especially those who are uninsured or underinsured—don't get all of the care they need, including medication.

Still, many Americans—and their physicians—have come to think that every symptom, every hint of disease requires a drug, says Vinay Prasad, M.D., an assistant professor of medicine at Oregon Health & Science University. “The question is, where did people get that idea? They didn't invent it,” he says. “They were spoon-fed that notion by the culture that we're steeped in.”



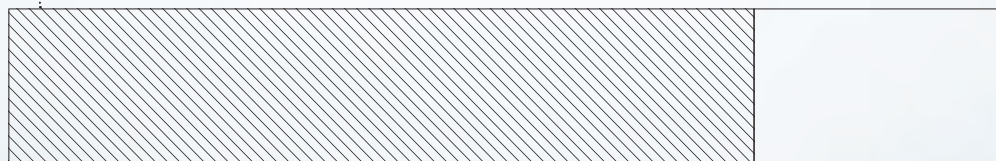
55%

of Americans regularly take prescription medication—four, on average.



75%

of them also take at least one over-the-counter drug regularly.



It's a culture, say the experts we consulted, encouraged by intense marketing by drug companies and an increasingly harried healthcare system that makes dashing off a prescription the easiest way to address a patient's concerns.

To investigate this growing problem and to help you manage your drugs, we sought expert advice on how to work with doctors and pharmacists to analyze your drug regimen. We reviewed the drug lists submitted by 20 Consumer Reports readers to see whether we could find problems, and alerted them when we did. We also dispatched 10 secret shoppers to 45 drugstores across the U.S. to see how well pharmacists identify potentially problematic drug interactions. And last, we compiled a list of 12 conditions that are often first treated with drugs—but usually don't need to be.

## A Growing Tide of Risk

Nicole Lamber's problems started with a single prescription when, stressed in her first job as a physician's assistant, a physician colleague prescribed alprazolam (Xanax). "I wasn't given any warning about anything at all, it was just presented as a safe drug," she says. Within a few months, Lamber, who is now 38, was depressed, even suicidal. "It scared me," she remembers.

Over the next five years, Lamber says she saw a series of doctors who prescribed more and more drugs: the ADHD medication Adderall to lift her mood and help her focus; another to counter the side effects of that drug; others to improve her

appetite and help her sleep; and when her anxiety worsened, another sedative.

The combination, she says, made her so ill she couldn't leave the house. "I saw tons of specialists," she recalls. "A gastrointestinal doctor for chronic diarrhea, an orthopedist and rheumatologist for joint pain, a dermatologist for rashes. None of them questioned my list of meds."

Lamber's story is hardly unique: The percentage of Americans taking more than five prescription drugs has nearly tripled in the past 20 years, according to the CDC. And in our survey, over a third of people 55 and older were taking that many drugs; 9 percent were taking more than 10.

In some cases, multiple drugs are "completely appropriate," says Michael Hochman, M.D., of the Keck School of Medicine at the University of Southern California. But as the number of drugs piles up, so does the need for caution. "The risk of adverse events increases exponentially after someone is on four or more medications," he says.

That's especially true when multiple doctors are involved. Poor communication between providers often contributes to drug errors, says Michael Steinman, M.D., at the University of California, San Francisco School of Medicine. And seeing more than one doctor is now the norm: 53 percent of those in our survey taking prescription drugs said they received them from two or more providers.

Potentially harmful prescribing is all too common, says Steven Chen, Pharm.D., an associate dean for clinical affairs at the University of Southern California School of Pharmacy, who worked with Consumer Reports to review the



### LEARN

For more information on the best and safest treatments, plus how to save money on your medications, go to [CRBestBuyDrugs.org](http://CRBestBuyDrugs.org).

#### CASE 1

## Using One Drug to Treat the Side Effects of Another



**Glenn Bitzan, 32**  
St. Cloud, Minn.

**What he took:** The stimulants Ritalin, Adderall, and Vyvanse to treat ADHD, and then four antidepressants to treat the side effects of the stimulants.

**Why he wanted to stop:** Soon after Bitzan was diagnosed with ADHD at age 13, his psychiatrists prescribed progressively higher doses of a stimulant to treat the condition,

he says. When that triggered sleeplessness, anxiety, a racing heart, and shaking hands, doctors prescribed a series of antidepressants to counter the stimulant. But instead of calming him, they "just dampened my emotions," Bitzan says. Then one day, while taking a test as an ultrasound technician student, Bitzan's shaky hands caused him to fail

the exam. "I'd never been so devastated in my life," he says. "I knew I had to get off the medication."

**How he did it:** Bitzan entered a prescription-drug-withdrawal program, called Point of Return, which took five months. Being medication-free has changed his life, he says. "My sleep is much improved; I have a stable job," he says. "I'm much happier."

medication lists submitted by readers. (Chen, like many pharmacists reviewing drugs, didn't have access to medical records.) Of the 20 lists he reviewed, only two received a clean bill of health. Among the other 18, Chen identified 38 potential problems, half of which he considered serious. They included one person taking a combination of blood-pressure drugs that could cause potassium levels to spike and trigger dangerous heartbeat abnormalities, and another's mix of a blood thinner, a pain reliever, and baby aspirin that could cause stomach bleeding.

Identifying those kinds of risks and untangling potential harmful interactions can be difficult.

For Lamber, it meant finding a doctor who was willing to help. Still, stopping the drugs was a long, "nightmarish" process, she says, because she had become physically dependent on them and it triggered painful withdrawal symptoms. Today, while some side effects linger, she says she feels lucky to be alive. "The drugs—and the withdrawal from them—almost killed me," she says.

## Selling Sickness

Jeff Goehring, now 55, ran a busy deli and snowplowing business in 2009 when he says he started feeling more tired than usual. He decided to see a doctor who, he says, prescribed AndroGel, a drug containing the male hormone testosterone.

Goehring says he didn't know then that testosterone drugs are approved by the FDA only for men with hypogonadism, or very low levels of testosterone, usually caused by infection, injury, or other health problems. He also says he wasn't warned that testosterone increases the risk of a heart attack or stroke, according to the FDA.

After four days applying the drug, Goehring suffered a stroke, according to a lawsuit he is part of against AbbVie, AndroGel's maker. He's one of more than 6,000 people nationwide suing six drug companies that make testosterone products, claiming that they suffered a heart attack, stroke, or other cardiovascular event after using one of the drugs.

In a statement to Consumer Reports, AbbVie said the company believes "our disease education and marketing of AndroGel have adhered strictly to FDA-approved uses," and emphasized that it's up to each physician to make sure the drug



## How to Take More Control of Your Meds

IT STANDS TO reason that the more drugs you take, the greater your risk of skipping a dose, taking the wrong pill at the wrong time, or making another mistake.

That's why it's essential to get organized, says Michael Steinman, M.D., a professor of geriatrics at the University of California, San Francisco. That includes using such things as daily pill organizers, as well as taking these steps:

### 1. Keep a thorough log.

Include all of your pills—prescription and over-the-counter drugs, plus supplements. Note their brand and generic names, your dosage and schedule, the reasons you take them, the name of the prescribing physician, and special advice, such as whether you should take them with food or drink. Describe the shape and color of the meds. And write down your pharmacy's phone number, any allergies you may have, and

emergency contact info.

For help, download one of these printable templates: the Food and Drug Administration's "My Medicine Record," a "Personal Medicine Form" from the Institute for Safe Medication Practices, or "My Medicine List" from the American Society of Health-System Pharmacists.

### 2. Make copies.

Store one in your wallet or purse, post another in your home, and give extras to a friend, family member, or caregiver. Review the log regularly with your doctors to make sure it's up to date and to double-check for medication you might be able to eliminate. (See "Give Your Drugs a Checkup," on page 30.)

### 3. Consider a pill-tracking app.

We looked at 11 popular ones. Most were difficult to use or didn't do enough to protect your data privacy. But we found three freebies we think are worth a try: CareZone, Medisafe, and Round Health.

All allow you to add pills by name and dose, and set reminders for when to take them. And they alert you when it's time to get refills. Medisafe alerts caregivers if you miss a med. Both CareZone and Medisafe also let you store doctor and pharmacy contact info. Medisafe can check for drug interactions.

All of the apps we think are worth considering are HIPAA-compliant. That means that under the Health Insurance Portability and Accountability Act, your health information is protected by encryption and regular security updates. Still, read all privacy policies.

CareZone and Medisafe are iOS (iPhone and iPad) and Android compatible; Round Health is iOS compatible.

—Ginger Skinner

Continued on page 34 ➤

# Give Your Drugs a Checkup

*We dispatched 10 secret shoppers to 45 drugstores across the U.S. to see how good pharmacists are at spotting potentially dangerous interactions. We also wanted insight on how to talk about medication with a pharmacist or doctor.*

DRUG-SAFETY EXPERTS recommend throwing all of your pill bottles into a bag at least once a year and taking them to your doctor or pharmacist for a thorough drug checkup. That “brown-bag” review provides a chance to check for duplicate meds, excessive doses, and dangerous interactions, and for you to ask questions.

For insight on how easy it is to talk with pharmacists about your drugs, and to see how well they caught potentially dangerous interactions, we sent 10 secret shoppers to 45 pharmacies across the U.S. and had them ask about a list of drugs they were “taking.”

They included three prescription drugs (the blood-pressure medication hydrochlorothiazide, the blood thinner Coumadin, and the sleeping pill Ambien) and two OTC drugs (baby aspirin and Aleve PM, a combination pain pill and sleep aid).

Shoppers reported that in most cases (84 percent), pharmacists appropriately warned them about the risk of bleeding when taking Coumadin, Aleve PM, and aspirin together. Flagged less often was the potential for next-day drowsiness when combining Ambien and Aleve PM, or nighttime dizziness from the blood-pressure drug Ambien and Aleve PM.

Our shoppers also recorded observations about their experiences, noting that overall the pharmacists were helpful. Here are some tips from them, as well as some from pharmacists at leading drugstore chains:

**Make sure you talk with the pharmacist.** In half of their visits, shoppers first met a clerk or pharmacy technician at the counter, not a pharmacist.

**Schedule an appointment.** The pharmacists did a pretty good job of spot-checking problems when our shoppers just showed up at the counter. But experts say that for a full brown-bag review, you're better off reserving time with your pharmacist or doctor.

**Ask about insurance.** None of our shoppers had to pay for their walk-in visits, and CVS and

## National Check Your Meds Day

Consumer Reports, working with the Department of Health and Human Services, has proclaimed Oct. 21, 2017, “National Check Your Meds Day.” A number of pharmacies—Albertsons, Costco, CVS, Sam’s Club, Target, Walmart, and many independents—have agreed to support the effort. Some may even have extra staff on hand to help you review your meds. Ask your local pharmacy if it is participating. Good to know: Asking whether there are meds you can stop taking could result in at least one less prescription, according to CR’s recent nationally representative survey.

Target told us they also do free comprehensive reviews. Other pharmacies, and your doctor, may charge for full reviews, but most often it’s only your regular insurance co-pay. Medicare allows free yearly reviews with a doctor, and for many Medicare Part D patients taking multiple meds, a pharmacist, too.

**Be thorough.** Cover the basics for each medication or supplement, such as what it’s for, how long you should take it, what it costs, and any side effects and potential interactions. Also ask about nondrug options that might be safer, and whether you can switch to a lower dose.

## Do You Need a ‘Brown-Bag’ Review?

*Answer these six questions to see how important it is for you.*

**1. How many doctors prescribe your meds?** A drug review is a good idea even if you have just one physician. But the more you see, the greater the risk of miscommunication and duplicate drugs. So designate one—usually your primary care doctor—to oversee all of your meds.

**2. Do you also regularly take over-the-counter drugs or dietary supplements?** They can pose risks even though they don’t require a prescription. So make sure you tell your doctor about them, including pills, liquids, drops, and ointments.

**3. Do you take more than one drug to treat the same health problem,** such as two drugs to treat depression? That’s sometimes necessary to control your condition, but it can also be a red flag that you’re taking a drug you don’t need.

**4. Do you need a drug to control the side effects of another?** For example, do you take a laxative to ease constipation caused by an opioid? That, too, can be okay if it makes it possible for you to take a drug you require. But check to see whether you can ease side effects by lowering the dose, switching to another drug, or trying lifestyle changes instead.

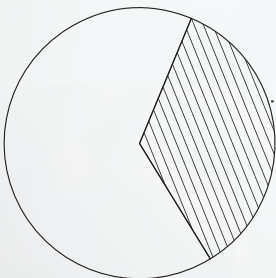
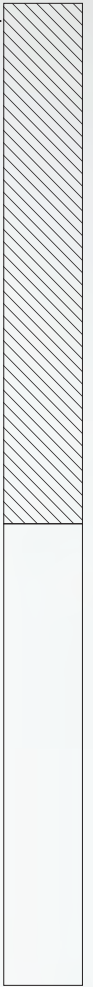
**5. Have you been taking your medication for more than three months?** Many conditions, such as diabetes and heart disease, can require drugs for a lifetime. But for some problems, people stay on drugs longer than necessary.

**6. Do you struggle to pay for your meds?** Our previous surveys have found that doctors often don’t consider the cost of drugs they prescribe. Don’t hesitate to ask about less expensive but equally effective alternatives, including generic versions.



53%

of those who take prescription drugs get them from more than one healthcare provider.



35%

of people taking prescription drugs say a healthcare provider has never reviewed their medicine to see if they can stop any.

## 12

Times to  
Try Lifestyle  
Changes  
Before Drugs

Americans often rush—or get rushed—into taking drugs too quickly. Sometimes doctors prescribe them for problems—back pain, heartburn, and insomnia, for example—without first giving lifestyle changes a chance. Or they diagnose the “predisease” stage of a condition—think mild bone loss or slightly elevated blood pressure or blood sugar levels—and immediately start treating people with drugs when simple steps are often enough. Here, 12 such situations.

## 1

## ADHD

**DRUGS:** Antipsychotics such as Abilify and Seroquel.

**RISKS:** Side effects include constipation, difficulty breathing or swallowing, dizziness, drowsiness, fast or irregular heartbeat, fever, seizures, and weight gain.

**NONDRUG OPTIONS:** Behavioral therapy plus educational interventions and exercise. (In some cases, a stimulant such as Adderall or Ritalin may also be necessary, but first consult with a specialist.)

**WHEN TO CONSIDER A DRUG:** Antipsychotics should be used for ADHD only if other psychiatric conditions are diagnosed, such as bipolar disorder.

## 2

## Back &amp; Joint Pain

**DRUGS:** Nonsteroidal anti-inflammatories such as Advil, Aleve, and Celebrex; opioids such as OxyContin and Percocet.

**RISKS:** High doses or long-term use of Advil and related drugs can cause bleeding in the intestines, kidney failure, heart attack, ulcers, and stroke. Opioids can trigger drowsiness, nausea, vomiting, constipation, addiction, and overdose.

**NONDRUG OPTIONS:** Try yoga, swimming, gentle stretches, tai chi, massage, physical therapy, acupuncture, or heat.

**WHEN TO CONSIDER A DRUG:** Anti-inflammatories are okay for short-term flare-ups, though even then stick with a low dose and don't take them for longer than 10 days without talking with your doctor. Opioids should be a last resort and prescribed at the lowest effective dose for the shortest time possible.

## 3

## Dementia

**DRUGS:** Antipsychotics such as Abilify and Seroquel.

**RISKS:** Generally the same as those listed for ADHD, as well as stroke and death.

**NONDRUG OPTIONS:** Establish a regular routine, do calming activities, and have frequent social contact. It's also a good idea to rule out underlying conditions that can sometimes lead to disturbed behavior, such as constipation, infection, or hearing or vision problems.

**WHEN TO CONSIDER A DRUG:** If the patient suffers from delusions, hallucinations, or other serious mental illness, or presents a danger to himself or others.

## 4

## Mild Depression

**DRUGS:** Antidepressants such as Celexa, Cymbalta, Lexapro, and Prozac.

**RISKS:** Many side effects, including diarrhea, drowsiness, headaches, agitation, sexual dysfunction, and suicidal thoughts.

**NONDRUG OPTIONS:** Exercise, meditation, and various forms of talk therapy.

**WHEN TO CONSIDER A DRUG:** If therapy alone isn't enough or depression is severe. Reassess after six weeks and consider switching drugs if you aren't getting better.

## 5

## Heartburn

**DRUGS:** Proton-pump inhibitors (PPIs) such as Nexium, Prevacid, and Prilosec.

**RISKS:** Reduced stomach acid, which impairs the body's ability to absorb certain nutrients and medication, and increases the

risk of gastrointestinal and other infections. Long-term use may increase the risk of fractures, dementia, heart attack, and kidney disease.

**NONDRUG OPTIONS:** Eat smaller meals, don't lie down soon after eating, lose excess weight, and avoid trigger foods, including acidic or greasy meals. For occasional heartburn, try OTC products such as Maalox, Pepcid AC, Tums, or Zantac 75.

**WHEN TO CONSIDER A DRUG:** If heartburn occurs twice weekly or more for four weeks or longer. In that case, consider a PPI for a few months while your esophagus heals.

## 6

### Insomnia

**DRUGS:** Sleeping pills such as Ambien, Belsomra, and Lunesta.

**RISKS:** Dizziness, next-day drowsiness, impaired driving, dependence, and worsened sleeplessness when you try to stop.

**NONDRUG OPTIONS:** Cognitive behavioral therapy (CBT) for insomnia, where a provider teaches you good sleep habits and suggests ways to change your behavior, such as cutting out naps or not using your laptop in bed.

**WHEN TO CONSIDER A DRUG:** If you have short-term sleep problems caused by a stressful event such as a death in the family or a divorce, or if CBT alone doesn't provide enough relief.

## 7

### Low Testosterone

**DRUGS:** Testosterone topicals (such as AndroGel and Axiron), patches (Androderm), and injections (Aveed).

**RISKS:** Blood clots in the legs, sleep apnea, an enlarged prostate, and possibly an increased risk of a heart attack or stroke. Topical forms can transfer to others, causing the growth of body hair in women and, if pregnant, transfer the hormone to their babies. Children exposed to the hormone have experienced enlargement of the penis or clitoris, the growth of pubic hair, an increased libido, and aggressive behavior.

**NONDRUG OPTIONS:** Treat conditions that can decrease testosterone, such as diabetes or obesity. Also discuss nondrug ways to boost energy and vitality by exercising, getting enough sleep, and couples therapy with your partner.

**WHEN TO CONSIDER A DRUG:** If you have hypogonadism, which is very low testosterone levels caused by a genetic disorder; damage to the testicles from injury or chemotherapy; or another cause.

## 8

### Osteopenia

*preosteoporosis, or bone density at the low end of normal*

**DRUGS:** Bisphosphonates such as Actonel, Boniva, and Fosamax.

**RISKS:** Diarrhea, nausea, vomiting, heartburn, esophageal irritation, and bone, joint, or muscle pain. Long-term use may increase the risk of thigh fractures.

**NONDRUG OPTIONS:** Consume foods high in calcium and vitamin D, do weight-bearing exercises such as walking or

lifting weights, and quit smoking. Plus take steps to prevent falls by, for example, avoiding sleeping pills and installing grab bars in the bathroom.

**WHEN TO CONSIDER A DRUG:** If bone-density tests show you have full-blown osteoporosis. Even then, consider taking a break after five years to reduce the risk of lasting side effects.

## 9

### Overactive Bladder

*the sudden or frequent need to urinate*

**DRUGS:** Anticholinergics such as Detrol and Oxytrol.

**RISKS:** Constipation, blurred vision, dizziness, confusion, and an increased risk of dementia.

**NONDRUG OPTIONS:** Cut back on caffeine and alcohol, and try bladder training (slowly increasing the time between bathroom visits) and Kegel exercises (repeatedly tightening and relaxing the muscles that stop urine flow).

**WHEN TO CONSIDER A DRUG:** If several weeks of nondrug strategies don't provide enough relief.

## 10

### Prediabetes

*blood sugar levels at the high end of normal*

**DRUGS:** Blood-glucose-lowering drugs such as Actos and Glucophage.

**RISKS:** Dizziness, tiredness, muscle pain, and in rare cases other symptoms caused by a dangerous buildup of lactic acid and a vitamin B12 deficiency.

**NONDRUG OPTIONS:** Exercise, eat a healthy diet rich in nonprocessed and nonstarchy foods, and lose weight.

**WHEN TO CONSIDER A DRUG:** If you develop full-blown type 2 diabetes.

## 11

### Prehypertension

*blood pressure at the high end of normal*

**DRUGS:** ACE inhibitors, angiotensin receptor blockers (ARBs), calcium channel blockers, and diuretics.

**RISKS:** Diuretics can cause frequent urination, low potassium levels, and erectile dysfunction. ACE inhibitors and ARBs can cause high potassium levels and reduced kidney function. Calcium channel blockers can cause dizziness, an abnormal heartbeat, flushing, headache, swollen gums, and, less often, breathing problems.

**NONDRUG OPTIONS:** Quit smoking, cut back on sodium and alcohol, lose excess weight, and exercise.

**WHEN TO CONSIDER A DRUG:** If you develop true hypertension.

## 12

### Obesity

**DRUGS:** The weight-loss drugs Belviq, Contrave, Qsymia, and Xenical.

**RISKS:** Constipation, diarrhea, nausea, or vomiting are common. The drugs also carry rare but dangerous side effects, including leaky heart valves with Belviq and liver damage with Xenical.

**NONDRUG OPTIONS:** If you've been unable to lose weight on your own by exercising more and eating less, ask your doctor about formal weight-loss programs.

**WHEN TO CONSIDER A DRUG:** If lifestyle changes have failed and you are obese or overweight and have heart disease or type 2 diabetes. If you haven't lost at least 5 percent of your weight after three months, stop because it's unlikely to help.

Continued from page 29

is used for appropriate purposes.

So why would Goehring's doctor put him on a medication that may not have been indicated for his condition? For one thing, doctors can prescribe drugs for such off-label uses, even if the FDA hasn't reviewed the evidence and approved the drug for those purposes, explains Stephanie Cacomo, a spokeswoman for the agency.

For another, about the time Goehring started on testosterone, pharmaceutical companies began investing heavily in ads for the drugs and even came up with a catchy new name: "low T." Spending on the ads rose quickly, to \$153 million in 2013. And companies got a lot of bang for their advertising buck. A March 2017 study in JAMA found that between 2009 and 2013, men exposed to more TV ads for testosterone or "low T" were much more likely to wind up on the drug.

Those "low-T" figures are a drop in the bucket. Total spending on drug ads targeting consumers reached \$6.4 billion last year, 64 percent more than in 2012, according to Kantar Media, a market research company. That's \$1.3 billion more than the FDA's entire 2017 budget. Drug companies spend even more—\$24 billion in 2012 alone—on marketing just to doctors through ads in medical journals, face-to-face sales, free medication samples, and educational and promotional meetings, according to a report from the Pew Charitable Trusts.

Building relationships with healthcare providers and marketing medicines is valuable, says Powaleny, the spokesman for PhRMA, helping to

49%

of people who regularly take prescription medication asked their prescribers whether they could stop taking a drug.

71%

of them successfully eliminated at least one drug.

ensure "that healthcare professionals have the latest, most accurate science-based information available regarding prescription medicines."

But many drug-safety experts worry that the practice also contributes to overmedication.

"Low T is a marketing term intended to sell testosterone as a kind of fountain of youth," says Steven Woloshin, M.D., a professor at the Dartmouth Institute of Health Policy and Clinical Practice. For most men, he says, testosterone "declines naturally with age," and research shows that taking drugs to compensate has "little or no benefit" and "some serious risks."

That's something Goehring wishes he had understood better. His stroke, he says, still impairs his short-term memory and has left one of his hands partially numb, forcing him to close his deli. Now, eight years later, he's still trying to pay off hospital bills not covered by insurance.

## The Rise of 'Predisease' Diagnoses

Two years ago, Diane McKenzie's doctor recommended metformin (Glucophage) to treat a blood sugar level that put her at the high end of normal but still below the cutoff for diabetes. Concerned about developing the full-blown disease, McKenzie, then 44, agreed to take it. But almost immediately, she began to suffer from diarrhea and vomiting, known side effects.

Her experience illustrates another trend that's

Continued on page 36 ➤

## CASE 2

## Staying on a Drug Too Long



**Jeana Loureiro, 33**  
Phoenix

**What she took:** Prescription omeprazole (Prilosec) for heartburn.

**Why she wanted to cut back:** Prilosec, which belongs to a class of drugs called proton-pump inhibitors (PPIs), did help Loureiro's heartburn. But over time she noticed that missing a dose triggered explosive chest pain. "It felt like a heart attack," she says. Loureiro later learned that after just a few

weeks on a PPI, missing a dose can cause the stomach to overproduce acid, triggering rebound symptoms that can include chest pain and nausea. Other research suggests that the drugs can increase the risk of C. difficile, a hard-to-treat gastrointestinal infection.

**How she cut back:** Twelve years after she started taking the drug, Jeana says she began a carefully

calibrated program to slowly increase the time between doses until she eliminated it entirely, an approach that eases rebound symptoms. She says that eating a healthier diet helped her manage her heartburn without the PPIs. "Now that I'm off the medication," Loureiro says, "I know my trigger foods and choose not to include them in my diet."

# What Older Adults Must Know About Rx Risks

*Lower doses and fewer drugs help prevent problems.*



WHEN IT COMES to risks from prescription drugs, seniors face triple jeopardy. They're more likely to take multiple meds and more susceptible to side effects due to physical changes that accompany aging. And they're at a higher risk of drug interactions, partly because they tend to take more meds. In Consumer Reports' recent survey, for example, 40 percent of people ages 65 and older took five drugs or more, compared with just 17 percent of those ages 45 to 55.

Compounding the problem is that older people are less likely than younger ones to ask a doctor about drug safety. Barely half of the seniors in our survey said they talked with their doctor about such concerns as drug side effects, but two-thirds of younger adults did.

It's not surprising, then, that older adults are twice as likely to suffer a side effect serious enough to require a trip to an ER, and seven times more likely to be hospitalized as a result, according to the Centers for Disease Control and Prevention. To reduce those risks, ask your physicians these questions:

## Is this drug safe for someone my age?

The American Geriatrics Society has identified dozens of medications that people 65 and older should almost always avoid because of the risk of serious side effects. They include the anti-anxiety drugs diazepam (Valium) and alprazolam (Xanax), and sleep drugs such as zolpidem (Ambien) and eszopiclone

(Lunesta). For a complete list, go to <https://dcri.org/beers-criteria-medication-list/>.

## Will a lower dose work just as well?

Because older people are more susceptible to medication, a lower dose may be as effective and pose less risk. For example, a study of more than 200,000 patients ages 70 and older on levothyroxine (Synthroid) to treat an underactive thyroid found that those taking lower doses were two to three times less likely to suffer a fracture, one of the drug's known risks. And our experts say a lower dose of the drug can work just as well for older patients.

## Do I need to treat the problem so aggressively?

In some cases, it can make sense to treat conditions less aggressively as you age.

For example, high doses of diabetes medication can make blood sugar levels drop dangerously low in older people. One study found that certain diabetes drugs were responsible for 23 percent of emergency hospitalizations for seniors.

Recognizing that problem, guidelines from the American Geriatrics Society and the American Diabetes Association now say that otherwise healthy older adults with diabetes should talk with their doctor about aiming for an HbA1c (a measure of long-term blood sugar levels) of 7.5 rather than 7, which is the goal for other adults.

Similarly, new guidelines

from the American College of Physicians say that low-risk people older than 60 should consider treating high blood pressure only if their systolic, or upper, reading is over 150, rather than 140—the traditional cutoff.

Even then, our experts say, if blood pressure is only moderately elevated (between 150 and 160), try several months of diet and lifestyle changes before resorting to medication.

## Is this prescription still necessary?

Sometimes the potential benefit of a drug declines with age.

For example, there's little evidence that cholesterol-lowering statins reduce the risk of heart problems in most people older than 70, and even less that they benefit people in their mid-80s and older. That makes the risks of the drugs, which include muscle pain and possibly cognitive decline, of greater concern. For those reasons, the American College of Cardiology encourages older people to discuss with their doctor the limited benefits and potential risks of statins.

It makes sense to have an honest discussion with your doctor about how your age and overall health affect your need for specific medication, says Michael Hochman, M.D., of the Keck School of Medicine at the University of Southern California. "When someone's life expectancy is less than 10 years," he notes, "we should re-evaluate whether a medication's benefits outweigh the potential downsides on quality of life."

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putting more people on drugs: diagnosing them in the “predisease” stage of a condition. For example, identifying people with mild bone loss (osteopenia, or preosteoporosis), slightly elevated blood pressure (prehypertension) or, as in McKenzie’s case, prediabetes, a slightly elevated—but still normal—blood glucose reading.

Catching disease early, of course, can be a good thing if it helps you address a problem before it leads to serious harm.

But “lowering the bar for what’s considered normal” can also get people on drugs before they need to be, says Allen Frances, M.D., a professor emeritus at Duke University who studies how the medical profession sometimes expands the definition of diseases. And treating people with drugs at the very early stage of a condition “often harms more people than it helps,” Frances says.

That’s what McKenzie, a nurse practitioner, says she worried about when she began experiencing side effects. After a few months, they were so intolerable she stopped taking metformin.

Research actually supports that approach. A 2015 study in *Lancet Diabetes & Endocrinology* found that for people with prediabetes, regular exercise plus a low-calorie, low-fat diet cut the incidence of developing type 2 diabetes by 27 percent; metformin lowered it by 18 percent. And the side effects of exercise and a healthy diet are other health benefits, not diarrhea and vomiting.

McKenzie decided to make lifestyle changes to lower her blood sugar. Key to her success, she believes, is the stray puppy she adopted, who motivated her to take long, daily walks, helping her lose 70 pounds. Today McKenzie’s blood sugar levels are under control.

## Doctors Who Know When to Say No

Ranit Mishori, M.D., a professor of family medicine at the George Washington University School of Medicine in Washington, D.C., made it her New Year’s resolution this year to prescribe fewer drugs.

She’s part of a trend called “de-prescribing,” or focusing on keeping patients healthy by getting

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## When Drugs Don’t Mix

TAKING A COCKTAIL of different drugs increases the risk of an adverse reaction. Sometimes pill interactions magnify a drug’s potency, sometimes they diminish another’s effectiveness,

and sometimes the combination can result in dangerous side effects. Below are some common—and serious—interactions. So if you take multiple medications, including over-the-counter ones and dietary supplements, regularly ask your doctor or pharmacist to check for potentially dangerous combinations.

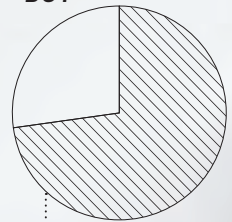
Don’t Mix These ...	... With Any of These	Possible Risks That Can Result
<b>Warfarin</b> , used to treat or prevent blood clotting	<b>Antidepressants</b> , like duloxetine (Cymbalta) and fluoxetine (Prozac), and pain relievers like <b>aspirin</b> , <b>ibuprofen</b> (Advil), and <b>naproxen</b> (Aleve)	<b>Bleeding</b>
<b>Theophylline</b> , used to treat asthma, chronic obstructive pulmonary disease, and other respiratory diseases	<b>Cimetidine</b> , used to treat stomach ulcers and acid reflux	<b>Seizures</b>
<b>Lithium</b> , used to treat bipolar disorder	<b>Loop Diuretics</b> or <b>ACE Inhibitors</b> , both used to treat high blood pressure and heart failure	<b>Tremors, slurred speech, seizures, and heart palpitations</b>
<b>Prednisone</b> , used to treat skin diseases, rheumatoid arthritis, and chronic obstructive pulmonary disease	Certain pain relievers, such as <b>celecoxib</b> (Celebrex), <b>ibuprofen</b> (Advil), and <b>naproxen</b> (Aleve)	<b>Bleeding stomach ulcers</b>
<b>ACE Inhibitors</b> (lisinopril, quinapril), used to treat high blood pressure and heart failure	<b>Amiloride</b> or <b>Triamterene</b> , both used to treat high blood pressure and heart failure	<b>High levels of potassium in the blood, which can be deadly</b>

About

**10%**

of people who regularly take a prescription drug—some 11 million Americans—have had an adverse reaction bad enough to send them to an ER.

**BUT**



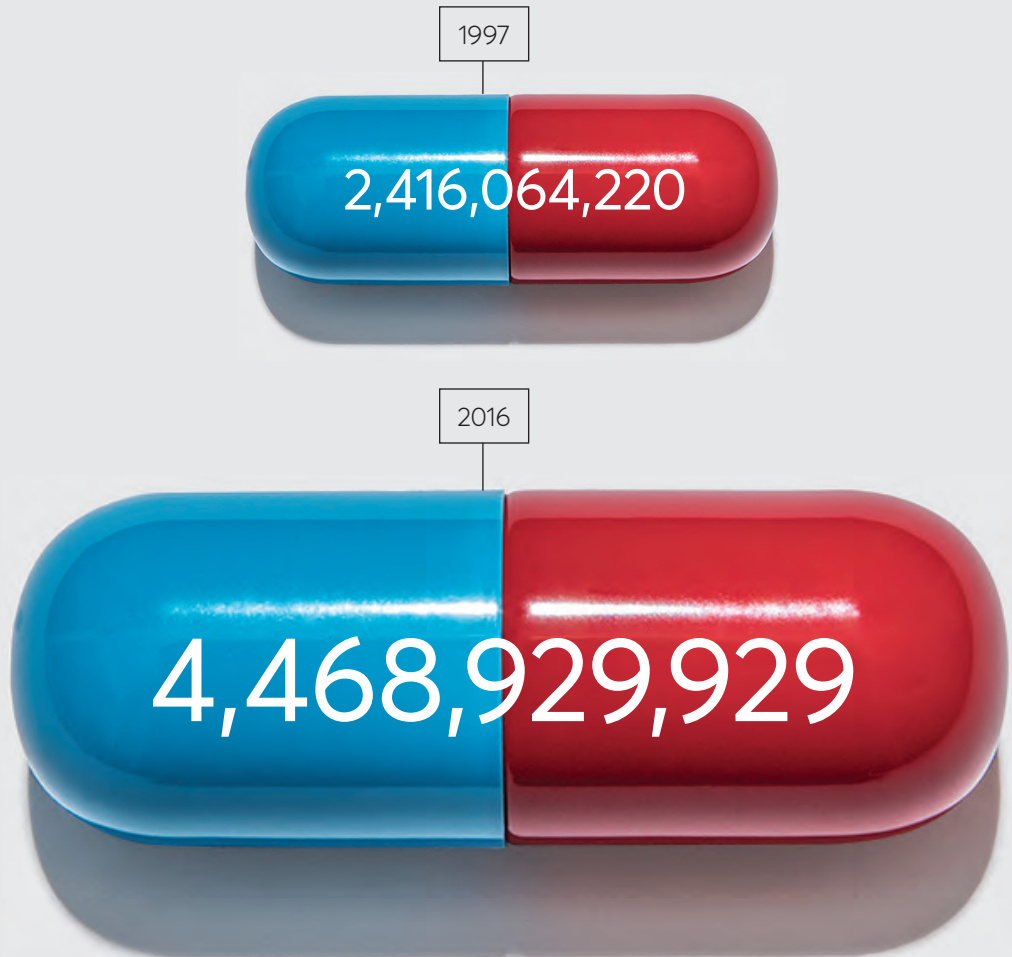
**73%**

say they're not concerned about drug side effects.

# Pill Nation:

## The Rise of Rx Drug Use

*The total number of prescriptions filled by all Americans, including adults and children, has increased by 85 percent over two decades, while the total U.S. population has increased by only 21 percent.*



## How to Stop Taking Your Medication—Safely

WHETHER YOU PLAN to stop taking a drug or just lower the dose, Consumer Reports' medical director, Orly Avitzur, M.D., advises that for your safety, you should talk with your doctor about how to wean yourself. That's because abruptly quitting drugs can often trigger serious problems. For example, stopping many antidepressants, anti-anxiety drugs, heartburn meds, and sleeping pills can worsen the symptoms the medication was meant to treat.

And if you've been taking opioids such as OxyContin, Percocet, or Vicodin for more than a couple of weeks,

going cold turkey can trigger withdrawal symptoms including anxiety, muscle aches, nausea, vomiting, diarrhea, and sleeplessness.

When making a plan to stop, here are some steps to take:

- ▶ Come up with a clear timeline for reducing your dose.
- ▶ Schedule follow-up appointments to monitor your progress.
- ▶ Ask about temporary effects you can expect that aren't cause for concern—and serious ones that you should be alert to and that warrant a call to your doctor.
- ▶ Discuss nondrug options

you can try. For example, adding 30 minutes of physical activity daily may help control your blood pressure, or trying acupuncture, massage, spinal manipulation, cognitive behavior therapy, or yoga may help manage pain.

And last, don't become discouraged if you need to modify your plan, Avitzur says.

"There's no one-size-fits-all approach to stopping a drug," she explains. "You may need to slow your taper or even pause it for a while. It may take some trial and error to find what works best for you."

PHOTO: FREDRIK BRODEN

### CASE 3

## When a Drug Causes More Problems Than It Relieves



**Deana Michaels, 41**  
Fulton, N.Y.

**What she took:** Oxybutynin for an overactive bladder and sertraline (Zoloft) for anxiety.

**Why she wanted to cut back:** The drug for her overactive bladder gave her headaches, extreme dry mouth, and fatigue. Though the medication did cut down on a few bathroom trips, it wasn't enough to outweigh the side effects, most of which her doctor never

told her about, she says. Research shows that the drug is only moderately effective; most people, like Michaels, stop taking it after about 6 months. And with Zoloft, she says, "I put on 40 pounds and felt uneasy taking it long term. I wanted off."

**How she did it:** After five months on oxybutynin, she opted for lifestyle changes, including drinking less caffeine and

doing Kegel exercises to strengthen her bladder muscles. After she insisted that she also wanted to stop Zoloft, Michaels' doctor advised weaning off the medication. Today, meditation and learning to communicate her emotions better have gone a long way to minimize her anxiety, she says.

Continued from page 36

them off unnecessary drugs. "In med school we're taught how to prescribe, not how to take people off drugs," she says.

Another doctor who de-prescribes is Victoria Sweet, M.D., who spent 20 years at a charity hospital in San Francisco with few high-tech resources but lots of time for patients. "There's a big push in our country to practice medicine as if we are fixing machines with a broken part," says Sweet, author of a forthcoming book, "Slow Medicine: The Way to Heal." "Take the pill, fix the symptom, move on," she says. "Slow medicine" means "taking time to get to the bottom of what's making people sick—including medications in some cases—and giving the body a chance to heal."

Some groups are trying to help that approach go mainstream. Through the Choosing Wisely initiative (Consumer Reports is a partner), more than two dozen medical organizations have made recommendations that involve dialing back the use of unneeded drugs.

And some medical organizations, such as the American College of Physicians, now advise doctors to try nondrug approaches first for certain conditions. For example, the ACP recommends usually treating back pain first with massage, spinal manipulation, or other nondrug options.

But for the system to change, insurance needs to evolve, too, says Cynthia Smith, M.D., vice president of clinical programs at the ACP. "A patient's out-of-pocket costs are currently significantly less with medical therapy" than with nondrug options, she

**43%**  
of people who regularly take prescription medication said their pharmacist hadn't told them about a drug's possible side effects and interactions with other medication.

notes. "We need to make it easier for both doctors and patients to do the right thing."

### Kicking the Drug Habit

Talking with your doctor about whether you might feel better on fewer pills is well worth the effort. Half the people in our survey who take medication said they had talked with a doctor about stopping a drug, and more than 70 percent said it worked. When extrapolated to all U.S. adults, we calculate that comes to nearly 45 million fewer prescriptions. Here are tips on how to cut back on unneeded meds:

- Don't cut back or stop taking a drug without first discussing it with your doctor. See "How to Stop Taking Your Medication—Safely," on the facing page.
  - Have a comprehensive drug review with your doctor or pharmacist at least once per year. See "Give Your Drugs a Checkup," on page 30.
  - Give a family member and all of your healthcare providers a current list of your drugs. See "How to Take More Control of Your Meds," on page 29.
  - Consider nondrug options first for many common health problems. See "12 Times to Try Lifestyle Changes Before Drugs," on page 32.
- Additional reporting by Rachel Rabkin Peachman and Ginger Skinner.

**EDITOR'S NOTE:** This special report and supporting materials were made possible by a grant from the state Attorney General Consumer and Prescriber Education Grant Program, which is funded by a multistate settlement of consumer fraud claims regarding the marketing of the prescription drug Neurontin (gabapentin).

# When to Get the Best Deals

We can tell you the best—and worst—times to buy a new refrigerator, dishwasher, range, or television, thanks to our new pricing analysis, so you won't be at the mercy of splashy sales promotions.





#### Deep Discounts

The average price of a TV dips to its lowest point all year around Black Friday.

**YOU DON'T NEED** to be a data scientist to know that holiday sales are great opportunities for bargain shoppers—but to understand precisely when you can snag the best deals, a little bit of big data goes a long way.

That's why Consumer Reports teamed up with Gap Intelligence, a market research company that specializes in pricing information, to study a year's worth of product prices from key retailers. We examined four big-ticket product categories—ranges, dishwashers, refrigerators, and televisions—to help you navigate the sales between Labor Day and the end of the holiday season.

The steep discounts that occur around Black Friday demonstrate the magnitude of price fluctuation that exists during the course of a year. By November, the average price of a refrigerator, for instance, dropped almost \$250 off the peak pricing we found in May. For the average price of a range, we found a \$178 differential—or a 14 percent discount—between the high point in February and the low point in November. Sometimes the big-picture data can hide some counterintuitive buying advice. Average TV prices peak as new products launch starting at the end of February, but that's also one of the best times to get a great deal on the previous year's hot sets.

Things got particularly interesting

when we zoomed in on several high-performing models from our ratings. We found significant price fluctuation on certain models; others—especially at extreme low and high prices—barely budged.

So how can past pricing inform your purchasing decisions this fall? If you're in the market for one of these products now (as in, your fridge is on the fritz), the data show that keeping an eye on a model's price over a matter of weeks could save you hundreds of dollars.

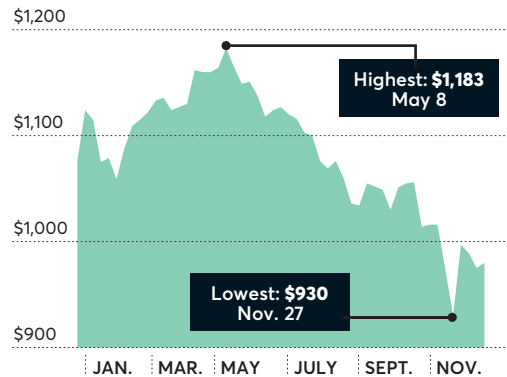
In terms of 2017 sales events, Gap expects to see similar trends, especially when it comes to Black Friday. "That promotional period continues to get longer and longer," says Christine Edwards, Gap's senior market analyst for home appliances. On Black Friday, entry-level appliances might see a dramatic dip as retailers advertise these offers to entice people through the door. But if you're shopping for a midlevel or premium appliance, there's no need to wait until the day after Thanksgiving. "The retail industry is now referring to November as 'Black November,'" explains Debra Mednick, CR's director of market trends and analysis. As 2016's data confirm, if you're after a new kitchen suite or television—and you can hold off—it pays to wait out Labor Day sales and shop come November.

# TVs

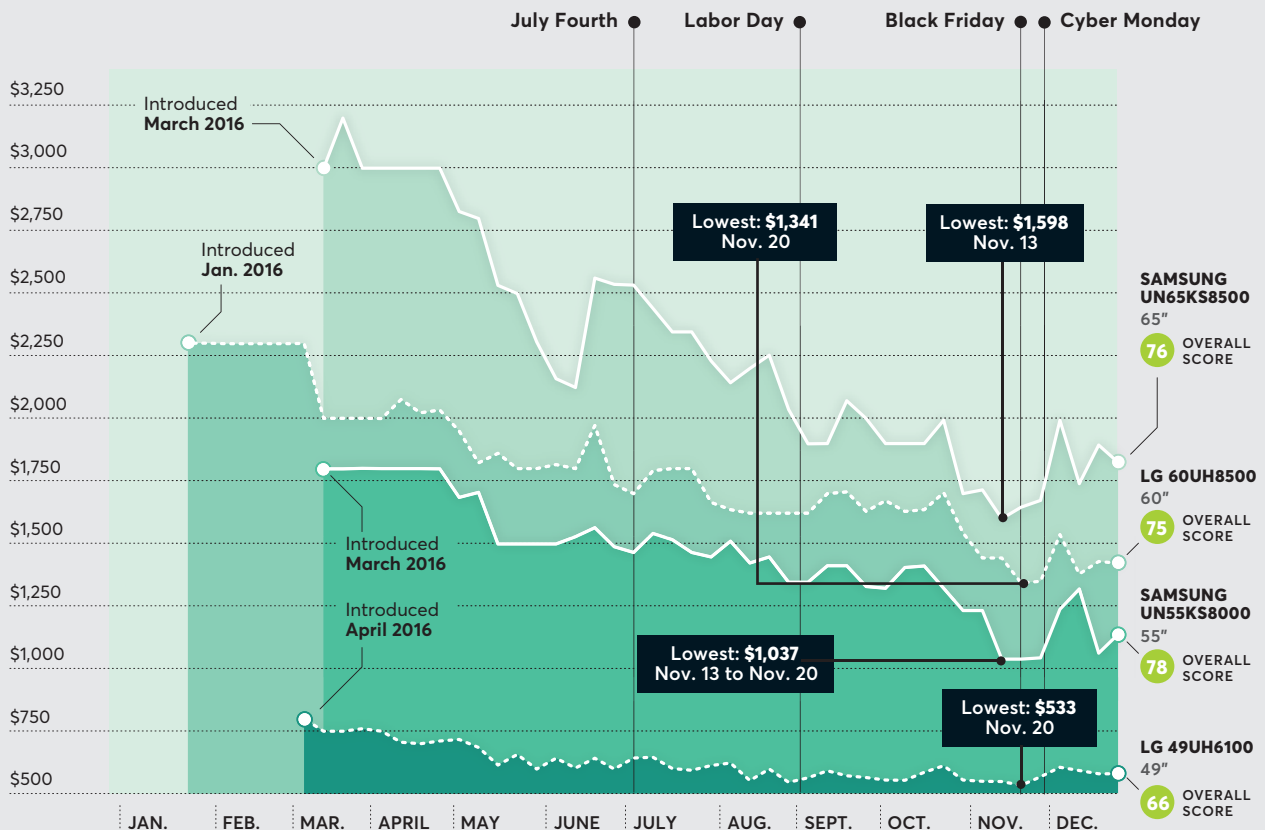
"MOST TV models are replaced or refreshed every year, and their pricing tends to follow a fairly consistent 12-month curve," says Deirdre Kennedy, senior analyst for TVs at Gap Intelligence. Our examination of the average price of a TV, as well as our study of four recommended 2016 models, shows that after new television models were introduced from early March to late May, prices began an immediate and steady decline. When Black Friday promotions

began in November, prices dove across the board. We found many sets selling for as little as 50 percent of their original retail price. Our analysis found another window for snagging a great deal starting a few weeks before the Super Bowl and running through March. During that time, average TV prices rose as new models entered the market, but prices on the preceding year's TVs hit their low point as retailers worked to clear out old inventory and create shelf space for new arrivals.

AVERAGE PRICE OF A TELEVISION IN 2016



## Average Price of Select Highly Rated Models in 2016



**THE DATA** To calculate the average price in each product category, we teamed up with Gap Intelligence, a

market-data company that tracks pricing and promotional activity for in-store and online products selling in key

national, regional, and online-exclusive retailers on a weekly basis. For each category, we excluded extreme

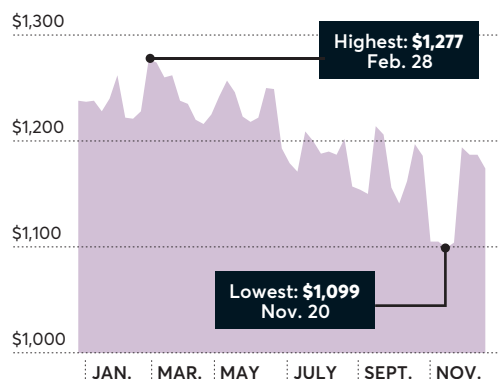
outliers, eliminating TVs costing more than \$8,000 and ranges and refrigerators more than \$10,000.

# Ranges

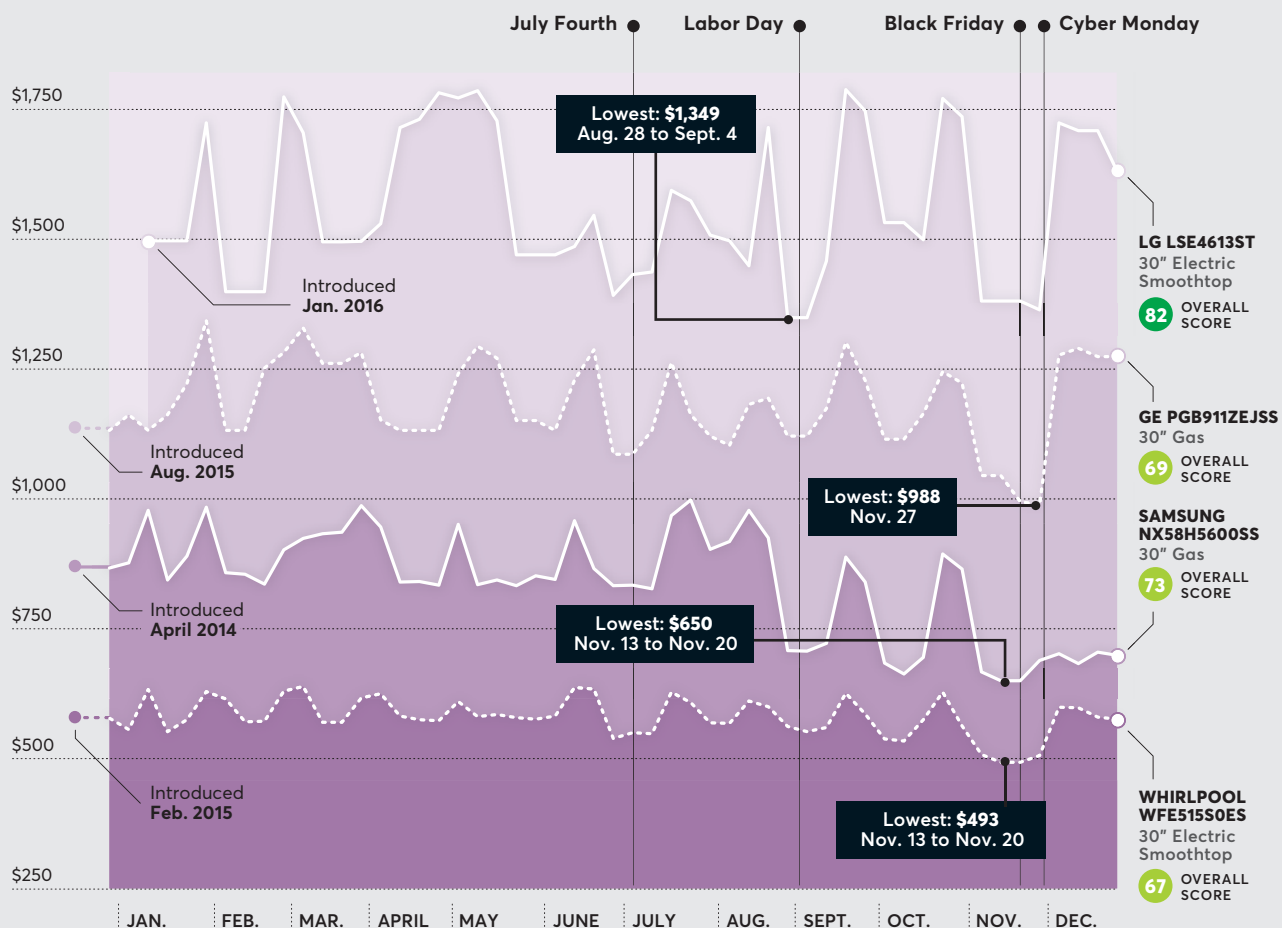
WE STUDIED 12 months of pricing data for roughly 1,500 ranges, and we tracked four high-performing models from CR's ratings during that same time. New models, released early in the year, kept the average price of a range high through the spring, but that figure dipped lower with each holiday after July Fourth. The individual ranges we looked at exhibited mostly parallel pricing patterns, from an entry-level Whirlpool electric to higher-end GE gas and LG electric models, which

sell for more than twice as much. And though prices generally ebbed and flowed according to the same promotions, the discounts were deeper for higher-priced models (the GE saw a variance of \$350, as opposed to the Whirlpool's \$100 spread). With pro-style ranges, such as a \$6,400 Wolf in our ratings, we found that prices were relatively consistent all year. "Rather than discounting those products, premium brands offer free installation or some other incentive," Edwards says.

AVERAGE PRICE OF A RANGE IN 2016



## Average Price of Select Highly Rated Models in 2016

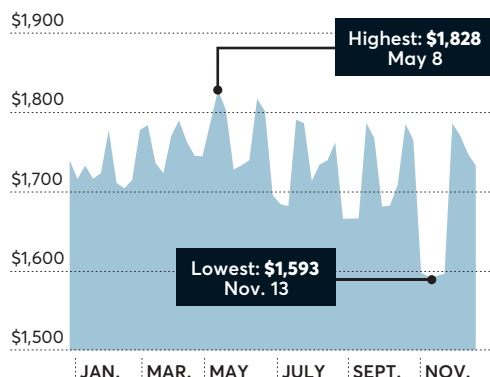


# Refrigerators

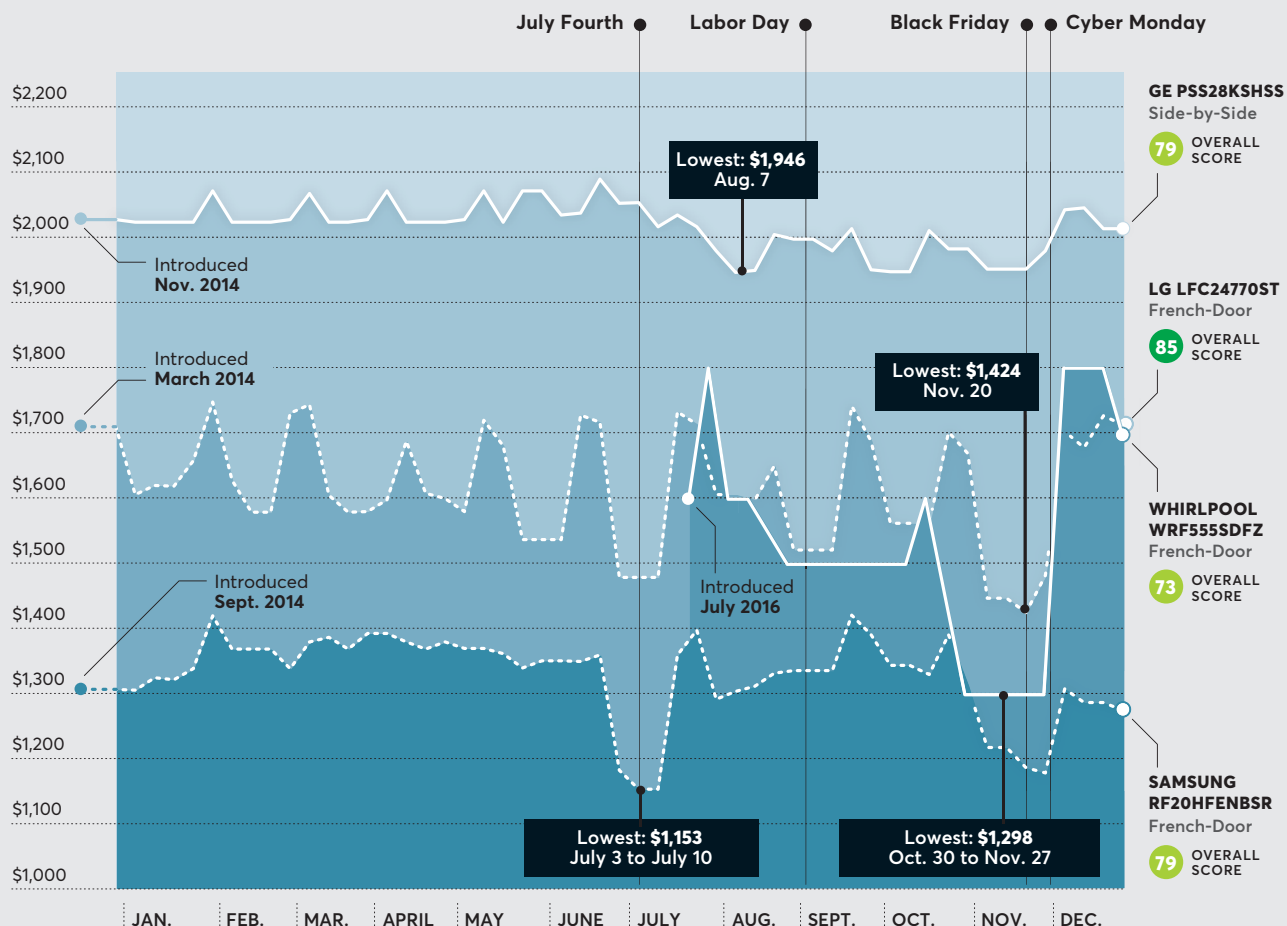
OUR ANALYSIS of the refrigerator category found it to be far more volatile than other home appliances. That means plenty of opportunity for an attentive shopper to save money. It's also a highly diverse category, with a wide variety of models within several subcategories, including French-door, side-by-side, and top-freezer. But a closer look at high-performing fridges from our ratings did reveal a few takeaways: First, we found the deepest discounts on midrange models. Whirlpool's

French-door, released in July 2016, was discounted \$500 by November. And as the price grew, discounts got smaller, as evidenced by our top-scoring GE side-by-side, which moved less than \$140 throughout 2016. On average, the best prices for refrigerators came on Black Friday, but we found a few deals that were even better on July Fourth. Last year that was when the Samsung French-door model we analyzed dipped by \$266 and the LG French-door came within \$50 of its Black Friday low.

AVERAGE PRICE OF A REFRIGERATOR IN 2016



## Average Price of Select Highly Rated Models in 2016

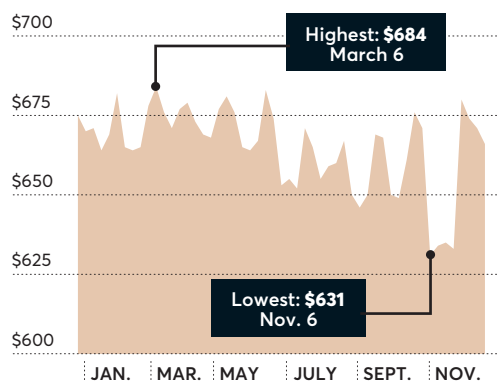


# Dishwashers

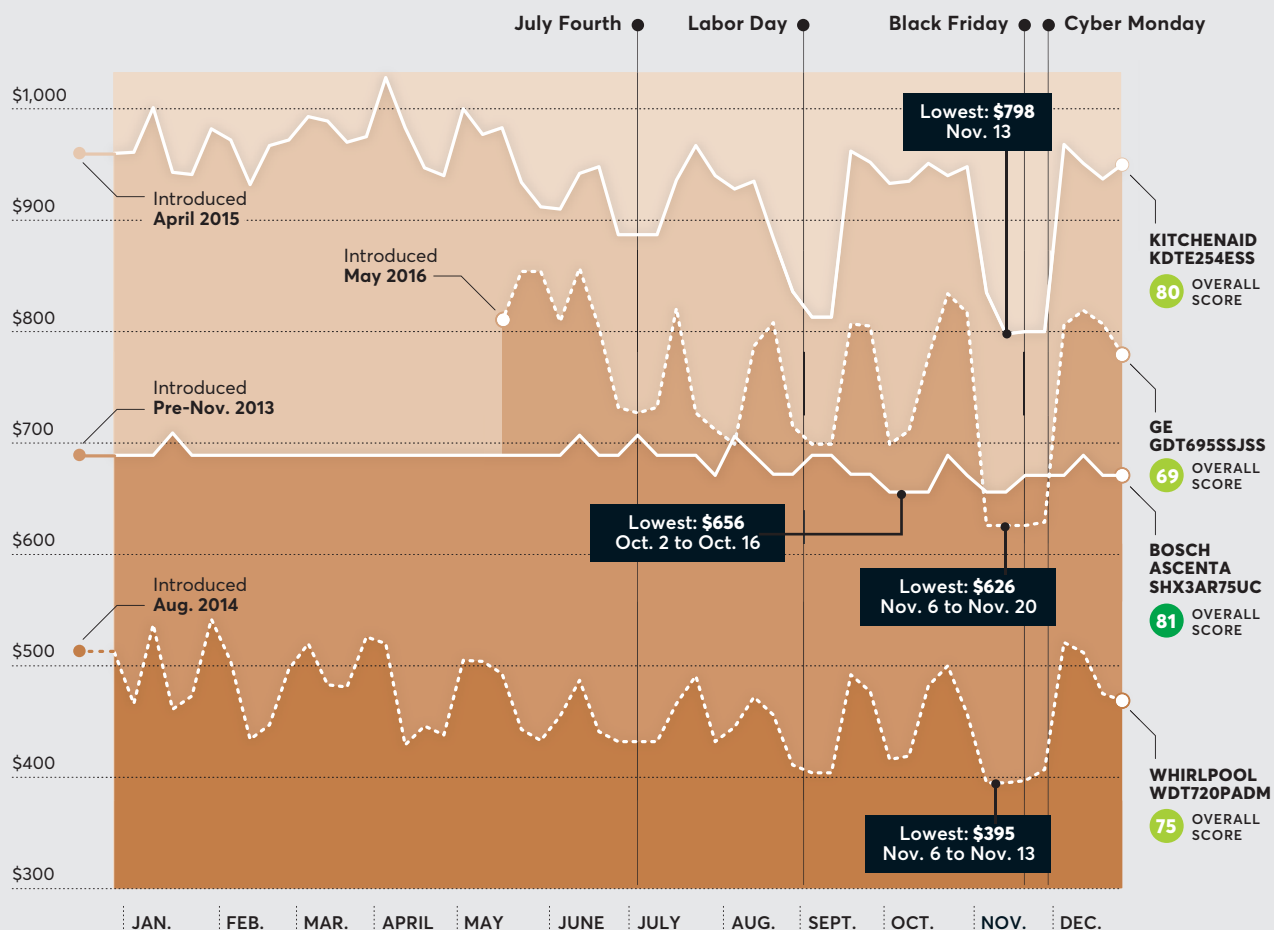
MANUFACTURERS turn out countless configurations of refrigerators, but a dishwasher is more or less a dishwasher. "So, similar to cooking ranges, you're not going to see a whole lot of fluctuation between brands, as far as how they're pricing and promoting," Edwards explains. Indeed, much like ranges, we found the average price of a dishwasher over one year steadily dipped lower and lower as Black Friday approached. And the models we plucked from

our ratings, with one exception, experienced almost simultaneous markdowns as retailers put their inventory on sale for holiday shopping events. The anomaly? The stainless steel Bosch Ascenta, which we recommend as a CR Best Buy. The data show that Bosch seems to discount far less often than its competitors. When we asked Bosch about its pricing strategy, the company's spokesperson pointed us to mail-in rebates available on its website.

AVERAGE PRICE OF A DISHWASHER IN 2016



## Average Price of Select Highly Rated Models in 2016



# How to Cash In on Cash-Back Credit Cards

Using a cash-back credit card is smart, but using two can really ramp up your savings. We've found the combos that can save you hundreds of dollars per year, tailored to what you spend on most.

by Amanda Walker



**BEFORE YOU THROW AWAY** any more of the credit card offers landing in your mailbox, take note: You might be overdue for a credit card makeover. Adding a new card or two to your wallet can reward you for your spending or win you valuable new benefits (such as cell-phone insurance), yet 20 million consumers have never changed their preferred credit card and an additional

25 million have held on to their favorite card for at least 10 years, according to a 2016 CreditCards.com survey.

Among the most popular rewards is cash back for purchases. About half of all credit cards that offer rewards now offer cash back, up from around 25 percent in 2013. “Some of the cash-back credit card programs being offered today are the most lucrative

we’ve ever seen,” says Marc Bellanger, senior strategy director with Merkle, a marketing agency that works in the credit card and banking industry. (For non-cash-back cards with generous rewards, see “Six Cards With Other Benefits Worth Considering,” on page 51.)

Unlike cards that compensate you with points or miles that can be



redeemed only for merchandise or travel, cash-back credit cards refund a percentage (typically 1 to 2 percent, but up to 6 percent) of your charges, usually in the form of a statement credit, a check, or a deposit into your bank account.

The way they work is simple, but finding the card that's right for you may not be. Some cards reward a flat

rate back on all of your purchases; others give you a modest percent back on some categories of purchases and a higher percent back on others, such as gas or groceries. Sometimes the amount you'll get back changes each quarter. And some cards offer big bonuses if you spend a certain amount within the first few months. In terms of costs, there are cash-back

cards that charge an annual fee and others that require you to maintain another account at a particular financial institution, so you also have to consider those possible costs.

All of that research can be labor-intensive. To help make finding a more rewarding card less daunting, we've

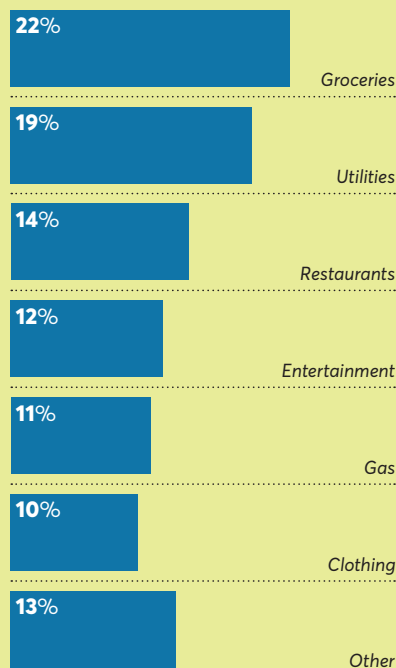
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# How to Stack the Cards in Your Favor

To find a credit card pair that maximizes your cash-back rewards, pick the spending pattern that most resembles your own.

## Large Family

Typical Monthly Charges  
\$3,500



### Top Card Combo



American Express  
Blue Cash Preferred



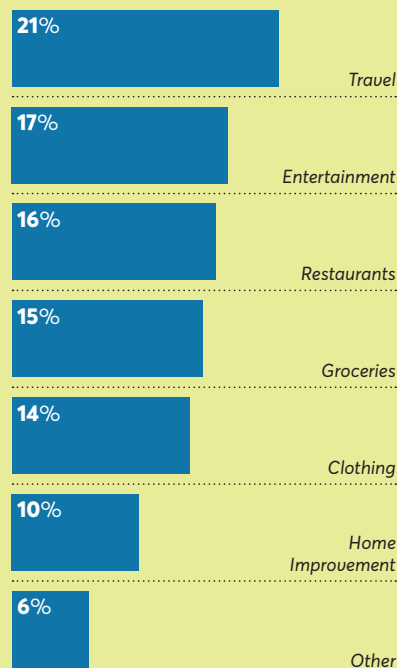
Citi Double  
Cash Card

**Cash Back Over Three Years**  
\$3,150

**Spending strategy:** Put your supermarket spending on the Blue Cash Preferred card to earn 6 percent cash back (up to \$6,000 annually); gas and department store charges earn 3 percent. All other charges, including your grocery spending after you hit that \$6,000 cap, should go on your Citi Double Cash Card to earn 2 percent back: 1 percent when you purchase items and 1 percent when you pay your bill.

## High-Income Family

Typical Monthly Charges  
\$6,000



### Top Card Combo



Citi Costco  
Anywhere Visa



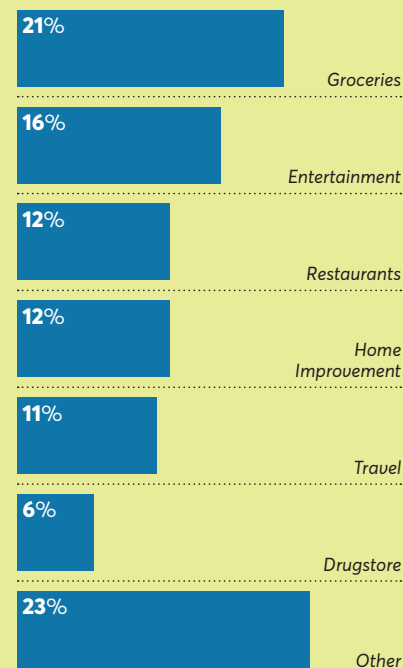
Discover It  
Miles

**Cash Back Over Three Years**  
\$4,940

**Spending strategy:** The first \$7,000 of your gas purchases each year should go on the Citi Costco Anywhere card to earn 4 percent cash back. Also use the card to earn 3 percent on restaurant and travel charges. Purchases at Costco or Costco.com will earn 2 percent. Other spending should go on the Discover It Miles card to earn 1.5 miles (or 1.5 cents) per dollar spent, plus a generous first-year bonus: The card program doubles the number of miles you earn on the card during the first year you have it.

## Retired Couple

Typical Monthly Charges  
\$2,000



### Top Card Combo



American Express  
Blue Cash Preferred



PenFed Power Cash  
Rewards Visa Signature

**Cash Back Over Three Years**  
\$2,000

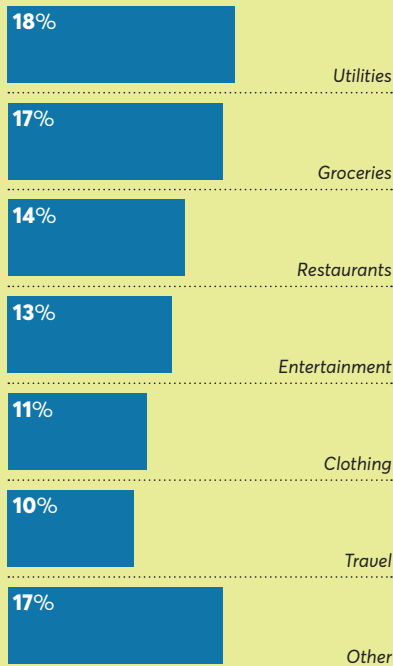
**Spending strategy:** Use the Blue Cash card for your grocery bills up to \$6,000 each year to earn 6 percent cash back. Also use Blue Cash for your gas and department store charges to receive an unlimited 3 percent back. The rest of your spending should go on the PenFed card to earn 2 percent, assuming you are a current or former member of the military, or have a qualifying PenFed checking account. To get a PenFed (short for the Pentagon Federal Credit Union) card, you have to join the credit union. Information is available at penfed.org.



For a customized cash-back card recommendation based on your actual spending, use our Credit Card Adviser Comparison Tool, at [CR.org/cardcompare](https://www.creditcards.com/credit-card-compare/).

## Single Female Professional

Typical Monthly Charges  
\$1,800



### Top Card Combo



HSBC Advance  
Mastercard



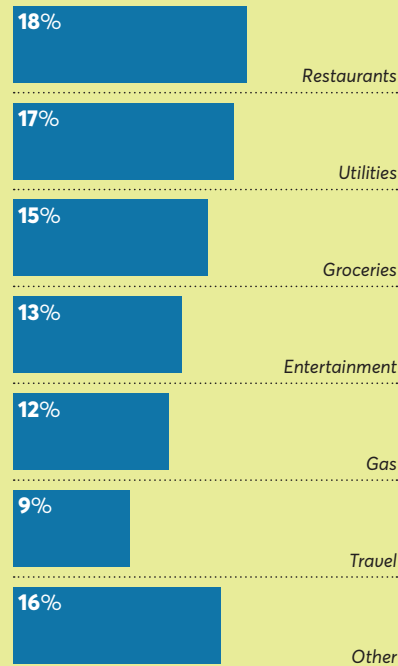
PenFed Power Cash  
Rewards Visa Signature

**Cash Back Over Three Years**  
\$1,600

**Spending strategy:** Use the HSBC Advance Mastercard for restaurant meals and entertainment events like concerts, amusement parks, and movies to get 2 points back per dollar spent (a point equals 1 cent). Put the rest on the PenFed Power Cash Rewards Visa to earn an unlimited 2 percent back, assuming you are a current or former member of the military, or have a qualifying PenFed checking account. To get a PenFed card, you have to join the credit union. Information is available at [penfed.org](https://www.penfed.org).

## Single Male Professional

Typical Monthly Charges  
\$1,800



### Top Card Combo



Wells Fargo Propel  
American Express



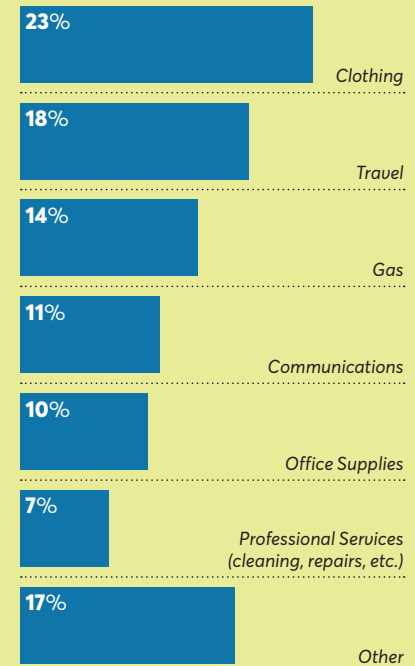
PenFed Power Cash  
Rewards Visa Signature

**Cash Back Over Three Years**  
\$1,675

**Spending strategy:** Your gas charges should go on the Propel card to earn 3 points per dollar spent, as well as your restaurant bills to get 2 points (for most spending, a point equals 1 cent). Put the rest of your charges on the PenFed Power Cash Rewards card to earn 2 percent unlimited cash back on purchases, assuming you are a current or former member of the military, or have a qualifying PenFed checking account. To get a PenFed card, you have to join the credit union. Information is available at [penfed.org](https://www.penfed.org).

## Small-Business Owner

Typical Monthly Charges  
\$2,200



### Top Card Combo



Capital One  
Spark Cash



Chase Ink  
Business Cash

**Cash Back Over Three Years**  
\$2,460

**Spending strategy:** Put supplies, internet, cable, and phone expenses for your office on Chase Ink Business Cash, which provides 5 percent cash back on those products and services up to \$25,000 in combined spending. Put the rest on the Capital One Spark Cash card, which gives an unlimited 2 percent cash back on all purchases.

Continued from page 47

used our proprietary credit card comparison calculator to review 83 rewards-card programs for six common spending scenarios based on data from the Bureau of Labor Statistics. And because we've found that you can earn up to 40 percent more cash back by strategically using two cards instead of just one, we've come up with card pairings that will increase your refund. (See "How to Stack the Cards in Your Favor," on pages 48 and 49.)

We evaluated the programs over a three-year period because certain cards offer a generous sign-on bonus but more limited rewards in subsequent years. We also assumed that cardholders don't carry balances (finance charges can swallow up any rewards) and, in the case of cards that award points or miles but allow you to convert them to cash, we considered the actual dollar value of the rewards.

A few generous rewards cards came up more than once because they work



well for more than one kind of spender.

We also provide a spending strategy for the two cards, because even the best pair is only as good as the way you use it. (To remind yourself which card to use for which purchases, keep a note in your wallet.)

For a more customized search for a cash-back card, try our easy-to-use

## Credit Card Adviser Comparison Tool

, powered by a version of the software we used for this analysis. You'll find it on the Consumer Reports website, at [CR.org/cardcompare](https://www.consumerreports.org/cardcompare).

The tool compares the benefits of cash-back cards and lists them in order of best to worst based on your actual spending data. It also estimates for each card the total cash back you'll receive after one year and after three years. To use the tool, first review your credit card statements to determine your total yearly spending on gas, groceries, restaurants, and travel (the rest of your spending goes into one category that the tool calls Everything Else). Then divide the totals by 12, plug in the monthly figures, and voila!, it will show you which credit card will pay you the most cash back in the first year and after three years. (Unlike the spending profiles on the previous pages, our Credit Card Adviser Comparison Tool will recommend only one card, not a pair.)

Follow our guidance, and within a few months you'll see the cash start piling up.

## When Canceling, Use Caution

*How to avoid expensive consequences when you're thinking of ditching a card.*

CLOSING A credit card account you rarely or never use might seem like a no-brainer. But if you're not careful, doing so could lower your credit score and raise the rate you might pay for home mortgages, car loans, and other loans you apply for in the near future. Here's what to keep in mind when thinking of closing a credit card account.

### Proceed with caution if:

- You're planning to apply for a mortgage or other loan. Your credit score is based partly on your credit utilization ratio, or the amount of available credit that you're using. (To figure yours, divide your credit card balances by your total credit limits and multiply by 100.) The lower your credit utilization ratio, the better. When you close an account, you lose its available credit and your

credit utilization ratio goes up. Though lenders each have their own policies, they generally prefer to see a credit utilization rate less than 30 percent, and the lower, the better.

- It's your only credit card. Having a mix of credit types (credit cards, installment loans, store cards, etc.) has a positive impact on your credit score (accounting for 10 percent of your overall score). If you have only one line in the credit

card category, closing the card will reduce your mix of credit types and negatively impact your credit score.

### Consider cutting up the card if:

- It has an annual fee. Keeping an account that you never plan to use and that charges an annual fee is a waste of money, unless one of the aforementioned scenarios applies.
- You haven't had it that long. Because

your credit history—the length of time you've had a credit account or loan—positively impacts your credit score, pick the card you've opened most recently if you're choosing between cards to close.

- You won't be applying for new credit soon. Your credit score will take a brief hit after you close an account, but if no other changes occur, it should rebound after about six months.

# Six Cards With Other Benefits Worth Considering

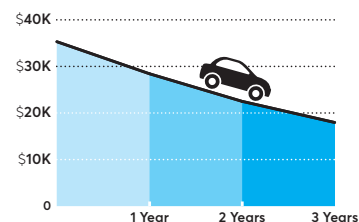
Cash back on purchases isn't the only smart reason to choose a card. Some cards provide other generous benefits—especially for travel and business—that could quickly offset the cost of any annual fee.

Card	Key Benefits	Other Perks	Annual Fee
 <p>Chase Ink Business Preferred</p>	<p>The Ink card will pay \$600 toward the purchase of a new cell phone to replace one that is damaged or stolen (loss is not covered)—for you or anyone else listed on your monthly cell-phone bill. You can make three claims annually; there's a <b>\$100 deductible per claim</b>. (Wells Fargo offers similar cell-phone insurance to individuals on several of its cards.)</p>	<p>Ink gives small-biz owners the ability to earn 3 points per \$1 spent each year on travel; shipping (FedEx, UPS, etc.); internet, cable, and phone services; and advertising purchases made with social media sites and search engines (up to \$150,000). Points can be redeemed for cash, travel, or other awards.</p>	<p><b>\$95</b></p>
 <p>Chase Sapphire Reserve</p>	<p>A \$300 annual travel credit that can be used to pay airline, hotel, cruise line, car rental, and other travel expenses.</p>	<p>A Global Entry/TSA Precheck credit (worth \$100 and \$85, respectively) every four years; free concierge services; special privileges with Avis, National, and Silvercar, which provide free upgrades and car rental discounts; and baggage delay insurance (up to \$100 per day for five days), which kicks in when your luggage has been delayed for more than 6 hours.</p>	<p><b>\$450</b></p>
 <p>Citi Prestige</p>	<p>A complimentary fourth consecutive night free on all hotel stays after you book one four-night stay through the Citi Prestige Concierge service, with no annual limit.</p>	<p>A \$250 air travel credit for flight-related expenses charged to the card, including airline tickets, baggage fees, and upgrades; a \$100 Global Entry application fee credit every five years; and free access to Priority Pass airport lounges for all of your immediate family members or for you and two guests.</p>	<p><b>\$450</b></p>
 <p>Discover It</p>	<p>Refunds on purchases that a merchant won't accept for return. Item must be in its original packaging, purchased within 90 days, and not valued at more than \$500 (maximum benefit of \$2,500 per year). There are exclusions (food and antiques, for instance), so check the fine print.</p>	<p>One percent cash back (up to 5 percent on some purchases), you can freeze the card to prevent fraud if it's lost or stolen, and a free FICO credit score each month.</p>	<p><b>None</b></p>
 <p>The Platinum Card From American Express</p>	<p>Free or discounted access to global Delta Sky Clubs, Airspace, and International American Express airport lounges for cardholders (and in some cases family and two guests). Cardholders also get unlimited Priority Pass Select lounge access and unlimited free access to the swanky Centurion lounges located in a handful of U.S. cities. (The Centurion Dallas lounge features spa services, including massages.)</p>	<p>A \$200 annual travel credit for airline fees and other charges (excluding airfare), free space-available upgrades at select hotels, \$200 in Uber credits each year, automatic Hilton Honors Gold and Starwood Preferred Guest Gold status, and a Global Entry or TSA Precheck fee rebate every four years.</p>	<p><b>\$550</b></p>
 <p>US Bank Altitude Reserve Visa</p>	<p>Presale access and \$60 off the \$225 ticket, per person, to any of the James Beard Foundation Celebrity Chef Tour events, which take place in more than 20 U.S. cities each year.</p>	<p>\$325 in annual travel credits that can be used on airline, hotel, cruise line, car rental, and other travel expenses; 12 complimentary Gogo in-flight WiFi passes per year (up to a \$228 value); four free airport lounge visits per year through Priority Pass; and up to \$100 in credit every four years to enroll in either TSA Precheck or Global Entry.</p>	<p><b>\$400</b></p>

# Road Report

Ratings from our test track plus expert car advice

The average new-car depreciation during its first three years



Source: Kelley Blue Book.

## Best and Worst Used Cars

We surveyed more than 225,900 subscribers to find the used-car models that will keep you satisfied over the long haul, and the ones that won't.

by Jonathan Linkov

### RECALL RED FLAGS

Sellers of used cars are not required to fix outstanding recalls—even on certified pre-owned models. You can check for open recalls on any

car by entering the vehicle identification number (VIN) at [safercar.gov](https://www.safercar.gov). You can check at [CR.org/carrecalls](https://www.crb.org/carrecalls) for guidance on the recall process. The recall

should be done promptly at a new-car dealership for that brand. Some recalls affect parts that can't immediately be replaced; make sure you're

comfortable with the repair timeline before you agree to buy. Worried about Takata airbags? Get the latest updates at [CR.org/takata](https://www.crb.org/takata).

**STANDING IN THE SHOWROOM**, you fall in love with your new car. But how can you confidently know the vehicle will suit your needs as the years and miles pile up? In other words, how can you tell whether your love will last?

Consumer Reports doesn't have a crystal ball, but we have the next best thing: In our 2016 Auto Satisfaction Survey, 225,935 subscribers reported on how satisfied they've been with their vehicle and whether they'd buy it again. They also report how satisfied they are with the driving experience and comfort. In a separate Reliability survey we asked how much they paid for maintenance and repairs.

This is great information if you're looking to buy a used vehicle or deciding whether it makes sense to trade for something newer.

## Should You Stay or Should You Go?

For many car shoppers and owners, the two key moments in the life of a vehicle are at three years and 10 years.

Savvy buyers know that a smart used-car purchase can deliver the best return on their investment, and a 3-year-old car sits in the sweet spot. These models are new enough to have the latest safety and comfort features yet they've depreciated almost 50 percent on average since rolling off the lot. Lessees must decide whether to buy out the lease and keep the car, or move on. Owners face a similar decision because car warranties often run out at three years. A model that had problems under warranty in year three might become an expensive headache in year four or beyond.

People who own a 10-year-old car have probably already paid it off, but the vehicle is most likely long out of warranty. If well-maintained, a decade-old car should still be in good working order for years to come, but repair and maintenance costs are likely to rise, and it lacks the latest safety and convenience features. So owners need to decide how many more miles they can squeeze out.

## What's at the Heart of Satisfaction?

Consumer Reports found that no matter the age, vehicles that inspired loyalty were reliable and fun to drive, delivered great fuel economy, and had high-tech features or luxurious cabins. They also scored well as new cars in CR testing. Those that performed poorly in some or all of these areas were cars that owners said they regretted buying.

According to the survey, the Toyota Prius was among the most satisfying for owners of 3- and 10-year-old models for its combination of fuel efficiency and reliability. One owner praised "the excellent gas mileage, the comfort, the reliability ... and the spacious cargo carrying capacity." Others lauded their Prius for having no maintenance issues. The Prius' maintenance and repair costs placed it among the least expensive 10-year-old vehicles to own.

Among small SUVs, the Subaru Forester, Honda CR-V, and Toyota RAV4 consistently satisfied their owners no matter how old the model. One Forester owner said, "Excellent all-around vehicle ... useful in most situations." Another said, "Great visibility, comfortable ... Very functional, it just works."

Competitors, including the Jeep Compass and Hyundai Tucson, finished near the bottom of the results.

Honda and Toyota vehicles also performed well in the midsize SUV and luxury car categories, and for minivans: More than 70 percent of Honda Odyssey and Toyota Sienna owners said they'd buy them again, even after 10 years of ownership.

The survey also showed that some models defy CR vehicle ratings. For example, the Toyota 4Runner hasn't fared well in CR tests, yet the survey results showed 75 percent of 2014 owners and 77 percent of 2007 owners would buy their model again. One owner told us that it was an "excellent choice for me and my husband. Comfortable and stylish for me and has truck essentials (towing

and hauling) for him." But the equally nichey Jeep Wrangler had mixed results, with 73 percent of owners of 2014 models saying they'd buy one again compared with just 59 percent for the 2007 model. One owner blamed the "really bad handling on the road and outdated automatic transmission." And subscribers said the Wrangler just isn't reliable. "Only 2 years old and had drive shaft replaced after I heard loud knocking noise while turning the vehicle," one owner said. "[The] dealer stated that the drive shaft failed due to improper installation at the factory."

## Is Certified Pre-Owned Meaningful?

Certified pre-owned (CPO) vehicles are billed as the cream of the used-car crop, inspected and reconditioned according to stringent automaker guidelines. In reality, they're not always the best choice.

Much of the increased cost for a CPO vehicle comes from its extended warranty. Consumer Reports generally advises against paying extra for this protection because it amounts to a bet that your car will break down.

To be sure, a CPO vehicle can provide peace of mind, especially if you're choosing a model with less-than-average reliability. But in the end, you'll probably spend more for the added protection than you will need.

For the best deal, we suggest buying a non-CPO used car and having a pre-purchase inspection by your mechanic. (Even if you decide to go with a CPO model, you still should have that extra inspection.) Use the additional money you would have spent on the CPO warranty protection for a rainy-day car repair fund. If it goes unused, apply it to the down payment for your next car.

Before going the CPO route, read the warranty fine print to determine who has certified the vehicle. Warranties from manufacturers tend to be the most reliable, followed by dealers, then third-party providers.

# The Cost of Car Ownership

THE INITIAL PURCHASE price of a car is only part of the cost, of course. A key question is whether you can afford the drip, drip of maintenance and repairs for as long as you own it.

In our 2016 Auto Reliability Survey, we asked subscribers to tell us how much they paid out of pocket for general maintenance (oil changes, etc.) and repairs during the previous 12 months. Here we detail those average 12-month costs for owners of 2014 and 2007 models for the brands about which we have survey data. These costs provide an insight into the expenses owners will incur over the life of their vehicle.

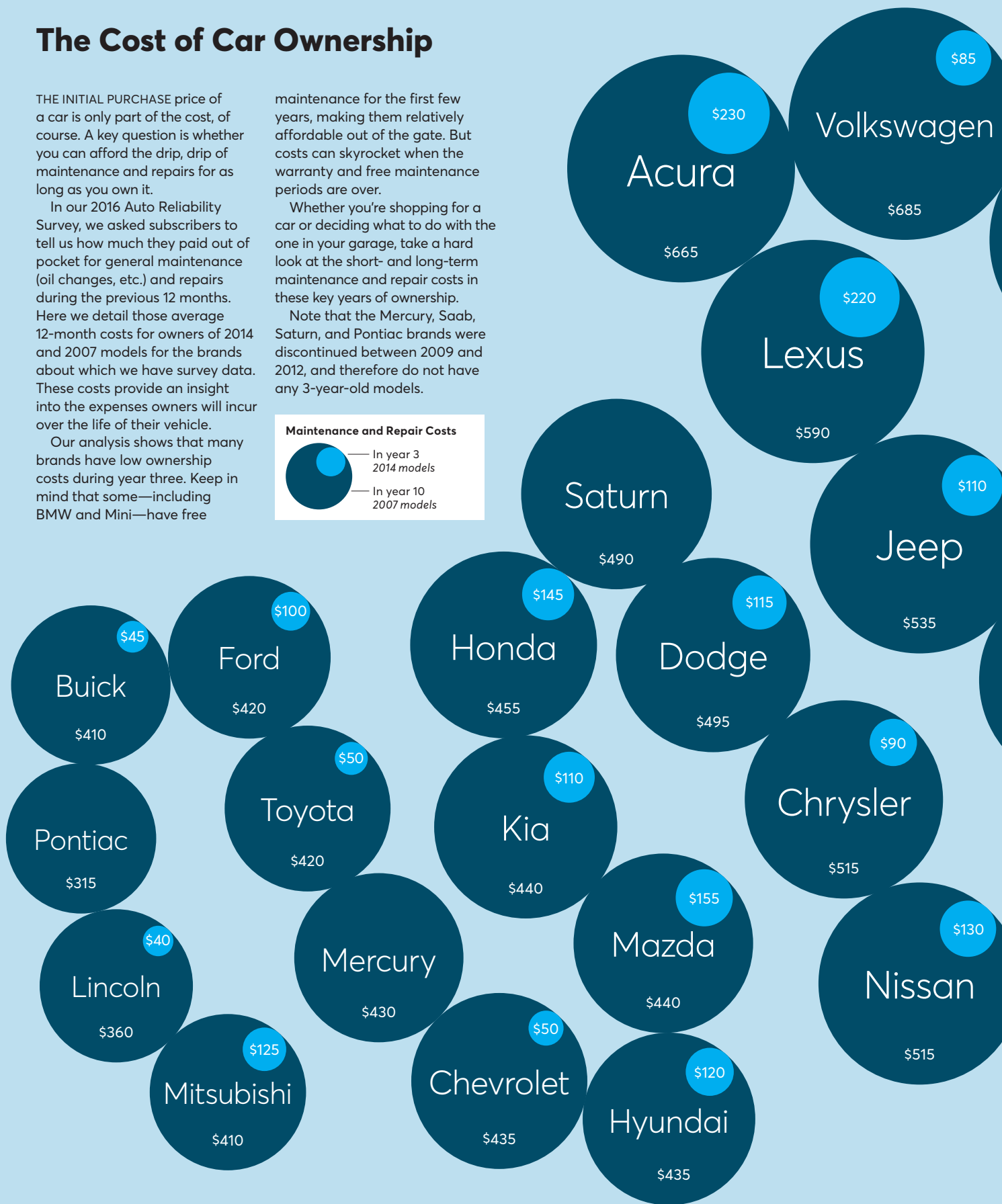
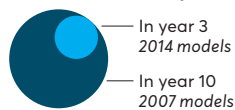
Our analysis shows that many brands have low ownership costs during year three. Keep in mind that some—including BMW and Mini—have free

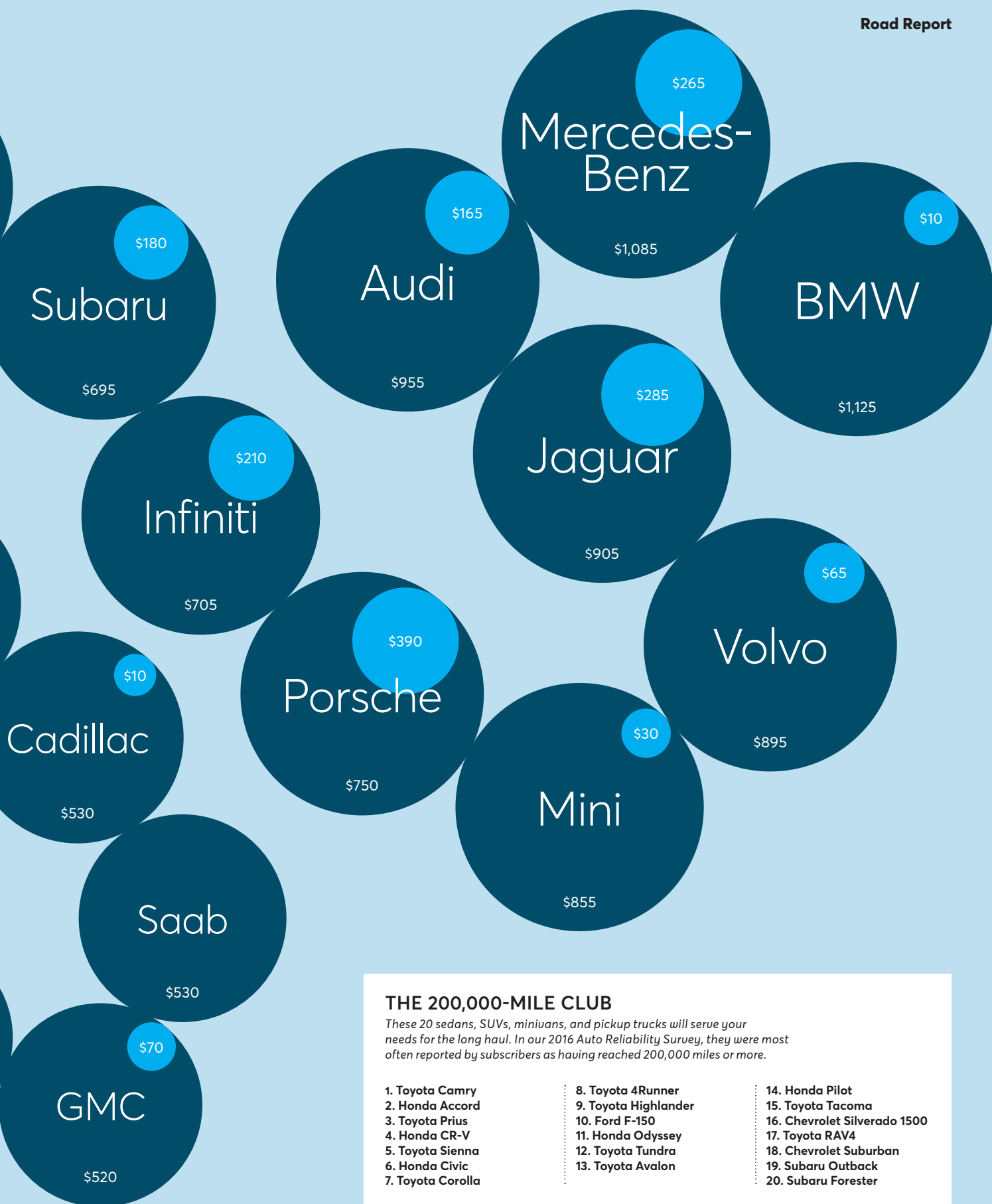
maintenance for the first few years, making them relatively affordable out of the gate. But costs can skyrocket when the warranty and free maintenance periods are over.

Whether you're shopping for a car or deciding what to do with the one in your garage, take a hard look at the short- and long-term maintenance and repair costs in these key years of ownership.

Note that the Mercury, Saab, Saturn, and Pontiac brands were discontinued between 2009 and 2012, and therefore do not have any 3-year-old models.

## Maintenance and Repair Costs





### THE 200,000-MILE CLUB

*These 20 sedans, SUVs, minivans, and pickup trucks will serve your needs for the long haul. In our 2016 Auto Reliability Survey, they were most often reported by subscribers as having reached 200,000 miles or more.*

- |                   |                      |                              |
|-------------------|----------------------|------------------------------|
| 1. Toyota Camry   | 8. Toyota 4Runner    | 14. Honda Pilot              |
| 2. Honda Accord   | 9. Toyota Highlander | 15. Toyota Tacoma            |
| 3. Toyota Prius   | 10. Ford F-150       | 16. Chevrolet Silverado 1500 |
| 4. Honda CR-V     | 11. Honda Odyssey    | 17. Toyota RAV4              |
| 5. Toyota Sienna  | 12. Toyota Tundra    | 18. Chevrolet Suburban       |
| 6. Honda Civic    | 13. Toyota Avalon    | 19. Subaru Outback           |
| 7. Toyota Corolla |                      | 20. Subaru Forester          |

**Ratings** ➤ **Smiles per Mile** The most satisfying models are reliable and comfortable, yet aren't expensive to maintain.

2014 Makes & Models 3 years old	Owner Satisfaction				
	Percent Would Buy Again	Driving	Comfort	Reliability	Maintenance & Repair Cost

#### SUBCOMPACT CARS

Hyundai Accent	58	⬇️	⬇️	⬆️	\$90
Fiat 500	49	⬇️	⬇️	—	\$50
Ford Fiesta	47	⬇️	⬇️	⬇️	\$75
Nissan Versa Note	47	⬇️	⬇️	⬇️	\$145
Chevrolet Sonic	42	⬇️	⬇️	⬇️	\$40

#### COMPACT CARS

Mazda3	70	⬆️	⬇️	⬆️	\$125
Toyota Corolla	70	⬇️	⬇️	⬆️	\$45
Kia Soul	69	⬇️	⬇️	⬆️	\$115
Mini Cooper	69	⬆️	⬇️	⬇️	\$25
Honda Civic	64	⬇️	⬇️	⬆️	\$110
Subaru Impreza	63	⬇️	⬇️	⬆️	\$165
Hyundai Elantra	59	⬇️	⬇️	⬆️	\$115
Kia Forte	58	⬆️	⬇️	⬆️	\$120
Chevrolet Cruze	53	⬇️	⬇️	⬇️	\$45
Volkswagen Beetle	51	⬆️	⬇️	⬇️	\$40
Fiat 500L	51	⬇️	⬇️	⬇️	\$125
Volkswagen Golf	47	⬆️	⬇️	—	\$55
Volkswagen Jetta	47	⬆️	⬇️	⬇️	\$90
Nissan Sentra	44	⬇️	⬇️	⬇️	\$105
Dodge Dart	43	⬇️	⬇️	—	\$110
Ford Focus	42	⬇️	⬇️	⬇️	\$80

#### HYBRIDS/ELECTRIC CARS

Tesla Model S	94	⬆️	⬆️	⬇️	\$195
Chevrolet Volt	79	⬆️	⬇️	⬇️	\$20
Toyota Prius	79	⬇️	⬇️	⬆️	\$60
Toyota Prius V	73	⬇️	⬇️	⬆️	\$35
Toyota Prius C	72	⬇️	⬇️	⬆️	\$35
Ford C-Max	71	⬆️	⬆️	⬇️	\$75
BMW i3	67	⬆️	⬇️	⬇️	\$0
Nissan Leaf	62	⬇️	⬇️	⬆️	\$60
Lexus CT	48	⬇️	⬇️	—	\$145

#### MIDSIZE CARS

Toyota Camry (hybrid)	78	⬆️	⬇️	⬆️	\$55
Subaru Legacy	75	⬆️	⬇️	⬆️	\$175

2014 Makes & Models 3 years old	Owner Satisfaction				
	Percent Would Buy Again	Driving	Comfort	Reliability	Maintenance & Repair Cost

#### MIDSIZE CARS Continued

Ford Fusion (hybrid)	74	⬆️	⬆️	⬇️	\$90
Honda Accord	72	⬆️	⬇️	⬆️	\$120
Toyota Camry	72	⬆️	⬇️	⬆️	\$40
Honda Accord (hybrid)	70	⬆️	⬇️	⬆️	\$150
Mazda6	70	⬆️	⬇️	⬆️	\$160
Chevrolet Malibu	66	⬆️	⬇️	⬆️	\$55
Ford Fusion	65	⬆️	⬇️	⬇️	\$100
Kia Optima	62	⬇️	⬇️	⬆️	\$115
Hyundai Sonata	60	⬇️	⬇️	⬆️	\$120
Hyundai Sonata (hybrid)	57	⬇️	⬇️	⬆️	\$130
Chrysler 200	54	⬇️	⬇️	—	\$80
Nissan Altima	51	⬇️	⬇️	⬇️	\$140
Volkswagen Passat	48	⬆️	⬇️	⬇️	\$125

#### LARGE CARS

Dodge Charger	73	⬆️	⬆️	⬇️	\$105
Chevrolet Impala	73	⬆️	⬆️	⬇️	\$60
Toyota Avalon (hybrid)	73	⬆️	⬆️	⬆️	\$25
Chrysler 300	73	⬆️	⬆️	⬇️	\$80
Kia Cadenza	71	⬆️	⬆️	⬆️	\$60
Hyundai Azera	65	⬇️	⬆️	⬆️	\$125
Toyota Avalon	65	⬆️	⬇️	⬆️	\$35
Ford Taurus	62	⬆️	⬆️	⬇️	\$115
Nissan Maxima	62	⬆️	⬆️	⬆️	\$130

#### LUXURY COMPACT CARS

Buick Regal	74	⬆️	⬆️	⬆️	\$45
Audi A4	68	⬆️	⬆️	⬇️	\$190
BMW 3 Series	66	⬆️	⬇️	⬆️	\$0
Buick Verano	65	⬆️	⬇️	⬆️	\$25
Mercedes-Benz C-Class	63	⬆️	⬇️	⬆️	\$205
Volvo S60	62	⬆️	⬆️	⬆️	\$60
Acura TSX	61	⬇️	⬇️	—	\$185
Lexus IS	59	⬆️	⬇️	⬆️	\$155
Mercedes-Benz CLA	49	⬇️	⬇️	—	\$245
Cadillac ATS	45	⬆️	⬇️	⬇️	\$0

2014 Makes & Models 3 years old	Owner Satisfaction				
	Percent Would Buy Again	Driving	Comfort	Reliability	Maintenance & Repair Cost

#### LUXURY COMPACT CARS *Continued*

<b>Infiniti Q50</b>	42				\$210
<b>Acura ILX</b>	40			—	\$125

#### LUXURY MIDSIZED/LARGE CARS

<b>Lexus LS</b>	80				\$265
<b>Audi A7</b>	80				\$125
<b>Hyundai Genesis</b>	79			—	\$170
<b>Lexus ES (hybrid)</b>	78				\$185
<b>Audi A6</b>	77				\$175
<b>Lincoln MKZ (hybrid)</b>	77				\$35
<b>Mercedes-Benz S-Class</b>	76			—	\$310
<b>Lexus ES</b>	75				\$145
<b>Mercedes-Benz E-Class</b>	74				\$235
<b>Lexus GS</b>	74				\$160
<b>Audi A8</b>	70			—	\$90
<b>Lincoln MKZ</b>	70				\$45
<b>Hyundai Equus</b>	69				\$0
<b>BMW 5 Series</b>	68				\$0
<b>Lincoln MKS</b>	67			—	\$45
<b>Buick LaCrosse</b>	66				\$40
<b>Cadillac CTS</b>	65				\$0
<b>Acura TL</b>	63				\$175
<b>BMW 7 Series</b>	63			—	\$0
<b>Acura RLX</b>	54				\$200
<b>Cadillac XTS</b>	54				\$0

#### SPORTY CARS & COUPES/CONVERTIBLES

<b>Chevrolet Corvette</b>	90				\$0
<b>Porsche 911</b>	88			—	\$380
<b>Dodge Challenger</b>	88			—	\$95
<b>Porsche Cayman</b>	88			—	\$345
<b>Audi S4</b>	85			—	\$390
<b>BMW 2 Series</b>	83			—	\$0
<b>Mercedes-Benz SLK</b>	82			—	\$140
<b>Mazda MX-5 Miata</b>	82			—	\$95
<b>Audi A5</b>	78				\$185
<b>Porsche Boxster</b>	74			—	\$340

2014 Makes & Models 3 years old	Owner Satisfaction				
	Percent Would Buy Again	Driving	Comfort	Reliability	Maintenance & Repair Cost

#### SPORTY CARS & COUPES/CONVERTIBLES *Continued*

<b>BMW 6 Series</b>	73			—	\$0
<b>BMW 4 Series</b>	71				\$0
<b>Ford Mustang</b>	70				\$85
<b>Chevrolet Camaro</b>	69				\$35
<b>Nissan Z</b>	67			—	\$100
<b>Subaru Impreza WRX/STI</b>	64			—	\$155

#### WAGONS

<b>Volvo XC70</b>	81			—	\$70
<b>Subaru Outback</b>	75				\$175
<b>Honda Crosstour</b>	71			—	\$140
<b>Audi Allroad</b>	68			—	\$160
<b>Toyota Venza</b>	59				\$40

#### MINIVANS

<b>Honda Odyssey</b>	74				\$180
<b>Toyota Sienna</b>	73				\$70
<b>Chrysler Town &amp; Country</b>	65				\$90
<b>Mazda5</b>	64				\$155
<b>Kia Sedona</b>	63			—	\$140
<b>Dodge Grand Caravan</b>	57				\$110
<b>Ford Transit Connect</b>	55			—	\$135

#### SMALL SUVs

<b>Subaru Forester</b>	76				\$205
<b>Toyota RAV4</b>	66				\$35
<b>Mazda CX-5</b>	65				\$185
<b>Honda CR-V</b>	65				\$130
<b>Subaru XV Crosstrek</b>	64				\$150
<b>Volkswagen Tiguan</b>	63				\$75
<b>Ford Escape</b>	59				\$90
<b>Mitsubishi Outlander</b>	54			—	\$160
<b>Hyundai Tucson</b>	54				\$110
<b>Nissan Juke</b>	49			—	\$100
<b>Kia Sportage</b>	49			—	\$110
<b>Nissan Rogue</b>	49				\$120
<b>Jeep Cherokee</b>	48				\$105
<b>Jeep Compass</b>	40			—	\$90
<b>Jeep Patriot</b>	31				\$100

## Ratings

2014 Makes & Models 3 years old	Owner Satisfaction				
	Percent Would Buy Again	Driving	Comfort	Reliability	Maintenance & Repair Cost

### MIDSIZED SUVs

Toyota FJ Cruiser	87	↑	↓	—	\$35
Toyota Highlander	75	↑	↑	↑	\$60
Toyota 4Runner	75	↓	↓	↑	\$85
Jeep Wrangler	73	↓	↓	↓	\$100
Toyota Highlander (hybrid)	66	↑	↑	↑	\$65
Honda Pilot	66	↓	↓	↑	\$185
Ford Explorer	66	↓	↑	↓	\$105
Kia Sorento	65	↑	↓	↓	\$120
Hyundai Santa Fe	64	↑	↓	↓	\$175
Jeep Grand Cherokee	64	↑	↑	↓	\$140
Ford Edge	63	↑	↓	↓	\$85
Nissan Murano	63	↑	↓	↑	\$120
Hyundai Santa Fe Sport	63	↓	↓	↓	\$170
Chevrolet Equinox	58	↓	↓	↑	\$55
GMC Terrain	58	↓	↓	↑	\$65
Mazda CX-9	54	↑	↓	↑	\$170
Dodge Journey	47	↓	↓	↓	\$80
Nissan Pathfinder	46	↓	↓	↓	\$200

### LARGE SUVs

Ford Flex	80	↑	↑	↑	\$110
Ford Expedition	75	↓	↑	↑	\$115
Dodge Durango	74	↑	↑	↓	\$110
Toyota Sequoia	72	↓	↑	—	\$115
Chevrolet Suburban	67	↓	↓	↓	\$215
GMC Yukon XL	67	↓	↓	↓	\$275
Chevrolet Traverse	61	↑	↑	↑	\$75
GMC Acadia	61	↑	↑	↓	\$70
Chevrolet Tahoe	58	↓	↓	↓	\$170
GMC Yukon	58	↓	↓	↓	\$85

### LUXURY COMPACT SUVs

Audi Q5	71	↑	↑	↑	\$185
Mini Cooper Countryman	67	↑	↓	↑	\$70
Mercedes-Benz GLK-Class	67	↑	↑	↑	\$335
BMW X3	65	↑	↑	↑	\$0
Buick Encore	62	↓	↓	↑	\$20

2014 Makes & Models 3 years old	Owner Satisfaction				
	Percent Would Buy Again	Driving	Comfort	Reliability	Maintenance & Repair Cost

### LUXURY COMPACT SUVs Continued

Acura RDX	60	↑	↓	↑	\$250
Cadillac SRX	58	↑	↑	↓	\$0
BMW X1	56	↑	↓	↑	\$0
Volvo XC60	56	↑	↑	—	\$40
Infiniti QX50	51	↑	↓	—	\$200

### LUXURY MIDSIZED/LARGE SUVs

Porsche Cayenne	80	↑	↑	↓	\$455
Lexus RX	77	↑	↑	↑	\$220
Lexus LX	76	↑	↑	—	\$325
Mercedes-Benz GL-Class	74	↑	↑	↓	\$280
Lexus RX (hybrid)	74	↑	↑	↑	\$295
Lexus GX	74	↑	↑	↑	\$265
Mercedes-Benz M-Class	72	↑	↑	↓	\$325
Buick Enclave	71	↑	↑	↓	\$75
Lincoln MKX	71	↑	↑	↑	\$15
Acura MDX	70	↑	↑	↓	\$240
BMW X5	69	↑	↑	↓	\$0
Volkswagen Touareg	65	↑	↑	↓	\$90
Cadillac Escalade	61	↓	↓	—	\$125
Audi Q7	57	↑	↑	—	\$160
Infiniti QX80	50	↑	↑	—	\$270
Infiniti QX60	45	↓	↓	↓	\$240

### PICKUP TRUCKS

Toyota Tundra	76	↑	↑	↑	\$100
Ford F-150	75	↑	↑	↑	\$100
Chevrolet Silverado 2500HD	74	↑	↑	↓	\$125
GMC Sierra 2500HD	74	↑	↑	↓	\$90
Honda Ridgeline	74	↑	↓	↑	\$150
Ford F-250	71	↑	↑	↓	\$200
Toyota Tacoma	69	↓	↓	↑	\$60
Ram 1500	65	↑	↑	↓	\$115
Ram 2500	65	↑	↑	↓	\$235
Chevrolet Silverado 1500	64	↑	↑	↓	\$55
GMC Sierra 1500	64	↑	↑	↓	\$70
Nissan Frontier	49	↓	↓	↓	\$100

2007 Makes & Models 10 years old	Owner Satisfaction				Maintenance & Repair Cost
	Percent Would Buy Again	Driving	Comfort	Reliability	

#### SUBCOMPACT CARS

<b>Honda Fit</b>	74	👍	👎	👍	\$335
<b>Toyota Yaris</b>	59	👎	👎	👍	\$265
<b>Hyundai Accent</b>	59	👎	👎	—	\$375
<b>Nissan Versa (hatchback)</b>	41	👎	👎	👎	\$415

#### COMPACT CARS

<b>Toyota Corolla</b>	67	👍	👎	👍	\$360
<b>Pontiac Vibe</b>	66	👎	👎	👍	\$265
<b>Mazda3</b>	63	👍	👎	👎	\$460
<b>Hyundai Elantra</b>	62	👎	👎	👍	\$465
<b>Honda Civic</b>	61	👍	👎	👍	\$420
<b>Toyota Matrix</b>	59	👎	👎	👍	\$300
<b>Volkswagen Rabbit</b>	57	👎	👎	—	\$415
<b>Subaru Impreza</b>	55	👍	👎	👍	\$435
<b>Mini Cooper</b>	53	👍	👎	👎	\$855
<b>Saturn Ion</b>	51	👎	👎	👎	\$375
<b>Chevrolet HHR</b>	50	👎	👎	👎	\$380
<b>Ford Focus</b>	50	👎	👎	👎	\$370
<b>Chrysler PT Cruiser</b>	47	👎	👎	👎	\$550
<b>Kia Spectra</b>	47	👎	👎	—	\$480
<b>Scion tC</b>	44	👎	👎	—	\$600
<b>Volkswagen Jetta</b>	37	👎	👎	—	\$615
<b>Honda Civic (hybrid)</b>	37	👎	👎	👍	\$440
<b>Volkswagen Beetle</b>	36	👍	👎	—	\$500
<b>Nissan Sentra</b>	36	👎	👎	—	\$365
<b>Chevrolet Cobalt</b>	34	👎	👎	—	\$390
<b>Dodge Caliber</b>	27	👎	👎	—	\$470

#### SOLELY HYBRIDS & ELECTRIC CARS

<b>Toyota Prius</b>	84	👍	👎	👍	\$380
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#### MIDSIZED CARS

<b>Toyota Camry (hybrid)</b>	79	👍	👍	👍	\$370
<b>Kia Optima</b>	75	👎	👎	—	\$435
<b>Honda Accord</b>	71	👍	👍	👍	\$415

2007 Makes & Models 10 years old	Owner Satisfaction				Maintenance & Repair Cost
	Percent Would Buy Again	Driving	Comfort	Reliability	

#### MIDSIZED CARS *Continued*

<b>Toyota Camry</b>	68	👎	👎	👍	\$405
<b>Hyundai Sonata</b>	63	👎	👍	👎	\$390
<b>Ford Fusion</b>	58	👎	👍	👍	\$375
<b>Mercury Milan</b>	58	👎	👍	👍	\$275
<b>Mazda6</b>	57	👎	👎	👎	\$410
<b>Subaru Legacy</b>	51	👍	👎	—	\$630
<b>Nissan Altima</b>	48	👎	👎	👎	\$450
<b>Volkswagen Passat</b>	47	👍	👍	👎	\$875
<b>Pontiac G6</b>	44	👍	👎	👎	\$555
<b>Chevrolet Malibu</b>	44	👍	👎	👎	\$470
<b>Saturn Aura</b>	43	👎	👍	👍	\$590
<b>Chrysler Sebring</b>	33	👎	👎	—	\$685

#### LARGE CARS

<b>Toyota Avalon</b>	76	👍	👍	👍	\$455
<b>Chrysler 300</b>	69	👍	👎	👎	\$490
<b>Ford Crown Victoria</b>	64	👍	👍	👎	\$320
<b>Mercury Grand Marquis</b>	64	👍	👍	👎	\$320
<b>Hyundai Azera</b>	64	👍	👍	👎	\$315
<b>Ford Five Hundred</b>	59	👎	👎	👎	\$400
<b>Mercury Montego</b>	59	👎	👎	👎	\$680
<b>Chevrolet Impala</b>	48	👍	👎	👍	\$455
<b>Nissan Maxima</b>	47	👍	👍	👎	\$520
<b>Ford Taurus</b>	47	👎	👎	👍	\$450

#### LUXURY COMPACT CARS

<b>Acura TSX</b>	75	👍	👍	👍	\$410
<b>Infiniti G</b>	71	👍	👍	👍	\$670
<b>BMW 3 Series</b>	62	👍	👎	👍	\$945
<b>Saab 9-3</b>	59	👍	👍	—	\$535
<b>Lexus IS</b>	54	👍	👎	👎	\$685
<b>Audi A4</b>	53	👍	👍	👍	\$950
<b>Volvo S60</b>	52	👎	👎	—	\$820
<b>Mercedes-Benz C-Class</b>	50	👍	👍	—	\$765

## Ratings

2007 Makes & Models 10 years old	Owner Satisfaction				Maintenance & Repair Cost
	Percent Would Buy Again	Driving	Comfort	Reliability	

### LUXURY MIDSIZED/LARGE CARS

Lexus LS	81	⬆	⬆	⬆	\$655
Lincoln Town Car	79	⬆	⬆	—	\$350
Lexus ES	78	⬆	⬆	⬆	\$455
Audi A6	76	⬆	⬆	—	\$940
Lexus GS	76	⬆	⬆	⬆	\$485
Mercedes-Benz S-Class	70	⬆	⬆	—	\$1,150
Volvo S80	70	⬆	⬆	—	\$1,105
Infiniti M	67	⬆	⬆	⬆	\$750
Cadillac DTS	66	⬆	⬆	⬆	\$465
Acura TL	65	⬆	⬆	⬆	\$635
Mercedes-Benz E-Class	64	⬆	⬆	⬆	\$965
Acura RL	64	⬆	⬆	—	\$785
Lincoln MKZ	59	⬆	⬆	⬆	\$295
Cadillac CTS	58	⬆	⬆	—	\$465
Buick Lucerne	56	⬆	⬆	⬆	\$490
BMW 5 Series	56	⬆	⬆	⬆	\$1,375
Buick LaCrosse	44	⬆	⬆	⬆	\$500

### SPORTY CARS & COUPES/CONVERTIBLES

Honda S2000	85	⬆	⬆	—	\$230
Mazda MX-5 Miata	82	⬆	⬆	⬆	\$275
Porsche Boxster	81	⬆	⬆	—	\$975
Toyota Camry Solara	80	⬆	⬆	⬆	\$300
Chevrolet Corvette	80	⬆	⬆	⬆	\$280
Porsche 911	79	⬆	⬆	—	\$500
Porsche Cayman	75	⬆	⬆	—	\$625
Volkswagen GTI	74	⬆	⬆	—	\$865
Mercedes-Benz CLK	70	⬆	⬆	—	\$910
Ford Mustang	70	⬆	⬆	⬆	\$245
BMW Z4	68	⬆	⬆	—	\$150
Saturn Sky	63	⬆	⬆	—	\$70
Volkswagen Eos	61	⬆	⬆	⬆	\$635
Volvo C70	44	⬆	⬆	—	\$700

2007 Makes & Models 10 years old	Owner Satisfaction				Maintenance & Repair Cost
	Percent Would Buy Again	Driving	Comfort	Reliability	

### WAGONS

Volvo XC70	64	⬆	⬆	⬆	\$960
Subaru Outback	64	⬆	⬆	⬆	\$815
Kia Rondo	54	⬆	⬆	—	\$555

### MINIVANS

Toyota Sienna	75	⬆	⬆	⬆	\$610
Honda Odyssey	70	⬆	⬆	⬆	\$735
Hyundai Entourage	53	⬆	⬆	—	\$585
Mazda5	48	⬆	⬆	—	\$710
Chevrolet Uplander	45	⬆	⬆	—	\$330
Chrysler Town & Country	45	⬆	⬆	⬆	\$490
Dodge Grand Caravan	45	⬆	⬆	⬆	\$505
Kia Sedona	45	⬆	⬆	—	\$650

### SMALL SUVs

Honda Element	75	⬆	⬆	⬆	\$530
Kia Sportage	69	⬆	⬆	—	\$435
Subaru Forester	67	⬆	⬆	⬆	\$635
Honda CR-V	66	⬆	⬆	⬆	\$420
Saturn Vue	60	⬆	⬆	⬆	\$525
Toyota RAV4	59	⬆	⬆	⬆	\$550
Mitsubishi Outlander	55	⬆	⬆	⬆	\$480
Ford Escape	53	⬆	⬆	⬆	\$400
Mercury Mariner	53	⬆	⬆	⬆	\$540
Hyundai Tucson	46	⬆	⬆	⬆	\$410
Mazda CX-7	38	⬆	⬆	—	\$695
Jeep Liberty	36	⬆	⬆	⬆	\$490
Jeep Compass	19	⬆	⬆	—	\$550

### MIDSIZED SUVs

Toyota Highlander	79	⬆	⬆	⬆	\$465
Toyota 4Runner	77	⬆	⬆	⬆	\$415
Toyota FJ Cruiser	75	⬆	⬆	⬆	\$445
Toyota Highlander (hybrid)	75	⬆	⬆	⬆	\$470
Honda Pilot	70	⬆	⬆	⬆	\$605
Hyundai Santa Fe	61	⬆	⬆	⬆	\$500

2007 Makes & Models 10 years old	Owner Satisfaction					Maintenance & Repair Cost
	Percent Would Buy Again	Driving	Comfort	Reliability		

#### MIDSIZED SUVs Continued

<b>Ford Explorer</b>	61	↓	↓	↓		\$570
<b>Mercury Mountaineer</b>	61	↓	↓	↓		\$470
<b>Chevrolet TrailBlazer</b>	60	↓	↓	↓		\$595
<b>GMC Envoy</b>	60	↓	↓	↓		\$515
<b>Ford Edge</b>	60	↓	↓	↓		\$600
<b>Jeep Grand Cherokee</b>	60	↓	↓	↑		\$500
<b>Mazda CX-9</b>	60	↓	↓	—		\$505
<b>Jeep Wrangler</b>	59	↓	↓	↓		\$425
<b>Ford Freestyle</b>	59	↓	↓	↓		\$420
<b>Hyundai Veracruz</b>	58	↑	↑	—		\$470
<b>Nissan Murano</b>	54	↓	↓	↓		\$735
<b>Chrysler Pacifica</b>	52	↓	↓	—		\$470
<b>Chevrolet Equinox</b>	52	↓	↓	↓		\$520
<b>Nissan Xterra</b>	48	↑	↓	↓		\$505
<b>Jeep Commander</b>	46	↑	↑	—		\$715

#### LARGE SUVs

<b>Toyota Sequoia</b>	80	↑	↑	↑		\$545
<b>Ford Expedition</b>	66	↓	↓	↓		\$600
<b>Chevrolet Suburban</b>	66	↓	↑	↓		\$805
<b>GMC Yukon XL</b>	66	↓	↑	↓		\$840
<b>Chevrolet Tahoe</b>	63	↑	↑	↓		\$495
<b>GMC Yukon</b>	63	↑	↑	↓		\$830
<b>GMC Acadia</b>	41	↓	↓	↓		\$1,490
<b>Saturn Outlook</b>	41	↓	↓	↓		\$1,070

#### LUXURY COMPACT SUVs

<b>Acura RDX</b>	56	↑	↓	↑		\$495
<b>BMW X3</b>	56	↑	↓	↓		\$1,320
<b>Cadillac SRX</b>	45	↓	↓	—		\$550

2007 Makes & Models 10 years old	Owner Satisfaction					Maintenance & Repair Cost
	Percent Would Buy Again	Driving	Comfort	Reliability		

#### LUXURY MIDSIZED/LARGE SUVs

<b>Lexus LX</b>	82	↑	↑	—		\$815
<b>Lexus GX</b>	81	↑	↑	—		\$1,170
<b>Lexus RX</b>	75	↑	↑	↑		\$620
<b>Lexus RX (hybrid)</b>	71	↑	↑	↑		\$655
<b>Lincoln Navigator</b>	68	↑	↑	—		\$765
<b>Mercedes-Benz M-Class</b>	68	↑	↑	—		\$1,395
<b>Acura MDX</b>	66	↑	↑	↓		\$1,060
<b>Buick Rendezvous</b>	65	↓	↓	—		\$255
<b>Volvo XC90</b>	63	↑	↑	↓		\$790
<b>Lincoln MKX</b>	60	↓	↓	—		\$260
<b>Cadillac Escalade</b>	56	↑	↑	—		\$1,480

#### PICKUP TRUCKS

<b>Honda Ridgeline</b>	77	↑	↓	↑		\$565
<b>Toyota Tundra</b>	70	↑	↓	↑		\$365
<b>Chevrolet Silverado 2500HD</b>	69	↑	↓	↑		\$450
<b>GMC Sierra 2500HD</b>	69	↑	↓	↑		\$375
<b>Chevrolet Avalanche</b>	69	↑	↑	↓		\$615
<b>Toyota Tacoma</b>	68	↓	↓	↑		\$285
<b>Ford F-150</b>	60	↓	↓	↓		\$405
<b>Dodge Ram 2500</b>	59	↓	↓	↓		\$505
<b>Chevrolet Silverado 1500</b>	56	↓	↓	↓		\$305
<b>GMC Sierra 1500</b>	56	↓	↓	↓		\$380
<b>Ford F-250</b>	55	↓	↓	—		\$695
<b>Nissan Frontier</b>	54	↓	↓	↓		\$385
<b>Ford Explorer Sport Trac</b>	52	↓	↓	↓		\$525
<b>Dodge Ram 1500</b>	51	↓	↓	↓		\$515
<b>Ford Ranger</b>	50	↓	↓	↑		\$245
<b>Nissan Titan</b>	42	↑	↓	—		\$380
<b>Chevrolet Colorado</b>	38	↓	↓	↓		\$270
<b>Dodge Dakota</b>	35	↓	↓	—		\$255

**HOW WE SURVEY:** Our 2016 auto satisfaction and auto reliability surveys, conducted by the Consumer Reports National Research Center, asked CR subscribers: "Considering all factors (price, performance, reliability, comfort, enjoyment, etc.), would you get this car if you had it to do all over again?"

A model's satisfaction score is based on the percentage of respondents who answered "definitely yes." Factor scores were determined based on the percentage of owners who said they were "very satisfied" with respect to these categories: Driving (including acceleration and handling) and Comfort

(including seats, climate control, noise, and ride). In our reliability survey, we asked owners to tell us about serious problems from the past 12 months to gauge the reliability of the model. We also asked how much they spent on maintenance and repair during the same period. The cost presented

here is the average reported cost for each model and year. For the two surveys, we received responses on more than 650,000 vehicles, spanning the 2000 through 2016 model years. To learn more about owner satisfaction and vehicle reliability, go to [CR.org/reliability](http://CR.org/reliability).

# Road Test

We conduct more than 50 tests on each vehicle at our 327-acre Auto Test Center. For complete road tests, go to [CR.org/cars](http://CR.org/cars).



## Geeked-Out Green Machine

*With its plug-in power and tablet-like center display, the Prius Prime is a hybrid tailor-made for gadget lovers.*

THE PRIUS PRIME is the ultimate Prius for drivers who want a fully electric vehicle for in-town trips but also the flexibility to take longer journeys without range anxiety. It can drive 22.5 miles on electric power when fully charged. Beyond that, it transitions to normal hybrid operation using its gasoline engine in combination with a battery-powered electric motor for an impressive 590 miles of total range. In hybrid mode, the Prime gets 50 mpg overall, 2 mpg less than the regular Prius.

The battery recharges in

5 hours on standard 120-volt power, eliminating the need for a garage-wall charger that can cost hundreds or more to install. On electric power, the Prime runs nearly silently and provides a quick initial takeoff, but fires up the engine when circumstances demand. Like the Prius, the Prime serves up a comfortable, steady ride and sound, reflexive handling.

The sci-fi-looking cabin is a mix of hard plastic and soft surfaces. On top trims, a large tablet-like touch screen hosts the controls for the audio system, trip information, phone, and navigation. The screen looks stunning but can be infuriating to use. Controls for such common tasks as changing radio stations are hidden, while navigation and phone controls are easy to see. The front seats are supportive, but the rear seats are designed for only two riders. Forward-collision warning and automatic emergency braking are standard across the line.

### COMPACT HYBRIDS

#### Toyota Prius Prime

OVERALL SCORE **73**

ROAD-TEST SCORE 74

#### HIGHS

Fuel economy, no range anxiety, standard advanced safety gear, tax incentives

#### LOWS

Complex infotainment screen, 4-seat only, shifter, less luggage space than Prius

#### POWERTRAIN

121-hp, 1.8-liter four-cylinder hybrid engine; continuously variable transmission; front-wheel drive

#### FUEL

133 MPGe<sup>†</sup>/50 mpg<sup>®</sup>

#### PRICE AS TESTED

\$29,889



## Shockingly Good

*A lot of power in a small package makes the Chevrolet Bolt a game-changer in the electric car market.*

IT USED TO BE that admirers of electric cars who wanted a 200-miles-plus range had to get in line for a Tesla and spend upward of \$70,000. The new Bolt changes all that.

At the heart of the Bolt is a large 60-kWh battery pack sitting under its floor, helping it to achieve a 250-mile cruising range in our tests. With pricing starting around \$37,000 (before tax incentives), it costs far less than any Tesla on sale today.

The Bolt is fun to drive, to boot. With 200 (electrified) horsepower, this hatchback accelerates from 0-60 mph

in just 6.8 seconds.

The Bolt's heavy, low-mounted battery allows the car to turn easily and with confidence. But be warned: The ride can get choppy on uneven pavement.

It takes a long time to charge that big battery. In our tests, it took 10 hours on a 240-volt connector to charge from empty. (There's an optional DC fast-charging capability that promises up to 90 miles of range with 30 minutes of charging.) Most drivers won't need that for daily use because of the Bolt's long range and easy nightly charging at home.

We're not fans of the front seats—the lack of support reminded us of a vinyl lawn chair. The gear selector moves in an unusual 7-shaped pattern, which makes it tricky to put the Bolt in Reverse.

Those minor complaints aside, if you ever thought about going electric, you'd be nuts not to consider the Bolt.

### COMPACT ELECTRICS

#### Chevrolet Bolt

OVERALL SCORE **70**

ROAD-TEST SCORE 76

#### HIGHS

Long range for an EV, acceleration, agility, quietness

#### LOWS

Charging times, brake-pedal feel, ride, seat comfort, gear selector

#### POWERTRAIN

200-hp electric; 1-speed direct drive; front-wheel drive

#### RANGE/CHARGE TIME

250 miles/10 hrs. to charge on 240 volts

#### PRICE AS TESTED

\$43,155



## No Hybrid Hero

*The Kia Niro will tempt the crossover crowd, but it lacks the fuel economy and driving dynamics to seal the deal.*

THANKS TO its high stance, conservative styling, and automatic transmission (rather than a CVT), the Niro is a genre-splitting hybrid that combines fuel economy with versatility. It has the same drivetrain as its sibling hybrid—the Hyundai Ioniq—but also some of its relative’s shortcomings.

When compared with wagons and small SUVs, the Niro’s 43 mpg overall is impressive. But it falls 9 mpg shy of the fuel-economy champs, the Toyota Prius and the Ioniq, because of its extra weight and height.

In the race to 60 mph,

the Niro tied the Ioniq at 9.9 seconds. It can suffer from a delay when accelerating from a complete stop. And any attempt to rush it is punctuated by a noisy transition from electric drive to gasoline engine.

The Niro shares the Ioniq’s handling traits: Both were unimpressive in our avoidance maneuver. The Niro’s ride can get choppy, and braking performance is mediocre.

The mostly basic interior features a few nice touches. The manual cloth-and-leather front seats look attractive, but they’re not that comfortable, in part because they lack any lumbar adjustment. The driving position is roomy and upright like a small SUV, and the rear seat offers ample space and soft cushions.

The controls and 7-inch infotainment system are a breeze to use. Forward-collision warning and automatic emergency braking are optional, but only on mid- and upper-level trims.

### COMPACT HYBRIDS

#### Kia Niro

OVERALL SCORE **65**

ROAD-TEST SCORE **65**

#### HIGHS

Fuel economy, cargo versatility, controls

#### LOWS

Braking, agility, hesitation off the line, front-seat comfort, ride

#### POWERTRAIN

139-hp, 1.6-liter four-cylinder hybrid engine; 6-speed dual-clutch automatic transmission; front-wheel drive

#### FUEL

43 mpg

#### PRICE AS TESTED

\$26,805



## Going the Distance

*The Hyundai Ioniq is in the race to be the best hybrid. But its poor braking and mundane driving experience keep it from being a contender.*

THE IONIQ is the latest challenger to the Toyota Prius, the revolutionary hybrid that remains unrivaled for its combination of fuel economy, practicality, and reliability. The Ioniq hybrid version can drive briefly on electric power alone. (A full electric model is currently sold only in California, and a plug-in hybrid is coming this fall.)

The Ioniq matches the Prius with a stunning 52 mpg overall. And like the Prius, it has an aerodynamic and versatile hatchback design.

But the Ioniq is no joy to

drive. Its dual-clutch automatic transmission elicits less engine noise than the continuously variable transmissions found in many hybrids, but the shifts could be smoother. In addition, the Ioniq is hesitant to accelerate.

Its handling borders on clumsy, requiring more steering input than its peers when making turns. The ride isn’t as comfortable as in the Prius, either. Unusually long braking distances, especially on wet surfaces, hurt the Ioniq’s road-test score. Also, we’d feel better if the car came standard with automatic emergency braking, but this feature is available only on the top two trims.

The straightforward controls are user-friendly. Our midlevel SEL came with a fully powered driver’s seat, including two-way lumbar support adjustment. The rear seat is a bit snug on headroom, and the two-piece back window reduces visibility.

### COMPACT HYBRIDS

#### Hyundai Ioniq

OVERALL SCORE **66**

ROAD-TEST SCORE **67**

#### HIGHS

Fuel economy, hatchback versatility, controls

#### LOWS

Braking, agility, hesitation off the line, no rear wiper

#### POWERTRAIN

139-hp, 1.6-liter four-cylinder hybrid engine; 6-speed dual-clutch automatic transmission; front-wheel drive

#### FUEL

52 mpg

#### PRICE AS TESTED

\$25,035

**Ratings** ➤ **Electrified Cars** To maximize energy efficiency, these cars run on pure electricity or are hybrids that combine a gasoline engine with an electric drive and battery.



	Make & Model	Price	Overall Score	Survey Results		Safety	Road-Test Results													
Recommended		As Tested		Predicted Reliability	Owner Satisfaction	Front-Crash Prevention	Road-Test Score	Efficiency			Acceleration, 0-60 MPH, Sec.	Dry Braking, 60-0 MPH, Ft.	Avoidance-Maneuver Speed, MPH	Routine Handling	Ride	Noise	Seat Comfort, Front/Rear	Controls	Luggage, Suitcases+Duffels	
								MPG While Running on Gas Engine	MPG Equivalent (MPGe)											
COMPACT ELECTRIC CARS AND HYBRIDS																				
✓	Toyota Prius Three	\$27,323	77	✓	✓	Std./✓	75	52	—	10.3	135	53.5	✓	✓	✓	✓ / ✓	✓	2+2		
✓	Ford C-Max Hybrid SE	\$26,685	73	✓	✓	NA	77	37	—	8.4	138	53.0	✓	✓	✓	✓ / ✓	✓	3+0		
✓	Toyota Prius Prime Premium	\$29,889	73	✓	✓	Std./✓	74	50	133	10.8	139	55.0	✓	✓	✓	✓ / ✓	✓	2+0		
✓	Ford C-Max Energi	\$34,940	73	✓	✓	NA	77	37	94	8.1	136	50.5	✓	✓	✓	✓ / ✓	✓	1+1		
✓	Toyota Prius V Three	\$28,217	71	✓	✓	Opt.	73	41	—	10.7	138	55.0	✓	✓	✓	✓ / ✓	✓	3+1		
✓	BMW i3 Giga REx	\$50,450	71	✓	✓	Opt.	79	29	139	7.5	131	55.0	✓	✓	✓	✓ / ✓	✓	1+1		
✓	Chevrolet Bolt Premier	\$43,155	70	✓	✓	Opt.	76	—	119	6.8	138	53.0	✓	✓	✓	✓ / ✓	✓	2+0		
	Hyundai Ioniq SEL	\$25,035	66	✓	✓	Opt.	67	52	—	9.9	144	51.5	✓	✓	✓	✓ / ✓	✓	3+0		
	Kia Niro EX	\$26,805	65	✓	✓	Opt.	65	43	—	9.9	143	51.0	✓	✓	✓	✓ / ✓	✓	2+2		
	Toyota Prius C Two	\$20,850	63	✓	✓	Std./✓	55	43	—	11.3	135	51.5	✓	✓	✓	✓ / ✓	✓	1+1		
	Nissan Leaf S	\$29,860	62	✓	✓	NA	71	—	106	10.3	136	52.5	✓	✓	✓	✓ / ✓	✓	2+1		
	Chevrolet Volt LT	\$35,890	54	✓	✓	Opt.	70	38	105	8.0	133	52.5	✓	✓	✓	✓ / ✓	✓	2+0		
	Ford Focus Electric	\$40,990	52	✓	✓	NA	76	—	107	10.2	140	52.5	✓	✓	✓	✓ / ✓	✓	1+1		
	Mitsubishi i-MiEV SE	\$33,630	44	✓	✓	NA	35	—	111	14.7	132	52.0	✓	✓	✓	✓ / ✓	✓	1+1		

**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 1 to 3 based on how many of

these features are standard. We now deduct points from the Overall Score if a vehicle's shifter is confusing, lacks fail-safes, or is difficult to operate. For full ratings, go to [CR.org/cars](https://www.consumerreports.org/cars).

## Green Machines That Will Save You Greenbacks

Buy a fuel-efficient car today and save big tomorrow.

WITH GAS PRICES around the lowest they've been in years, shoppers have turned away from small and fuel-efficient cars in favor of big SUVs and trucks. But low sales lead to big incentives, which means a buyer who takes the long view (when gas prices rise again) can get a real steal right now on a

fuel-efficient car. "Prices are currently low, primarily thanks to a surplus in oil supply," says Patrick DeHaan, senior petroleum analyst for the GasBuddy website. He says that significant increases in U.S. shale-oil production, OPEC's reluctance to cut output, and a weakening overall

global demand helped create the glut.

Still, we live in a volatile world, and recent history has shown the potential for significant swings in gasoline pricing.

Despite that reality, DeHaan says his current forecast for gas prices follows a "lower for longer" model, with no significant increases

expected until mid-2018 or later. This promises to keep the market for SUVs red-hot, but it can also mean a buying opportunity for higher-mpg cars.

Looking at the most fuel-efficient cars among CR's ratings, we find many selling at significant discounts off their sticker price, with savings in the

thousands of dollars. With these cars, you can save today and gain protection from potential (and likely) future gasoline price increases within the typical ownership period for a new car.

For a full list of recommended fuel-efficient cars and SUVs, go to [CR.org/fuel](https://www.consumerreports.org/fuel). —Nick Kurczewski



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Submitted by Fred Noemer of Sarasota, Fla.



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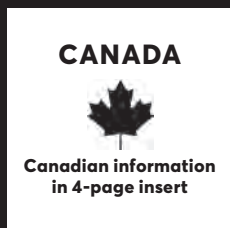
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➤ **EVERY MONTH**, Canada Extra provides Canadian pricing and availability information about products tested for that issue. The ratings in this section are based on this month's reports, but they narrow your choices to the products that are sold in Canada.

You can use this section in either of two ways: Start with the main report, read about the products that interest you, and turn to this section to find whether they're sold—and for what price—in Canada. Or

start here, find products sold in Canada whose price and overall score appear promising, and read more about them in the main report and full ratings chart; page numbers appear with each Canadian report. (For some products, the Canadian model designation differs slightly from the one used in the U.S.)

In most cases, the prices we list here are the approximate retail in Canadian dollars; manufacturers' list prices are indicated by an asterisk (\*). The symbols shown at right

identify CR Best Buys or recommended products in the U.S. ratings. "NA" in a chart means that information wasn't available from the manufacturer. We include, in the Contact Info list on page 34d, the manufacturer's web address in Canada so that you can go online to get information on a model you can't find in the stores. (Many products that aren't available in Canadian stores can be bought online.)

We appreciate your support, but we don't take it

for granted. Please write to [CanadaExtra@cu.consumer.org](mailto:CanadaExtra@cu.consumer.org) and tell us what you think. We can't reply to every email or implement every suggestion, but with your help we'll try to keep growing to serve your needs.

### **CR Best Buy**

Recommended models that offer the best combination of performance and price.




### **Recommended**

Models that perform well and stand out for reasons we note.

## Desktops

Three of the tested desktops are available. All are recommended models.

**Report and ratings, pages 8-15**

		Brand & Model	Price	Overall Score
Rec.	Rank			
ALL-IN-ONE				
	3	<b>Microsoft</b> Surface Studio	\$4,000	<b>85</b>
	11	<b>HP</b> Pavilion 24-b230	\$1,200	<b>76</b>
	13	<b>HP</b> Pavilion 27-a230	\$1,400	<b>75</b>



# Laptops

Seven of the tested laptops are available. All are recommended models. **Report and ratings, pages 8-15**

		Brand & Model	Price	Overall Score
Rec.	Rank			
12- TO 13-INCH				
✓	6	Dell XPS 13 Convertible	\$2,000	75
✓	9	Apple MacBook Pro 13-inch MLL42LL/A	\$1,900	73
14-INCH				
✓	1	Lenovo Yoga 910	\$1,700	78
15- TO 16-INCH				
✓	1	Samsung Notebook 9	\$1,830	77
\$	2	Lenovo Yoga 720-15IKB	\$1,600	76
✓	4	Apple MacBook Pro 15-inch with Retina Display MJLQ2LL/A	\$2,450	74
\$	6	Samsung Notebook 9 NP900X5L-K02US	\$1,830	73



## RECALLS

### 2004 Mazda RX-8 models

On certain vehicles, the ball joint socket area on the front lower control arm may become cracked. If a large load is applied to the suspension while driving, the ball joint may suddenly separate from the socket, which could result in a loss of steering control. **NUMBER** 3,004 vehicles.

**WHAT TO DO** Have the dealer replace the lower control arms with modified parts.

### 2004-2008 Mazda RX-8 models

On certain vehicles, the fuel pump discharge pipe may crack and cause a fuel leak that could result in a fire.

**NUMBER** 6,788 vehicles.

**WHAT TO DO** Have the dealer replace the fuel filter body with an improved part.

### 2010-2012 Porsche models

On certain vehicles, the fasteners of the camshaft adjusters could fail, resulting in abnormal engine noises, vibrations, and illumination of the check engine light, and possibly causing the vehicle to stall.

**NUMBER** 1,823 2010-2012 Panamera 4, 4S, S, and Turbo, and 2011-2012 Cayenne S and Turbo vehicles.

**WHAT TO DO** Have the dealer replace the fastening screws of the camshaft adjusters, and if necessary, replace the camshaft adjuster assemblies.

### 2011 Ford Fiesta models

In certain vehicles registered and operated in areas where road salt is used on the roadways during winter months for extended time periods (New Brunswick, Newfoundland-Labrador, Nova

Scotia, Ontario, Prince Edward Island, and Quebec), moisture containing road salt could enter the battery junction box, resulting in corrosion and potentially causing the vehicle to stall without the ability to restart. This could also affect the exterior lighting, which would decrease vehicle conspicuity. **NUMBER** 11,899 vehicles.

**WHAT TO DO** Have the dealer perform an inspection, clean off any corrosion on the terminals, and replace any defective fuses. Seals will also be installed in the battery junction box to prevent future moisture entry.

# Printers

Twelve of the tested printers are available. All are recommended models. **Report and ratings, pages 8-15**

		Brand & Model	Price	Overall Score
Rec.	Rank			
ALL-IN-ONE INKJET				
\$	1	Epson Expression Premium XP-640	\$150	74
\$	2	Epson Expression Premium XP-830	\$200	74
\$	3	HP Envy 7640	\$200	71
\$	5	Brother MFC-J680DW	\$160	70
\$	6	Canon Pixma MX532	\$130	70
\$	7	Epson Workforce Pro WF-4630	\$300	70
✓	8	HP OfficeJet 250 Mobile	\$300	69
✓	9	Epson Workforce Pro WF-6530	\$500	69
✓	10	Epson Expression Photo XP-960	\$300	68
ALL-IN-ONE BLACK AND WHITE LASER				
✓	1	Dell S2815dn	\$480	77
✓	2	Dell H815dw	\$500	77
✓	4	Canon ImageClass MF249dw	\$330	76



**2011-2012 Dodge Grand Caravan models**  
On certain vehicles, an electrical short could occur in the steering wheel wiring harness, which could result in an inadvertent deployment of the driver frontal airbag.  
**NUMBER** 86,544 vehicles.  
**WHAT TO DO** Have the dealer inspect the steering wheel wiring and replace it as necessary. A protective covering will also be installed on the wiring harness.

**2013-2017 Hyundai models**  
On certain vehicles, the cable between the actuating lever and the secondary latch may become corroded. Potentially, the secondary hood latch may not hold the hood closed while the vehicle is in motion.  
**NUMBER** 128,865 Santa Fe and Santa Fe Sport models.  
**WHAT TO DO** Have the dealer replace the secondary hood latch cable.

**2015-2016 Hyundai Genesis models**  
On certain vehicles equipped with a manual parking brake, the parking brake warning light intermittently may not illuminate, resulting in a driver misapplication of the parking brake. That could cause the following conditions: effect on vehicle acceleration, parking brake noise and/or parking brake "drag," and smoke and/or smell from driving with the applied parking brake.  
**NUMBER** 11,987 vehicles.

**WHAT TO DO** Have the dealer replace the parking brake switch with a switch that has revised contact material.

**2016 Toyota Tacoma models**  
On certain vehicles equipped with a V6 engine, the crankshaft rotor may have an anti-corrosion coating that is too thick, interfering with the crank position sensor and potentially causing the vehicle to stall.  
**NUMBER** 2,398 vehicles.  
**WHAT TO DO** Have the dealer replace the crank position sensor with one of an improved design.

# Autos

All of the tested vehicles are available in Canada. **Report and ratings, pages 62-64**

Make & Model	Price Range	Acceleration (Sec.)				Fuel Economy (Liters per 100 km)			Electric Efficiency (Liters per 100 km)		
		0-50 km/h	0-100 km/h	80-100 km/h	500 Meters	City Driving	Highway Driving	Overall	City Driving	Highway Driving	Overall
Compact Electric Cars and Hybrids											
Toyota Prius Prime	\$32,990–\$38,565	3.8	11.5	4.5	20.8	6.2	3.8	4.7	1.8	1.8	1.8
Chevrolet Bolt	\$43,095–\$48,095	3.1	7.2	2.3	17.7	—	—	—	1.8	2.1	2.0
Hyundai Ioniq	\$24,299–\$41,849	3.7	10.4	4.3	20.1	5.6	3.9	4.6	—	—	—
Kia Niro	\$24,995–\$32,995	3.8	10.5	4.6	20.3	7.1	4.5	5.5	—	—	—

**TOYOTA PRIUS PRIME**  
PRICE AS TESTED  
\$29,889 (U.S.)

**73**  
OVERALL  
SCORE



**CHEVROLET BOLT**  
PRICE AS TESTED  
\$43,155 (U.S.)

**70**  
OVERALL  
SCORE



**HYUNDAI IONIQ**  
PRICE AS TESTED  
\$25,035 (U.S.)

**66**  
OVERALL  
SCORE



**KIA NIRO**  
PRICE AS TESTED  
\$26,805 (U.S.)

**65**  
OVERALL  
SCORE



## Contact Info

How to reach manufacturers in Canada.

**Apple**  
[apple.com/ca](http://apple.com/ca)

**Brother**  
[brother.ca](http://brother.ca)

**Canon**  
[canon.ca](http://canon.ca)

**Dell**  
[dell.com/en-ca](http://dell.com/en-ca)

**Epson**  
[epson.ca](http://epson.ca)

**HP**  
[www8.hp.com/ca/en](http://www8.hp.com/ca/en)

**Lenovo**  
[www3.lenovo.com/ca/en](http://www3.lenovo.com/ca/en)

**Microsoft**  
[microsoft.com/en-ca](http://microsoft.com/en-ca)

**Samsung**  
[samsung.com/ca](http://samsung.com/ca)