

BEST & WORST SUNSCREENS

CR Consumer Reports™

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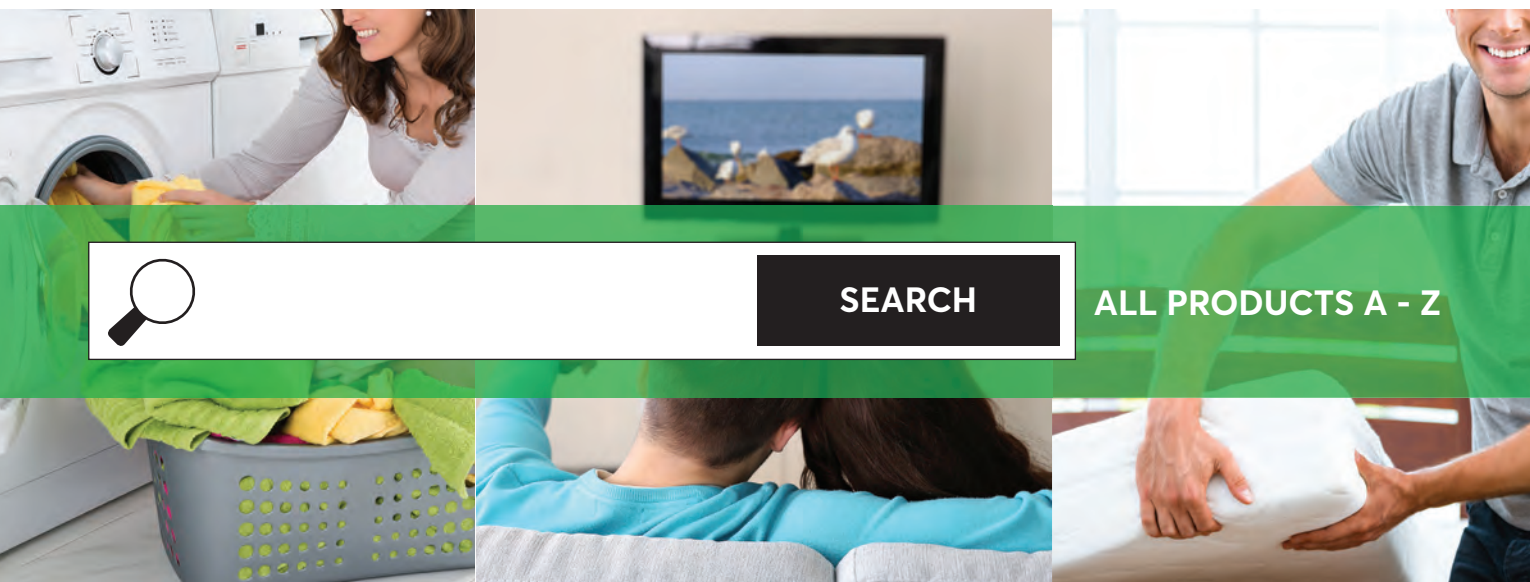
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ABOUT CONSUMER REPORTS

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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



When Hidden Algorithms Lead to Higher Prices

WE LIVE in an age when prices for an ever-growing list of products and services are set by plugging personal information about ourselves into complex algorithms. For example, health insurance costs fluctuate with our age, and airline tickets can get pricier based on our browsing history. Although there is nothing inherently wrong with customizing costs based on factors that are truly relevant, data-driven pricing is a rapidly expanding part of our lives that offers little transparency—and one that can often carry hidden biases.

In the past, CR investigations into the car insurance industry turned up evidence that insurers frequently set rates based on pieces of personal information that have nothing to do with driving risk—including credit scores and occupations. This month we're publishing the results of a new investigation, conducted with the nonprofit journalism organization ProPublica, that raises even more red flags about the factors that go into—and the prices that come out of—the opaque formulas that determine our insurance premiums. For more than a year our statisticians have examined reams of data

points across four states. What we uncovered was disturbing: We found that some insurers were charging higher rates in minority neighborhoods than in whiter neighborhoods with similar average levels of accident-related costs. (See our article, "A World Apart," on page 52.)

When drivers in minority neighborhoods are forced to pay higher premiums, the ripple effects can be devastating—family budgets drain more quickly, employment opportunities are hindered, and communities are restrained from growth. As more and more of the costs of living become entangled with algorithms, Consumer Reports is committed to dissecting the data and shining a light on hidden issues that affect consumers, wherever they arise—so that we can work to ensure that our shared values of fairness and transparency are what are shaping the marketplace as it evolves in the digital age.

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More Safety at the Wheel

WHAT'S AT STAKE

Vehicle-to-vehicle, or V2V, technology allows cars to communicate with each other wirelessly, an advancement that has the potential to boost automotive safety significantly. It gives them the ability to broadcast a stream of information including speed, location, and braking. The goal is to help avoid accidents. (See our April 2017 magazine feature, "Driving Into the Future," also at [CR.org/selfdrivingcars](https://www.consumersunion.org/selfdrivingcars).)

Federal safety regulators recently proposed that all new cars be equipped with V2V capabilities. Our auto engineers and consumer advocates have since filed comments with the National Highway Traffic Safety Administration urging the government to move forward on a mandatory standard. But that standard needs to allow for continued innovation and enhancement of the safety system.

CR is also asking for consumer protections for the privacy and security of drivers' data. You deserve to know what information your car is transmitting and who has access to it. We'll keep you posted on our progress.

WHAT YOU CAN DO

Go to [CR.org/V2Vsafety](https://www.consumersunion.org/V2Vsafety) to learn more about this potentially lifesaving technology.

Ending Tip-Over Dangers

WHAT'S AT STAKE

Three children are injured every hour by a TV, an appliance, or furniture falling on them, according to estimates from the Consumer Product Safety Commission.

For years, CR has reported on the dangers of unanchored

furniture; the impact force of a piece of furniture can be thousands of pounds. We've long encouraged consumers to check for tip-over hazards in their home, to install anchor devices on heavy items like bookcases and dressers, and to never leave remote controls and other tempting items in high places that young kids might climb to reach.

CR and other groups have been pushing for action. Last year Ikea and the CPSC jointly announced a recall of several chest and dresser models that involved 29 million units. Tip-over incidents involving these products resulted in the death of at least four children.

We're now pressing to strengthen the furniture industry's voluntary safety standard for chests, dressers, and other items, and calling on manufacturers to take more meaningful actions

to improve the stability of their products. But we haven't seen the kind of urgency and industry-wide accountability that consumers need. That's why we plan to ratchet up our efforts aimed at companies and policymakers in the coming months.

WHAT YOU CAN DO

If you've had a tip-over accident in your home, let us know at [ConsumersUnion.org/share-your-story](https://www.consumersunion.org/share-your-story). And learn how to prevent them at [anchorit.gov](https://www.anchorit.gov).

Affordable Hearing Aids

WHAT'S AT STAKE

Hearing aids can make a profound difference in a person's quality of life. But according to a 2015 survey of our subscribers, about 70 percent of adults who need them put off the purchase

for two years or longer, most often because of the high cost.

A group of bipartisan lawmakers in Congress recently sponsored the Over-the-Counter Hearing Aid Act. It's aimed at making easy-to-use, prescription-quality hearing aids available to adults with mild to moderate hearing loss. These devices would be available for purchase without a medical exam, giving consumers more cost-effective options.

Only hearing-aid look-alike devices are available without a prescription. Referred to as "sound amplifiers," they're not regulated, might not provide much benefit, and could possibly cause additional hearing damage. The Food and Drug Administration doesn't even allow the products to be marketed for improving impaired hearing.

The legislation is sponsored by Senators Elizabeth Warren (D-Mass.), Chuck Grassley (R-Iowa), Maggie Hassan (D-N.H.), and Johnny Isakson (R-Ga.).

A companion bill has been introduced in the House by Reps. Joe Kennedy III (D-Mass.), and Marsha Blackburn (R-Tenn.).

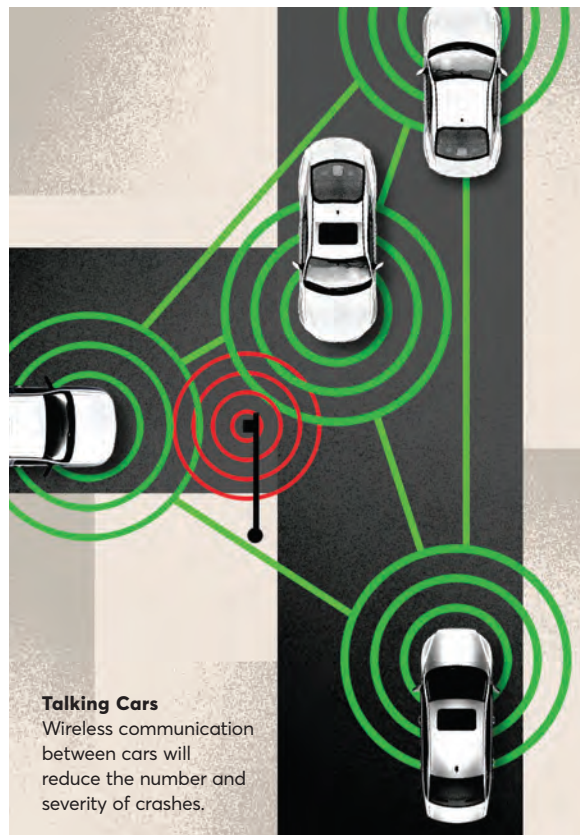
"If you can buy non-prescription reading glasses over the counter, you should be able to buy basic, safe hearing aids, too," Grassley says.

Hearing aids aren't covered by Medicare or most private insurance plans, and out-of-pocket costs for a single device average \$2,700.

WHAT YOU CAN DO

CR supports this legislation, and our consumer advocates are urging members of Congress to join the bipartisan group that backs it. Reach out to your lawmakers at [senate.gov](https://www.senate.gov) and [house.gov](https://www.house.gov) to urge them to support the bill.

As for the current marketplace, see our article "No More Suffering in Silence?" in the March 2017 issue of the magazine, or go to [CR.org/hearingaid](https://www.consumersunion.org/hearingaid) to find out what you should know before buying a hearing device.



Talking Cars

Wireless communication between cars will reduce the number and severity of crashes.



The High Cost of For-Profit Air Ambulances

The average air-ambulance bill exceeds \$30,000, most of which is often not covered by insurance. Our May article “Taking Patients for a Ride” reported on the financial impact these surprise bills have on patients, as well as the questionable use of emergency air transport and the lack of industry oversight. Join the conversation at [CR.org/airambulances0717](https://www.consumerreports.org/airambulances0717).

I’VE WORKED in the EMS field for many years, both at the state level and as a local provider. Your article on the for-profit air-ambulance industry brings out the uglier side of some emergency air transports. When I’ve had to make the difficult decision to call a helicopter to transport a patient, I’ve also thought of the financial liability that their family will face. There are EMS providers who make the decision way too easily. There need to be better and more stringent regulations placed on air

medical providers at the state level. There will always be a need for air ambulances. The question remains how they can be regulated and still pay their bills at the end of the day.

—Keith Smith, via CR.org

I HAVE HAD DECADES working in and around this industry. I’ve known helicopter companies that market to first responders with free rides, coffee mugs, BBQ dinners, and “free education” with the constant message: “Call us.” Providers and dispatchers often do call them before anyone has even assessed the patient. I look forward to seeing this practice shut down on a national level.

—Herb Brady, via CR.org

I AM A FORMER paramedic who has been involved in

EMS for more than 30 years. Air ambulances do not decide which patients are transported. That decision is made by physicians at local hospitals and by EMS first responders making good faith decisions during an emergency situation. You only told one side of the story. And when it comes to “surprise medical bills,” you fail to point the finger in the proper direction. Why did Blue Cross only pay \$5,700 of Ms. Stout’s \$24,000 bill? In most states, insurance companies are required to pay a fair market rate for emergency services, whether they are in network or not. Why did you not encourage Ms. Stout and others caught in her situation to file a complaint with their state insurance commission, then find an attorney to sue the insurance

company—not the people who were acting in good faith to save their lives.

—Bill Bryant, president, Sierra Health Group, Golden, CO

EDITOR’S NOTE The letter writer works for a firm that provides consulting services to air-ambulance companies. Our article did advise people in this situation to file a complaint with their state insurance commissioner. Though current federal law prevents states from regulating air-ambulance pricing, state insurance commissioners support proposed federal legislation to give states more power to protect consumers from excessive air-ambulance bills. The Stout family filed several appeals with their insurer and hired a lawyer. They are pursuing a class action.

Heart Health

CONSUMER REPORTS HAS always been about empowering consumers to take charge of their lives and improve their well-being (“Take Charge of Your Heart Health,” May 2017). Nowhere is this mission more important than when it comes to empowering people to take charge of their health. No other single issue can do more to help people and, as a



WRITE

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

byproduct, help to reduce our national healthcare bill. Thank you, CR. I don't know what I'd do without you!

—Ken Derow, Swarthmore, PA

I WAS SURPRISED that your article did not have a comment about taking aspirin to prevent heart disease. There are millions of people in the country who take aspirin for that purpose. You never mention whether aspirin is useful, a waste of time, or not worth the risk of GI bleeds.

—Lewis Greenwald, Efland, NC

EDITOR'S NOTE *There's no one-size-fits-all answer because the decision involves balancing your risk of having a heart attack against your risk of developing bleeding in your intestinal tract. "In general, people who've had a heart attack should take a low-dose aspirin since they are at much higher risk of having a repeat attack," says Marvin M. Lipman, M.D., Consumer Reports' chief medical adviser. And the U.S. Preventive Services Task Force says that people in their 50s who have a 10 percent or greater risk of having a heart attack or stroke in the next 10 years should take a low-dose aspirin.*

The evidence is less clear for people in their 60s, and it's even more uncertain for those 70 and older, mainly because the risk of gastrointestinal bleeding increases substantially as you grow older. Always talk with your doctor before taking aspirin to protect your heart.

YOUR REVIEW of hospitals is interesting, but unless you know who each hospital worked on and how bad their problems were, then you are committing a logical fallacy called Simpson's paradox, caused by missing variables. Hospitals rated good may only have had easy patients. Hospitals rated bad may have specialized in tough cases the others would not try to help. So while your data is a nice indicator, it is far from conclusive. Consumers should look deeper at all the pertinent facts before jumping to choose a hospital based on such data as CR provided.

—William Adams, Ph.D., Roanoke, VA

EDITOR'S NOTE *Consumer Reports and our data partner, the Society of Thoracic Surgeons, agree that the concerns raised by the letter writer can be important. For that reason, the data are adjusted to account for the patient case mix—including factors such as the health of the patients when they enter the hospital. In addition, Simpson's paradox is unlikely to apply to our ratings, for two reasons. One, research shows that it is more common for procedures with higher death rates than in the operations included in our heart ratings. And our ratings focus on procedures for which there is less variation in the proportion of very high or very low risk patients among hospitals. Though no approach is perfect, the methods have been endorsed by the National Quality Forum, which means they have passed the most stringent national requirements for healthcare performance measures.*

Mowers powered by human energy not only provide exercise but also don't pollute the planet.

Mighty Mowers

YOUR STORY on electric lawn mowers naively asks, "Why wouldn't you go electric?" How about the fact that the lithium-ion batteries that power them have caused fires and explosions in hoverboards, laptop computers, tablets, e-cigarettes, etc.?

—Richard Siegelman, Plainview, NY

EDITOR'S NOTE *After reports of exploding lithium-ion batteries, it's reasonable to be concerned. But our engineers say there's one important difference: A number of the batteries used in products such as some hoverboards were never subjected to third-party testing from labs like UL, and therefore weren't guaranteed to conform to safety standards. Lawn mowers generally come from established companies that subject their products to this kind of testing.*

IN THE MAY 2017 ISSUE, there is an article on lawn mowers as well as a report about heart health. Given the latter, I was disappointed to see that the article on lawn mowers excluded any consideration of the type of mower that provides valuable exercise, thus offering an opportunity

to improve one's "heart health" (lungs, too—possibly legs as well). Similarly, you neglected to mention a mower that decreases the threats to health by eliminating exposure to both exhaust fumes and noise pollution. The only mower that provides exercise while *not* polluting is the push reel mower, powered by human energy.

—Susan Hogg, Newport, OR

EDITOR'S NOTE *Kudos to those who do manual labor! We have tested reel mowers in the past and offer general information in our online mower Buying Guide, which you can find at CR.org/mowers0717. Our engineers caution that reel mowers are best for small, flat lawns (1/8 of an acre or smaller). Reel mowers also require you to mow frequently so that your grass never gets too tall.*

IT IS NOT CLEAR if the 10-year cost comparison between gas and electric mowers in your story includes the cost of replacing the battery. Can the original battery be expected to last 10 years?

—Aurelia Hidalgo, via CR.org

EDITOR'S NOTE *This cost comparison doesn't include the cost of a replacement battery or any repairs you might have to make for a gas mower because both are unpredictable. In our latest reliability survey, 16 to 35 percent of self-propelled gas mowers are estimated to experience a breakage by the fourth year of ownership, depending on the brand. For gas push mowers that range is 14 to 25 percent, but it's only 4 to 17 percent for battery-powered electric mowers. So, in general, electric mowers are more reliable than gas models. But whether you can expect the battery to last 10 years is a question we haven't tested. The longest battery warranty we are aware of is five years, and industry experts claim that you might be able to get up to twice that time.*

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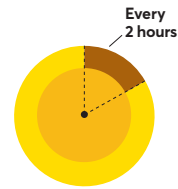
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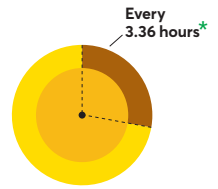
Product Updates

The latest ratings from our labs

TIME IT RIGHT



HOW OFTEN YOU SHOULD REAPPLY SUNSCREEN



HOW OFTEN PEOPLE USUALLY WAIT TO REAPPLY IT

Don't Get Burned!

Which sunscreens work, which fall short—and why you can't always rely on packaging labels.

by Trisha Calvo



LA ROCHE-
POSAY
ANTHELIOS
MELT-IN
SUNSCREEN
MILK SPF 60
\$36

100

OVERALL
SCORE

TRADER JOE'S
SPRAY SPF 50+
\$6

100

OVERALL
SCORE

EQUATE SPORT
LOTION SPF 50
\$5

99

OVERALL
SCORE

PURE SUN
DEFENSE DISNEY
FROZEN
LOTION SPF 50
\$6

98

OVERALL
SCORE

BANANA BOAT
SUNCOMFORT
CLEAR
ULTRAMIST
SPRAY SPF 50+
\$10

97

OVERALL
SCORE

*Of people who reapply sunscreen, according to a Consumer Reports National Research Center survey of 661 sunscreen users.

➤ **IF YOU THINK** all sunscreens touting high SPF's—like those with 50s on their labels, for example—are equally effective, here's a surprise: Consumer Reports has found that those SPF numbers aren't always a reliable measure of how much protection you'll get. If you put too much faith in them, you could be putting your skin at risk.

SPF, which stands for sun protection factor, is a measure of how well a sunscreen guards against ultraviolet B (UVB) rays, the chief cause of sunburn and a contributor to cancer. For the fifth year in a row, CR's testing has shown that some sunscreens fail to provide the level of protection promised on the package. Of the 58 lotions, sprays, and sticks in our ratings this year, 20 tested at less than half their labeled SPF number.

And CR isn't the only independent consumer organization that has found this discrepancy. Other members of International Consumer Research and Testing (a global group of consumer organizations) in Australia, New Zealand, and the U.K. have also found differences between the labeled SPF and the tested SPF in sunscreens on the market in those countries.

The ABCs of SPF

Sunscreens are classified as over-the-counter drugs. The Food and Drug Administration requires manufacturers to have their products tested to determine the SPF. But the agency doesn't routinely test sunscreens itself. Manufacturers don't have to report their results, although they do have to submit them to the FDA if the agency requests them.

At a public meeting last June, an FDA official said the agency had the resources for only about 30 employees to cover more than 100,000 over-the-counter drugs. That limits what it can do to oversee sunscreens.

"Most of the time, a sunscreen's effectiveness has been verified only by the manufacturer and any testing lab it might decide to use—and not by the government," says William Wallace,

Think Twice About 'Naturals'

Our tests found subpar performance by sunscreens with only titanium dioxide or zinc oxide as the active ingredient.

IN PAST YEARS, we've had disappointing results when testing "natural" sunscreens (also called mineral sunscreens), those with only titanium dioxide or zinc oxide (or both) as UV filters. We haven't been able to find a mineral product that delivers the whole package: top-notch UVA and UVB protection as well as minimal variation from SPF. This year we added more mineral sunscreens to our tests and included products with higher concentrations of the active ingredients than we did before.

According to the Personal Care Products Council, there's no performance difference between chemical and mineral active ingredients. But CR's testing has found that sunscreens with chemical active ingredients tend to protect skin better. Of the 13 mineral sunscreens in our tests, just one received an Excellent rating for variation from SPF. Eleven received Fair or Poor scores for UVB (SPF) protection. Five had Excellent scores for UVA protection, but none of these rated higher than Fair for UVB protection.

The "natural" sunscreen that ranked highest in our ratings was California Kids #Supersensitive Lotion SPF 30+. It has an overall Good rating, a Very Good score for UVB protection, and an Excellent variation from SPF rating. But it rated only Fair for UVA protection. If you want to use a natural sunscreen, consider this one.

an analyst for Consumers Union, the policy and mobilization arm of Consumer Reports.

Manufacturers test sunscreens for SPF before their products hit the market, but unless they are reformulated, that may be the only testing they do. That's one reason CR tests sunscreens.

We use the FDA's sunscreen testing protocol as a model, but as with all products, we do our own scientific, laboratory-based testing to identify differences in performance and give consumers a comparative evaluation. Every sunscreen is tested at a lab in the same way. "We buy sunscreens off the shelf, the way consumers would," says Susan Booth, the project leader for our sunscreen testing. "We use three samples, preferably with different lot numbers, of each product."

With some sunscreens, even though our tested SPF varied from the labeled SPF, the product still provides acceptable UVB protection. For example, Coppertone Ultra Guard Lotion SPF 70 received a Very Good score for variation from SPF in our tests. That means it tested within 70 to 84 percent of the labeled SPF, coming in at an SPF over 49 in this case. That got the product an Excellent rating for UVB protection and a recommended designation. (See pages 11 and 12 for more on our testing and ratings.)

But with other products, missing the mark could mean that you're not adequately shielding your skin. An SPF 50, say, that tests at less than half its labeled SPF delivers an SPF 24 at the most, and sometimes far less. (The American Academy of Dermatology recommends using a product with an SPF of 30 or more.)

For example, in our tests, Coppertone Sport High Performance Spray SPF 30 earned a Poor rating for variation from its SPF because the tested SPF was less than half the value listed on the label. We also rated it Fair for UVB protection because the tested SPF was between 10 and 19.

But other Coppertone sunscreens received high scores for variation from SPF and for UVB protection, which illustrates why you can't always choose by brand.

Beth Jonas, Ph.D., chief scientist at the Personal Care Products Council, a trade association that represents the sunscreen industry, said that it disagreed with our findings. She noted that our test methods aren't the same as required by the product manufacturers to assign the SPF designation, and can't be directly compared with a label claim.

Why UVA and UVB Matter

A sunscreen's SPF is only one gauge of the protection it provides. Equally important is broad-spectrum coverage, or how a product shields your skin from UVA rays as well as UVB. With their longer wavelength, UVA rays reach the middle layer of the skin (the dermis), damaging cells and triggering changes that can lead to skin cancer, broken blood vessels, sagging, and wrinkling. Most of the sun's radiation is in the

SUNSCREEN FOR DARKER SKIN

People of color have some natural protection against UV rays. How much depends on the amount of the pigment melanin in their skin. But they are still susceptible to sunburn and skin cancer, so experts stress that sunscreen is a must, for every skin tone.

form of UVA. Unlike UVB rays, which are strongest from 10 a.m. to 4 p.m., UVA rays are present throughout the daylight hours, even on cloudy days.

There's no labeling system in the U.S. that indicates a sunscreen's level of UVA protection. And the test the FDA requires manufacturers to do if they want to label their sunscreen broad-spectrum (called the critical wavelength test) is pass/fail. All of the sunscreens in our tests would have received a passing grade on that test, but some sunscreens do a better job than others.

The test that CR does is similar to

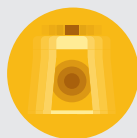
one used in Europe and allows us to measure the degree of UVA protection. Two-thirds of the products in our ratings earned at least a Very Good UVA score.

When you wear sunscreen, you should feel confident that you're well-defended against UVA and UVB rays, and that you're actually getting the level of protection promised on the label. That's where our ratings come in. This year, we have 15 recommended sunscreens that received Excellent overall ratings and 20 others that didn't make our recommended list but were still rated Very Good overall.

If you can't find one of these products, we suggest using a sunscreen labeled with an SPF of at least 40 that contains chemical active ingredients such as avobenzone rather than "natural" or mineral active ingredients such as zinc oxide. (See "Think Twice About 'Naturals,'" on page 9.) In our last five years of testing, we've found that this offers the best chance of getting a sunscreen that delivers at least an SPF 30.

4 Steps to Sunscreen Success

Even the highest-performing product won't shield your skin if you don't use it properly. Follow these easy tips.



1. SHAKE IT.

The directions may not tell you to do this, but it's a good idea because it helps distribute the active ingredients throughout the sunscreen.



2. TIME IT.

Apply 15 to 30 minutes before going outside to give the sunscreen time to start working. If you wait until you're

in the sun, you could accumulate skin damage in those first 15 minutes, especially if you are fair skinned.



3. APPLY ENOUGH, CORRECTLY.

Most consumers use less than half the amount of sunscreen they should. When you apply half the sunscreen, you get half the SPF protection, so an SPF 50 automatically becomes an SPF 25. If you happened to use a product that doesn't

deliver the SPF on the label, and you don't apply it correctly, you could end up getting very little protection.

For example, an incorrectly applied SPF 30 sunscreen that tested at an SPF 15 could wind up providing you with an SPF of 7 or 8 because you applied too little of the stuff. Experts often recommend applying a shot-glassful of sunscreen to cover your body when you're in a bathing suit. If that image isn't helpful, think about a teaspoon-sized blob per body part (and 1 teaspoon to cover your face, ears, and neck). And rub it in—even sprays.



4. REPEAT.

For sunscreen to be effective, it has to be reapplied every 2 hours you're in the sun and immediately after you come out of the water, no matter how little time has passed and even if a product is water-resistant. If you're using sunscreen properly, a family of four spending 4 hours at the beach should go through an 8-ounce bottle of sunscreen.

Ratings ➤ **We've Got You Covered** All sunscreens were labeled at least SPF 30 and, unless otherwise noted, had claims of water resistance for 80 minutes. Recommended products scored 81 or higher overall and received Excellent or Very Good scores for UVA and UVB protection and variation from SPF.

		Brand & Product	Overall Score	Cost per Oz. (\$)	Package Size (Oz.)	Price per Package	UVA Protection	UVB (SPF) Protection	Variation From SPF
Recommended	Rank								
LOTIONS									
✓	1	La Roche-Posay Anthelios 60 Melt-in Sunscreen Milk	100	\$7.20	5	\$36.00	⬆	⬆	⬆
\$	2	Equate (Walmart) Sport Lotion SPF 50	99	\$0.63	8	\$5.00	⬆	⬆	⬆
\$	3	Pure Sun Defense Disney Frozen Lotion SPF 50 ¹ ²	98	\$0.75	8	\$6.00	⬆	⬆	⬆
✓	4	Coppertone WaterBabies Lotion SPF 50	95	\$1.50	8	\$12.00	⬆	⬆	⬆
✓	5	Coppertone Ultra Guard Lotion SPF 70	94	\$1.50	8	\$12.00	⬆	⬆	⬆
\$	6	Equate (Walmart) Ultra Protection Lotion SPF 50 ¹	93	\$0.50	16	\$8.00	⬆	⬆	⬆
\$	7	Ocean Potion Protect & Nourish SPF 30	87	\$1.00	8	\$8.00	⬆	⬆	⬆
✓	8	Aveeno Protect + Hydrate Lotion SPF 30	84	\$2.67	3	\$8.00	⬆	⬆	⬆
✓	9	Up & Up (Target) Sheer Dry-Touch Lotion SPF 30	83	\$1.67	3	\$5.00	⬆	⬆	⬆
	10	Coppertone ClearlySheer Lotion SPF 50	80	\$1.40	5	\$7.00	⬆	⬆	⬆
	11	Neutrogena CoolDry Sport Lotion SPF 30	78	\$1.90	5	\$9.50	⬆	⬆	⬆
	12	Neutrogena Ultra Sheer Dry-Touch Lotion SPF 45	78	\$3.17	3	\$9.50	⬆	⬆	⬆
	13	Hawaiian Tropic Sheer Touch Ultra Radiance Lotion SPF 50	72	\$1.31	8	\$10.50	⬆	⬆	⬆
	14	Well at Walgreens Baby Lotion SPF 50	69	\$1.00	3	\$3.00	⬆	⬆	⬆
	15	Coppertone Sport High Performance Lotion SPF 50	68	\$1.71	7	\$12.00	⬆	⬆	⬆
	16	Banana Boat SunComfort Lotion SPF 30	61	\$1.75	6	\$10.50	⬆	⬆	⬆
	17	Hawaiian Tropic Sheer Touch Ultra Radiance Lotion SPF 30	59	\$1.50	8	\$12.00	⬆	⬆	⬆
	18	Kiehl's Activated Sun Protector Water-Light Lotion SPF 30	58	\$5.80	5	\$29.00	⬆	⬆	⬆
	19	California Kids #supersensitive Lotion SPF 30+ ³	47	\$6.90	2.9	\$20.00	⬆	⬆	⬆
	20	No-Ad Sport Lotion 50	46	\$0.56	16	\$9.00	⬆	⬆	⬆
	21	Badger Active Unscented Lotion SPF 30 ³ ⁴	46	\$5.52	2.9	\$16.00	⬆	⬆	⬆
	22	Sun Bum Original Lotion SPF 30 ¹	36	\$2.00	8	\$16.00	⬆	⬆	⬆
	23	Trader Joe's Refresh Face & Body Lotion SPF 30	34	\$1.00	6	\$6.00	⬆	⬆	⬆
	24	Vanicream Lotion SPF 50+ ³	30	\$4.50	4	\$18.00	⬆	⬆	⬆
	25	Badger Sport Cream SPF 35 ³	30	\$4.83	2.9	\$14.00	⬆	⬆	⬆
	26	Sunology Natural Body Lotion SPF 50 ³	29	\$7.50	2	\$15.00	⬆	⬆	⬆
	27	The Honest Company Mineral Lotion SPF 50+ ³	26	\$4.67	3	\$14.00	⬆	⬆	⬆
	28	Tom's of Maine Baby Lotion SPF 30 ³	22	\$5.67	3	\$17.00	⬆	⬆	⬆

¹ Manufacturer is reformulating the product later this year, but the one tested was still available at press time. ² Other Pure Sun Defense SPF 50 products (which sport other cartoon characters) should have similar performance. ³ Contains only the mineral active ingredients titanium dioxide, zinc oxide, or both. ⁴ Water resistance is 40 minutes.

		Brand & Product	Overall Score	Cost per Oz. (\$)	Package Size (Oz.)	Price per Package	UVA Protection	UVB (SPF) Protection	Variation From SPF
Recommended	Rank								

LOTIONS (Continued)

29	ThinkSport Safe Sunscreen SPF 50+ ³	22	\$4.00	6	\$24.00	⬆️	⬇️	⬇️
30	Kiss My Face Baby's First Kiss Lotion SPF 50 ³	22	\$4.00	4	\$16.00	⬇️	⬇️	⬇️
31	True Natural Active Lotion SPF 30 ^{3,4}	18	\$6.88	4	\$27.50	⬆️	⬇️	⬇️
32	MDSolarSciences Mineral Moisture Defense Lotion SPF 50 ³	18	\$9.75	4	\$39.00	⬇️	⬇️	⬇️
33	CeraVe Body Lotion SPF 50 ^{3,4}	17	\$5.67	3	\$17.00	⬇️	⬇️	⬇️
34	All Terrain AquaSport Lotion SPF 30 ³	17	\$5.67	3	\$17.00	⬆️	⬇️	⬇️
35	Babyganics Mineral-Based Lotion SPF 50+	16	\$1.25	8	\$10.00	⬇️	⬇️	⬇️

SPRAYS

\$	1	Trader Joe's Spray SPF 50+	100	\$1.00	6	\$6.00	⬆️	⬆️	⬆️
✓	2	Banana Boat SunComfort Clear UltraMist Spray SPF 50+	97	\$1.67	6	\$10.00	⬆️	⬆️	⬆️
\$	3	Equate (Walmart) Sport Continuous Spray SPF 30	84	\$0.75	12	\$9.00	⬆️	⬆️	⬆️
✓	4	Neutrogena Beach Defense Water + Sun Protection Spray SPF 70	83	\$1.92	6.5	\$12.50	⬆️	⬆️	⬆️
	5	Panama Jack Continuous Spray SPF 30	80	\$2.00	6	\$12.00	⬆️	⬇️	⬆️
	6	Caribbean Breeze Continuous Tropical Mist SPF 70	79	\$2.75	6	\$16.50	⬇️	⬆️	⬆️
	7	BullFrog Water Sport InstaCool Spray SPF 50	77	\$2.08	6	\$12.50	⬆️	⬆️	⬇️
	8	No-Ad Sport Continuous Spray SPF 30	76	\$0.90	10	\$9.00	⬆️	⬇️	⬆️



Why Spray Sunscreens May Be a Bust

If you don't use them with great care, you may be shortchanging your sun protection.

1. It's tough to tell whether you're really covered. Judging the amount of spray sunscreen you're using can be difficult. "Spray until the skin glistens, then rub the sunscreen in," says Joshua Zeichner, M.D., director of cosmetic and clinical research in the dermatology department at Mount Sinai Hospital in New York City.

"You have to hold the nozzle close to your skin, and don't spray the product into the wind. You often see parents running behind kids on the beach, spraying. That's not an effective way to apply sunscreen," he says.

2. You might inhale them. This can cause lung irritation, so Consumer Reports recommends not using spray sunscreens on children. If you choose

to use them, we suggest you spray the sunscreen into your hands and rub it into your child's skin. And no one, adults included, should spray any sunscreen directly into the face; spray it into your hands and rub in. Also, sprays could contain titanium dioxide and zinc oxide, which may contain tiny nanoparticles.

(We didn't test sprays with those ingredients.) Breathing in titanium dioxide is a possible cancer risk, according to the World Health Organization.

3. You'll probably spend more. Because some of the product may escape into the air, it's smart to spray yourself twice. So you're likely to go through a spray sunscreen faster than you would a lotion.

		Brand & Product	Overall Score	Cost per Oz. (\$)	Package Size (Oz.)	Price per Package	UVA Protection	UVB (SPF) Protection	Variation From SPF
Recommended	Rank								

SPRAYS (Continued)

9	Up & Up (Target) Sport Spray SPF 30	76	\$0.83	12	\$10.00	⬆️	⬆️	⬆️
10	Hawaiian Tropic Island Sport Ultra Light Spray SPF 30	74	\$1.33	6	\$8.00	⬆️	⬆️	⬆️
11	Australian Gold Continuous Clear Spray SPF 30	69	\$1.75	6	\$10.50	⬆️	⬆️	⬆️
12	Neutrogena Wet Skin Spray SPF 30	69	\$2.40	5	\$12.00	⬆️	⬆️	⬆️
13	Banana Boat Sport Performance Clear UltraMist PowerStay Technology Spray SPF 100	66	\$1.67	6	\$10.00	⬆️	⬆️	⬆️
14	Banana Boat Sport Performance CoolZone Spray SPF 30	63	\$1.50	6	\$9.00	⬆️	⬆️	⬆️
15	Banana Boat Sport Performance Clear UltraMist Powerstay Technology Spray SPF 50+	62	\$1.50	6	\$9.00	⬆️	⬆️	⬆️
16	Coola Sport Unscented Spray SPF 50	41	\$4.50	8	\$36.00	⬆️	⬆️	⬆️
17	Coppertone Sport High Performance Spray SPF 30	40	\$1.83	6	\$11.00	⬆️	⬆️	⬆️
18	Supergoop! Antioxidant-Infused Sunscreen Mist SPF 50	40	\$3.17	6	\$19.00	⬆️	⬆️	⬆️
19	EltaMD UV Aero Continuous Spray SPF 45	17	\$5.17	6	\$31.00	⬆️	⬆️	⬆️

STICKS

✓	1	Up & Up (Target) Kids Sunscreen Stick SPF 55	85	\$5.83	1.2	\$7.00	⬆️	⬆️	⬆️
✓	2	Coppertone Kids Sunscreen Stick SPF 55	84	\$9.17	0.6	\$5.50	⬆️	⬆️	⬆️
	3	Neutrogena Beach Defense Water + Sun Protection Stick SPF 50+	76	\$7.00	1.5	\$10.50	⬆️	⬆️	⬆️
	4	Banana Boat Ultra Defense Sunscreen Stick SPF 50	68	\$10.00	0.55	\$5.50	⬆️	⬆️	⬆️

HOW WE TEST

To check for UVB protection, a standard amount of each sunscreen is applied to small areas of our panelists' backs. Then they soak in a tub of water. Afterward, each area is exposed to six intensities of UVB light from a sun simulator for a set time. About a day later, a trained technician examines the areas for redness. The resulting UVB protection ratings reflect each product's actual effectiveness after water immersion and are based on an average of our results for each sunscreen. To test for UVA protection, we smear sunscreen on plastic plates, pass UV light through, and measure the amount of UVA and UVB rays that are absorbed. That information is then used to calculate our UVA score.

UVA VS. SPF (UVB)

The sun protection factor (SPF) is a relative measure of how long a product will protect you from UVB rays, the chief cause of sunburn. Assuming you use it correctly, if you'd burn after 10 minutes in the sun, an SPF 30 protects for about 5 hours. But the intensity of UVB rays varies throughout the day and by location, and all sunscreens must be reapplied every 2 hours you're in the sun. A product's SPF tells you nothing about the sunscreen's ability to protect against UVA rays, which is why you need one that's labeled broad-spectrum. This means the sunscreen is designed to defend against UVA and UVB rays. But no sunscreen blocks 100 percent of UV rays.

SCORES IN CONTEXT

UVA Protection

All of the products performed well enough in our tests that they would have passed a critical wavelength test, which is required for a sunscreen to be labeled broad-spectrum. That is a pass/fail test. We use a UVA test that allows us to determine the degree of UVA protection a sunscreen provides, ranging from Excellent to Poor.

UVB (SPF) Protection

This rating is based on the SPF range found in our tests.

- ⬆️ Tested UVB/SPF ≥40
- ⬆️ Tested UVB/SPF 30-39
- ⬆️ Tested UVB/SPF 20-29
- ⬆️ Tested UVB/SPF 10-19
- ⬆️ Tested UVB/SPF 0-9

Variation From SPF

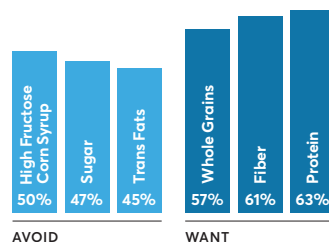
This rating is a measure of how closely a sunscreen's tested SPF matched the SPF on the label.

- ⬆️ Tested 85% or above labeled SPF.
- ⬆️ Tested 70%-84% labeled SPF.
- ⬆️ Tested 60%-69% labeled SPF.
- ⬆️ Tested 50%-59% labeled SPF.
- ⬆️ Tested 49% or below labeled SPF.

Insights

Notable news and smart solutions

WHAT BUYERS LOOK FOR IN HEALTHY FOODS



Source: Lightspeed GM/Mintel.

Weird Foods Worth Trying

These strange-sounding edibles are popping up all over. Do they have health benefits—or are they just the latest attempt to get you to open up your wallet? Our nutrition experts take a close look.

Jumping Jack!
Jackfruit, when served unripe, has the texture of pulled pork.

Birch Water



YOU'VE PROBABLY seen bottles of coconut water, the mildly sweet liquid inside coconuts. But what about birch, cactus, or cucumber water?

Birch water is the sap of a birch tree. Some products mix in flavorings like nettle or rosehip (shown above) with the sap; others add water and fruit juices. Cactus and cucumber varieties are just flavored water.

These products, sometimes promoted as natural hydrators that are rich in antioxidants, electrolytes, and nutrients, may also carry promises to reduce inflammation and detoxify.

How weird is it? A little. Plant and tree waters are fairly new to the U.S. market. Cucumber water is just water with flavors added, and there's nothing new about that.

How healthy is it? Plant waters are usually lower in calories than typical sports drinks, having 25 to 30 calories in 8 ounces compared with 56 for Gatorade. Many have no sweeteners or only the sugars naturally present in the plant, but some have small amounts of added sugars. Still, Consumer Reports nutritionists advise sticking with the most authentic beverage of all: water.

"Few people exercise so vigorously that they need to replenish electrolytes," says Amy Keating, R.D., a CR dietitian. "And these specialty waters can be pricey." We paid almost \$3 for 10 ounces of birch water and \$2.50 for 12 ounces of cucumber-lime water. Cactus water sells for slightly more than \$3 for 16.9 ounces on Amazon.

As for the claimed nutrition benefits of other plant waters, if you want to add more

nutrients and antioxidants to your diet, CR recommends eating vegetables or fruit instead of sipping juice. You'll get the additional benefit of fiber, which aids digestion.

How does it taste? When testing plant waters in the past, we have found that the flavor of the plant came through, but just slightly. Many plant waters are flavored with other ingredients like fruit or herbs, which can change the taste.

Jackfruit



LOVE THE HEALTH benefits of a plant-based diet but still crave old favorites like succulent pulled-pork sandwiches? Your new favorite meat substitute may come in a surprising package: young, green jackfruit. Before it's ripe, this Southeast Asian fruit has a texture that's similar to shredded meat. It's been marketed as everything from the next great vegan meat alternative to a sustainable support for farming economies. **How weird is it?** Pretty weird. The bumpy green fruit, which can grow up to 100 pounds, is an everyday food in subtropical regions such as India and Indonesia, where it's eaten unripe in savory dishes like curries or ripe as a fresh fruit. But in North America, it's still pretty unusual.

You'll find jackfruit in some Asian and natural-food markets. The whole large fresh fruit and often smaller, plastic-wrapped sections will be near other tropical fruits in the produce section. Packaged jackfruit may be in the meat-substitute area (near the tofu) or in the canned fruit and vegetable sections.

How healthy is it? Unlike other meat substitutes such as seitan or tofu, jackfruit isn't

high in protein, supplying just 2 grams per half-cup. "Most people get more than enough protein in their diets, but if you don't eat any animal products, jackfruit won't help you meet your protein needs," says Maxine Siegel, R.D., who heads CR's food-testing lab.

Packaged products of jackfruit that have added flavorings often include sugars and sodium. Still, swapping jackfruit for the pulled pork in your favorite dish will save you at least 100 calories and 4.5 grams of fat (of which about half is saturated fat) per 3-ounce serving.

How does it taste? Plain young green jackfruit has a starchy texture and a fairly mild flavor. The spices in one of the flavored frozen dishes we tested tended to overwhelm the fruit itself. "Texture is a big factor here," says Claudia Gallo, a chef and food tester at CR. "The pieces and chunks broke apart into shreds reminiscent of very soft pulled meat. The vegans on our panel were satisfied, but meat eaters didn't think it could hold a candle to real meat."

Purple Asparagus



PURPLE ASPARAGUS—and other purple veggies and grains—have gotten a lot of press and shelf space in recent years. But these varieties aren't new. Until the 17th century, when the Dutch introduced orange pigment to carrots in celebration of the Dutch royal family, many carrots were purple. And contemporary records show that purple potatoes were hot sellers in 18th-century Parisian markets.

Now produce purveyors and marketers are encouraging American shoppers to discover again the power of purple, and the campaign seems to be

working. Whole Foods listed purple produce as one of their top food trends for 2017. **How weird is it?** Not that much. These varieties of asparagus, carrots, cauliflower, grains, potatoes, and more have been brightening up market shelves for several years.

How healthy is it? "Purple vegetables get their color from anthocyanins, a naturally occurring antioxidant that has been linked to a lower risk of heart disease and some cancers," Siegel says. But check labels on packaged foods carefully. "Cereal, chips, or other packaged products may have just as many calories, sugars, and sodium as the less colorful options," she says.

How does it taste? Purple asparagus tastes like, well, asparagus. "There isn't a discernible difference between the taste of purple produce and the standard-colored varieties," Keating says.

Cricket Flour



IN THE U.S., finding bug body parts in your meal is usually cause for spitting out your food in disgust, and maybe even filing a lawsuit. But there may be good reasons to actually want bug bits in your food.

Cricket flour, which is being used to make snack bars, brownie mixes, chips, and other foods, is seen as an environmentally efficient way of getting more protein in your diet.

But the cricket products showing up on store shelves in the U.S. don't contain insects that were rounded up in the wild. These critters were raised on domestic cricket farms, then dried or roasted and milled into a fine flour.

How weird is it? That depends on your perspective. "Crickets and other insects are an excellent and common source

of protein in parts of the world, from South America to Africa to New Zealand,” says Marvin M. Lipman, M.D., Consumer Reports’ chief medical adviser. One reason is that regions with warm climates year-round have insects always readily available. **How healthy is it?** “The cricket-flour protein bars we tested do have a high protein content, but they can also be high in calories,” Siegel says. “Some had as many as 300 calories, which is really like two snacks.”

“A big health benefit to cricket-flour products may be to the planet, in that they’re a sustainable protein source,” she adds. “Insects don’t require much land or water, certainly much less than cattle, for example.”

If you want the extra protein without the added calories, look for plain cricket flour. You can use it as a substitute for some of the regular flour in baked goods.

How does it taste?

“You can’t taste the cricket flour in the bars we tried,” Siegel says. As for the bars themselves, they were chewy and mostly tasted like dried fruits and nuts, and some had other spices and flavors added. Overall, our tasters said that these protein snacks were just okay.

Veggie Burgers



IF IT LOOKS, cooks, and even “bleeds” like red meat, is it still a veggie burger? Some newcomers to the veggie-burger scene hope to make consumers do a dinnertime double take. These new products combine plant-based proteins with other ingredients to create a rich mouth feel and meatlike taste and color.

How weird is it? Pretty weird. This new breed of veggie

burger comes “raw,” like real meat. One product is actually sold in patties in the meat department, right next to the ground beef.

How healthy is it? CR’s nutrition team tested two new “meaty” veggie burgers. The Beyond Burger, available at select Whole Foods stores around the U.S., is similar calorie-wise to a same-size burger made from 80 percent lean ground beef, but it has less protein and a third less saturated fat. The Impossible Burger, on the menu at a few restaurants in New York, Las Vegas, Los Angeles, and the San Francisco Bay Area, has about the same number of calories and amount of protein as a similar-size 80 percent lean beef burger but is higher in saturated fats. “The sodium content for both is on the high side,” Keating says.

How does it taste? Our testers tried both burgers at company-hosted events introducing the new products. Both came closer to real beef in flavor and texture than any other veggie burger we’ve tasted at Consumer Reports, though neither one quite measured up to ground beef in flavor. Still, “on a bun with toppings like lettuce, tomato, cheese, a Thousand Island-style sauce, and pickles—which is the way I was served the Impossible Burger—you might be hard-pressed to say these weren’t beef burgers,” Gallo says.

Kefir



LIKE YOGURT, kefir (most often pronounced “kuh-FEER” or “KEE-fur”) is a fermented milk product with a tangy, somewhat sharp flavor. Both are riding the bandwagon of the fermented-food trend that’s been going strong for

the past several years. That’s probably because of emerging research about the role the microbiome—the ecosystem of good bacteria that resides in your gut—plays in your overall health.

How weird is it? Only a little. Kefir has been enjoyed by Europeans for centuries, but yogurt is far more familiar to mainstream U.S. shoppers, and more popular. You’ll find kefir near the yogurt in the dairy section of many grocery stores. The traditional drinkable version is sold in bottles; newer, thickened versions come in yogurt-style cups. You can drink or eat plain or flavored kefir on its own, add it to fruit or cereal, or mix it into homemade smoothies for a protein and probiotic boost.

How healthy is it? Kefir and other fermented foods, including yogurt, sauerkraut, tempeh (a fermented soy product), kimchi (a traditional Korean dish of salted and fermented vegetables, often cabbage), and kombucha (an effervescent fermented tea) are rich sources of probiotics. They’re associated with a healthy microbiome and a number of other health benefits, such as weight loss and improved digestion and immunity. Kefir has about twice as many probiotics as yogurt, according to one manufacturer. But some kefir products are high in fat, and flavored versions may have added sugar, so be sure to check the label before you buy. Like yogurt, kefir is only as healthy as the ingredients it contains.

How does it taste? Plain kefir tastes similar to plain yogurt, with a slightly tarter flavor and a thinner consistency. Flavored versions are widely available, and the sweetness of the fruit or other flavoring tends to balance kefir’s natural sourness.

—Sue Byrne, Julia Calderone, Trisha Calvo



RECALLS



GARBAGE DISPOSALS

Anaheim and Moen are recalling about 146,000

in-sink disposals because an internal metal part can break off while in use, potentially causing injury. The disposals were sold at retail and plumbing-supply stores from December 2015 through March 2017 for \$80 and \$450. **What to do** Stop using the disposal and contact Anaheim Manufacturing at 800-628-0797 or go to anaheimmfg.com to arrange for a free replacement.

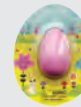


PICKUP TRUCKS

Toyota is recalling about 228,000

model year 2016-17 Tacoma pickup trucks because the rear differential may leak oil, causing noise, reduced power, and seizing, which could lead to a loss of control and the risk of a crash.

What to do Dealers will check the rear differential for oil leakage and repair it if necessary at no cost. Call Toyota at 800-331-4331 or go to toyota.com/recall for more details.

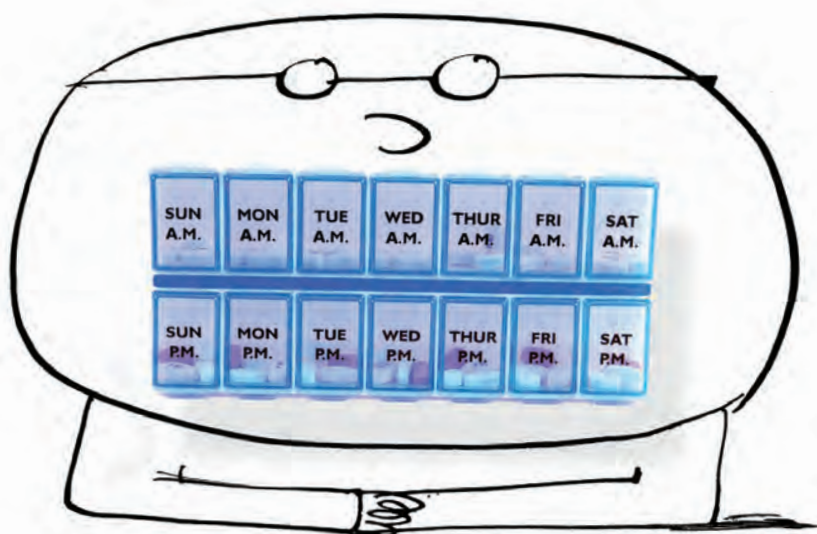


WATER-ABSORBING TOYS

Target is recalling

about 560,000 Hatch & Grow Easter Eggs, Easter Grow Toys, and Hatch Your Own Dino toys because they can expand if ingested, causing potentially life-threatening intestinal blockages requiring surgery. The toys were sold at Target from February 2017 through March 2017 for about \$1.

What to do Immediately take the toy away from children and return it to any Target store for a full refund. Call Target at 800-440-0680 or go to target.com for more information.



What's a good way to keep track of medications I take?

The first thing to try is a daily pill organizer that has two rows, one for daytime and one for nighttime. Take it to your pharmacist and ask her to organize your meds for you. This works best if your regimen is four or fewer drugs.

Certain independent pharmacies and a handful of CVS, Rite Aid, Target, and Walgreens pharmacies offer a “blister pack” service, which can be useful for more complex drug regimens. The pharmacy presorts meds into single-use, plastic packages by the time of day you should take the drugs.

Using blister packs is thought to cut down on errors such as taking the wrong drug or taking it at the wrong time. Taking five or more medications increases your risk of making this kind of mistake, according to research published in the *Journal of Gerontological Nursing*.

Another option is an online pharmacy called PillPack. PillPack fills prescriptions into plastic blister packs at no cost. You pay your normal 30-day co-pay. Medication arrives in the mail sorted and sealed into individual packets with the drug's name and instructions printed on the outside. The service coordinates with your insurance company, syncing up multiple prescriptions so that they all refill at the same time.

“Having your meds presorted means no more fumbling with pill bottles or confusing instructions,” says Lisa Gill, deputy editor of Consumer Reports Best Buy Drugs.

PillPack takes manufacturer co-pay discount coupons and other drug discount coupons, and can ship to every state except Hawaii. But it doesn't fill prescriptions for certain meds considered more likely to cause dependence, such as Adderall and Vicodin.

My 8-year-old window A/C isn't cooling like it used to. Is it time to buy a new one?

Units should last eight to 10 years, but troubleshoot yours before kicking it to the curb.

First, inspect the seal around the unit to make sure no warm outside air is leaking in. Replace the weather stripping if it has loosened over time. Next, remove the filter (usually located just behind the grill) and clean it with warm, soapy water. While the filter dries, check the now-visible evaporator coils. If they're covered in dust, clean them with your vacuum's upholstery brush, taking care not to bend the fragile fins.

“If the air coming from the unit is still too warm, you may have a problem with the compressor or the level of refrigerant, and should replace your A/C if it's out of warranty,” says Chris Regan, CR's senior A/C tester. Warranties usually last between one and five years. The good news? Newer units are more energy-efficient than the one you own, so you'll save money on your utility bill. Look for a model certified by Energy Star. Online subscribers can see our full air conditioner ratings at CR.org/ac.

Can I avoid fees for using another bank's ATM?

When you get cash from out-of-network ATMs, you could incur two sets of fees—those charged by your bank, known as “out-of-network withdrawal fees,” and those levied by other banks, dubbed “surcharges.”

Today 40 percent of financial institutions automatically waive out-of-network fees for their customers, up from 4 percent in 2012, according to Moeb's Services, an economic research firm. Banks are more willing to give up these fees—which average around \$1.67 per transaction, according to Bankrate.com—as more people turn to cashless payment options. “This will become standard practice in the next two years,” says the firm's CEO, Michael Moeb's.

If you're hit with a surcharge for using another bank's ATM—which averages \$2.90 per transaction, according to Bankrate.com—know that only 1 percent of banks refund those. Among them are Alliant Credit Union, Ally Bank, and USAA, says Consumer Reports money editor Jeff Blyskal. All three were rated highly in our most recent survey of banks and credit unions and will refund \$10 to \$20 per month in ATM surcharges.

To skip the ATM altogether, use your debit card “cash back” option if it's available—you can usually withdraw as much as \$100 from your account. But ask the retailer about any associated fees.



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





AT THE WHEEL OVER 65

Driving Safer, Driving Longer

More drivers over age 65—even 85—are on the road than ever before, and even greater numbers are on the way. But the good news is that more research and innovation are being applied than ever before to meet the challenges.

by Michael Tortorello

AMERICANS LOVE TO DRIVE.

More than **75 percent** of adults carry a driver's license, including 40 million who are 65 and older.

But driving is more than just a passion or a pastime: It's a lifeline. Studies show that giving up driving increases a person's mortality risk and makes seniors more likely to land in nursing homes and suffer from depression. Yet the average American man outlives his ability to drive by six years and the average American woman by 10 years.

So it's not surprising that older people are reluctant to stop driving. "Seniors do not want to talk about or think about when they can't drive," says Sandi Rosenbloom, a professor of community and regional planning at the University of Texas at Austin. "I've done dozens of focus groups in seven different countries. If you ask seniors anywhere, 'When do you think you won't be able

to drive?' they will uniformly say about 10 years from whenever you ask. It doesn't matter what age they are when you ask. They can be 80!"

Some of us do manage to drive well into what geriatricians call "oldest-old" age: More than 3.5 million Americans 85 and older currently hold a driver's license. At 95, Eldon Bartlett is one of them. Bartlett, whose first car was a

Model T, still pilots his 22-foot Gulf Stream motor home on annual trips between his home in Portland, Ore., and an RV park in Arizona, where he visits friends near Phoenix and plays cribbage.

It would be wonderful if everyone could count on Bartlett's good fortune—and good genes. Eventually, though, physical or cognitive limitations (or both) make driving safely difficult or impossible for most older people, compelling them to hang up their car keys for good.

The problem is that most of them have no other way of getting around. Nearly three-quarters of seniors live in areas with few—if any—transportation alternatives, which means their options for remaining mobile begin and end in their own driveway.

All of this amounts to a senior transportation predicament that will only grow more urgent with the arrival of the Silver Tsunami, a demographic monster wave that will swell the 65-and-older population to a projected 74 million in 2030 from 46 million in 2015.

Though it may at times seem effortless, driving is a complex task that requires, among other things, healthy cognition and good flexibility. (Think about craning your neck to check your blind spot.) A long list of medical conditions common to seniors may impair both. Fourteen percent of Americans ages 71 and older experience some type of dementia; Alzheimer's disease affects about a third of the population 85 and older.

Many more common medical conditions can also limit the ability to drive, including chronic pain, diabetic neuropathy, failing vision, and osteoarthritis.

Even the drugs we use to treat medical conditions—painkillers, antidepressants, and sleeping pills, for example—can interfere with safe driving. Almost 30 percent of the seniors in one study were taking at least five prescription medications.

Defying the Stereotypes

All of the challenges that come with aging might lead you to assume that seniors represent a special menace behind the wheel. But data prove that this assumption is fundamentally wrong. Decades of statistics show that crash rates per mile driven are highest for the youngest drivers (ages 16 to 19), though they do begin to tick up steadily once drivers roll past age 70. But even at 85, senior drivers crash less often, per mile, than teens. And when they do, seniors are largely a danger to themselves. (See “The Most Dangerous Drivers,” on page 22.)

Older adults don't get enough credit for their safe driving habits, says Emmy Betz, M.D., M.P.H., an emergency-room physician and associate professor at the University of Colorado School of Medicine who researches senior-driving safety.

“Older drivers are more likely to use seat belts and follow speed limits,” Betz says. “They are less likely to drive at night or while intoxicated, or to text while they drive.” Many seniors also regulate their driving behavior, limiting their trips at night, on highways, or during rush hour.

Public suspicion of older drivers isn't based on facts or research but on a nonclinical factor: ageism. That's the assertion—and that's the word—put forward in a 300-page evidence-based handbook, “The Clinician's Guide to Assessing and Counseling Older Drivers,” that was revised last year by the American Geriatrics Society and published by the National Highway Traffic Safety Administration.

This ageism extends all the way to our laws. Thirty-two states impose special registration burdens based on age, such as more frequent or in-person license renewals, and medical approval and vision tests. Maine requires vision screening for drivers once they reach 40; drivers 75 and older must pass a road test to renew their license in Illinois; and in Washington, D.C., drivers 70 and older

need to have their physician sign off on their license renewal.

The effectiveness of these interventions, however, appears to be limited. A 2014 study in the journal *Injury Epidemiology* concluded that no policy it examined significantly reduced fatal crashes for drivers younger than 85.

Two policies did reduce fatality rates considerably for the most senior drivers: in-person renewals and additional vision tests in states without in-person renewal requirements. Researchers speculate that these policies work because they provide an

opportunity to identify drivers with functional deficits and refer them to further screening (possibly leading to the denial of a license). Alternatively, some seniors who rightly fear they may not pass the screening may simply not renew their license and discontinue driving.

Researchers say that a quick and accurate doctor's office screen has proved difficult to design. While many people experience diminished vision, cognition, or motor skills as they age, those deficits occur at wildly different rates and degrees. Some 79-year-olds are hiking the Appalachian Trail;

How to Keep Driving Skills Sharp

These programs can enhance your abilities and increase safety behind the wheel.

CARFIT

This free nationwide educational program developed with AAA, AARP, and the American Occupational Therapy Association helps seniors see more from the driver's seat.

During a 20-minute drive-up appointment (usually held in parking lots at senior centers, hospitals, and public parks) specialists train drivers to adjust mirrors and seating height, and to find the correct distance from the pedal and steering wheel to give them the clearest possible sight lines and safest position for driving.

Will CarFit keep you safer? The jury is out on this one, said Dennis McCarthy, a professor and senior driving researcher at Nova Southeastern University who stages CarFit programs in Florida.

But it does teach senior drivers the benefits of being properly positioned in a car and puts them in contact with experts who can answer questions and suggest a check-in with a physician or an ophthalmologist if one is needed. The program's website, car-fit.org, includes a searchable calendar and map (the Eastern states are particularly well-covered) with listings for about 300 events per year.

AARP DRIVER PROGRAMS

Last year AARP led continuing driver-education courses for 360,000 classroom participants and another 130,000 participants online, says Kyle Rakow, the vice president and national director of AARP Driver Safety. State regulations shape the curriculum and course duration: 4 to 8 hours is a typical length.

The fee is usually \$15 to \$25, and the car-insurance savings can be considerable: 10 percent in a few states, including New York and Georgia.

“Individuals walk in for an insurance discount and walk out a much safer driver,” Rakow says. (Most states allow insurance companies to set their own incentive rates; not all give credit for the online version of the course.)

Are safety-course graduates less likely to be involved in crashes than other older drivers? Probably not, according to a handful of studies collected by the Insurance Institute for Highway Safety. But participant surveys show that these programs prompt seniors to reflect on their driving knowledge, skills, risk factors, and performance.

Classes can be found on the AARP website (aarp.org/findacourse).

others find it impossible to climb a flight of stairs.

Testing these two populations the same way is futile, according to David Carr, M.D., who has been developing driver-screening tools at Washington University Physicians, where he's the clinical director of geriatrics.

"The average older driver might crash or fail a road test less than 10 percent of the time," Carr says, but the failure rate will be much higher for patients with dementia or a history of strokes. Which means that rather than relying on age, a worthwhile screening tool needs to

start by assessing a driver's individual health and risk factors.

Just six states require physicians to report potentially dangerous patients to state licensing authorities and medical advisory boards; the rest make such reporting voluntary. Last year Florida, which doesn't require physician reporting, revoked almost 6,700 licenses for medical incapacity or failure to provide a requested medical form. It pulled nearly 3,900 drivers off the road for failing a vision test or neglecting to supply a vision report.

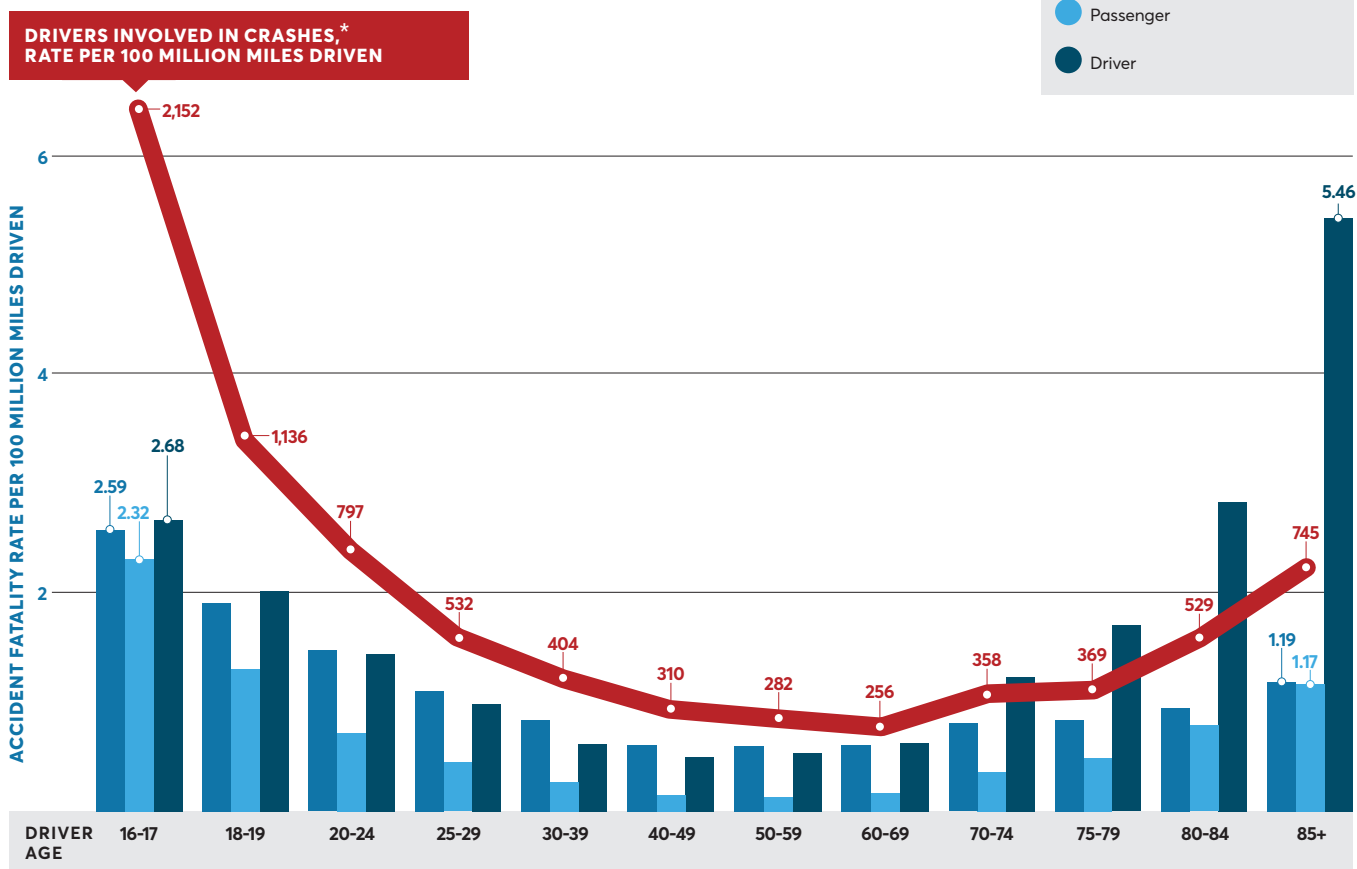
Still, the case for stronger laws is a weak one. The latest study, in *The*

Gerontologist, a medical journal, failed to find a corresponding reduction in emergency-room admission rates in states that require doctors to report potentially dangerous older drivers.

Richard Marottoli, M.D., a professor and geriatrician at Yale University, counsels patients on driving cessation but understands why overtaxed general practitioners might shrink from the task. "The conversation is emotionally fraught," he says. "It can put them in a different relationship. Instead of being a patient advocate, they become a patient adversary." The bogeyman in a white coat coming for your keys.

The Most Dangerous Drivers

Teens have more than twice as many accidents per mile driven as even the oldest drivers. When it comes to fatalities, older drivers are more of a danger to themselves than to anyone else.



Staying in the Driver's Seat

Clues for ways to keep seniors on the road longer and safer could well come from a major new longitudinal study called LongROAD. The 5- to 10-year project, coordinated by the AAA Foundation for Traffic Safety, is following 3,000 seniors at five sites across the U.S. Volunteers submitted their full medical and driving records, were interviewed, and allowed tracking devices to be installed in their vehicles. Over time, these trip logs should provide researchers with insights on matters great and small. What time of the day do crashes occur, at what speeds, and on what types of roads? What medications were the drivers taking at the time? Do moving violations predict accidents?

But there's plenty we already know. "You absolutely can help people drive longer," says Betz, the Colorado emergency-room doctor.

In terms of what you can do on your own, studies have found that cardiovascular exercise can slow cognitive decline, and that strength and flexibility programs can improve senior performance on driving metrics like neck rotation and response speed. Continuing-education programs probably can't hurt. (See "How to Keep Driving Skills Sharp," on page 21.)

Senior drivers may also benefit from working with a driver rehabilitation specialist, a person trained to assess a driver's abilities and recommend practical retraining, adaptive devices, and sensible driving restrictions. In shorthand, an occupational therapist with wheels.

Kathy Woods is a certified driver rehabilitation specialist who directs four colleagues at the Courage Kenny Rehabilitation Institute, a complex on the western border of Minneapolis. They see about 1,000 patients per year, most of them older adults. Many arrive with referrals from doctors or caregivers; some come on their own.

Last winter her team assisted a client who was 101 years old.

The 3-hour evaluation is a daunting audit that begins with the same general cognitive and memory tests that a neurologist might administer, followed by a thorough vision screening.

A simulated-driving segment presents video road hazards, and multiple-choice questions assess the driver's judgment and knowledge of traffic rules. A gas/brake apparatus gauges reaction time. At the end of the appraisal, Woods takes the client out on the streets.

What clues does she look for? "Going

through a red light, going through a stop sign, weaving and drifting," Woods says. "The more subtle ones might be stopping at a stop sign and not taking their turn when it's time to go, or stopping at an intersection when they don't need to."

A 2010 observational study in the *Journal of the American Geriatrics Society* found that older drivers commit a greater number of minor errors (such as failing to signal) and dangerous ones (failing to stop at a red light) than middle-age drivers do.

Prospective clients often ask Woods what the program's "success rate" is.



Moving Right Along
Mobility managers coordinate transportation options to get seniors where they need to go.

It's not a term she likes. Success, as she defines it, can mean helping a client return to driving, continue driving—or never get behind the wheel again.

Shari Peterson, a 69-year-old professor who recently got a diagnosis of mild cognitive impairment, fell into the last category after being evaluated.

“I sobbed for 2 minutes,” Peterson recalls. “Then I said, I’m okay. My grieving lasted only about a day.”

Peterson’s grace is atypical, Woods says. Many seniors with dementia or other memory impairment reject the test results or demand another assessment. They’re skeptical; they’re angry.

“There is a grieving process with this major life change,” Woods says. “Some accept the outcome more quickly, while others struggle longer.”

Peterson’s son Brian, 39, says he was impressed that his mother “was willing to take the initiative to stop driving instead of making it a fight.” It took the pressure off him.

Adult children often see a driving “retirement” not only as a threat to a parent’s independence but also a threat to their own.

“Adult children tell me all the time, ‘I don’t want to do to my child what my parents have done to me,’” Rosenbloom says. “They get stressed; they often have to move their parent out of the home they’ve lived in for decades because there are no transportation services nearby.”

Peterson’s equanimity helped her adapt. Friends now pick her up for shopping trips. “I’ve been having a lot of lunches out—you can get around,” she says. She’d always considered herself an independent woman, but she recently concluded that “the people I love, they take joy from helping me.”

Now and again she still gets to ride in her car, a Mazda 6. But now she sits in the passenger seat and her son drives. This reversal still feels “surreal” to him, he says. “One day you’re independent, and the next day you’re not.”

It would be a mistake to think of

a driver rehabilitation specialist as someone whose job is to usher you away from your car. Plenty of seniors need to cease driving for a time after a major health event: a knee or hip replacement, for example, or open-heart surgery, chemotherapy, or a stroke. What may not be clear is when and how to get back on the road.

Mike Grein, 70, is another client of Woods’ practice. With her help he regained the confidence to drive after a serious collision (he wasn’t at fault) and a grueling series of surgeries kept him out of the driver’s seat for two years.

During his recovery period, Grein relied on his wife, Nancy, to get around town. When he said he wanted to start driving again, she arranged for him to meet with Woods.

Woods divides driving into different functions, and with Grein, she says,

“the majority of them looked strong.”

“I was champing at the bit,” he says about his return to driving.

Now when the couple travel to visit their son, Nancy will be the one to pilot their car through Atlanta traffic. But during their vacation in Alaska, “I would just as soon get behind the wheel,” Grein says.

Driver rehabilitation specialists provide an urgently needed service. They’re also in short supply. States including Arkansas and Alaska have zero certified driver rehabilitation specialists, and Texas and California offer fewer than one for every 1.5 million people.

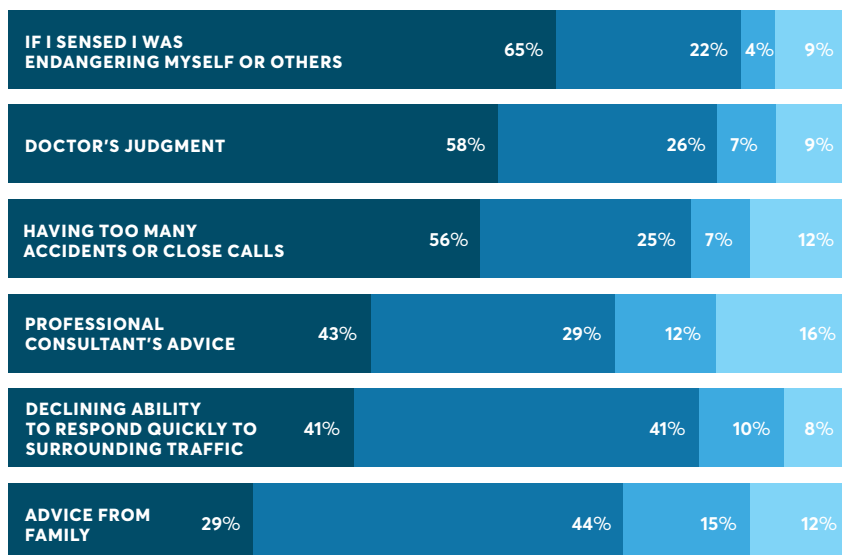
The Association for Driver Rehabilitation Specialists has a searchable database of specialists on its website, aded.net. Insurance coverage for the service is limited, and seniors

Reasons Seniors Would Stop Driving

Factors people 65 and older say might make them hang up the car keys for good.

LIKELIHOOD OF GIVING UP DRIVING

- Very likely
- Somewhat likely
- Not very likely
- Not at all likely



generally must pay out of pocket. A comprehensive driving assessment costs about \$400 to \$600.

When the time to retire from driving does come, most people discover that they have far fewer options than they had expected.

Some invest their hopes in the little white vans they see around the neighborhood: that is, paratransit. But what we know about paratransit—the federally mandated service for people with disabilities—is mostly wrong, according to Rosenbloom. It operates only near established public bus routes, which means it's a limited resource in most suburbs. And its use is restricted to people who can't reach regular public transportation because of a disability. Being unable to walk is a disability; being old is not. Neither is being unable to drive. Ultimately, Americans over the age of 70 make less than 0.5 percent of their trips on public paratransit.

Self-driving automobiles could one day help some seniors remain on the road for as long as they're able to get into and out of a car, but that day is probably still years—maybe decades—away. And while ride services like Lyft and Uber have made finding transportation easier than ever for many, they still present serious limitations for seniors. (See “Not Taken for a Ride,” starting on page 26.)

A City Full of Solutions

If senior transportation is a riddle, experts say that at least part of the solution can be found in Portland, Ore., at the headquarters of Ride Connection, a nonprofit “mobility manager.” Last year it provided 559,000 rides to seniors and people with disabilities.

“Mobility management” means different things in different locales. It can be little more than a website that posts the schedule of a neighborhood senior shuttle or a social worker in a healthcare facility who helps

Better by Design: Making Cars That Meet the Needs of Older Drivers

How three companies are leading the way to help keep aging drivers on the go.

FORD

Newly minted car designers don't start out with an understanding of the needs of senior drivers or others with limited mobility or declining vision. To help sensitize them, Ford makes its engineers and designers wear its Third Age Suit, which duplicates some of the limited flexibility, hearing, motion, vision, and even sense of touch that seniors can experience.

“The Third Age Suit places our engineers directly in the shoes of older drivers, helping them understand their circumstances and anticipate their needs,” says Katie Allanson, a human factors engineer in Ford's Interactions and Ergonomics group.

Some of the details that Ford considers include seat-belt operation, ease of opening doors, and even the space between the infotainment buttons so that drivers can avoid hitting two at once.

Advanced safety features are always a balancing act, no matter which driver the manufacturer has in mind. For instance, engineers struggle with how to create sound or sight warnings that do the job but won't annoy or overwhelm the driver.

SUBARU

Subaru's approach to designing cars with seniors in mind is to focus on access, controls, and visibility, and to keep its cars free of anything that's confusing or complicated, says Todd Hill, a product manager. “We like to be different from the competition for good reasons,” he says. “There's no point being different just to be different. It has to add value.”

Accessibility is a key focus: for example, making sure doors open wide, and eliminating low or sloping rooflines so that no one has to duck to get into a car. Subaru makes sure gauges and touch screens are large and visually clean, with easily readable fonts. Gauges are also

placed high on the dashboard to help keep a driver's eyes on the road.

TOYOTA

Known for reliability and value, Toyota relies heavily on research, partnering with institutions like the University of Michigan and Wayne State University to explore issues, including how to reduce injuries to seniors in a crash. An innovation that resulted from its collaboration with Wayne State was a computer-simulated model that revealed how a 70-year-old female's bones might break in a crash. The modeling, meant to educate designers about gender's role in aging, hasn't resulted in new products yet. But Toyota's collaboration with a senior center in Michigan has. It led to changes in the seat design in some models to make it easier for seniors to maneuver out of their car.

—Michelle Naranjo

seniors make it to their chemotherapy appointments. The broader idea is to enable older people to find the transportation options that exist in their community and then help them get where they need to go.

Ride Connection is a groundbreaker in the field: a team of 96 employees in a new modernist office building (plus six satellite sites), all devoted to moving

clients around metropolitan Portland. Documentary photo portraits, at a heroic scale, line the walls of the call center: a tattooed woman in a crowd with her service dog; a pair of elderly women embracing. These images are a constant reminder to the staff of the people they're working for.

Each month more than 200 new customers call in to talk with a travel

counselor. Over the course of a 30- or 60-minute call, the counselor will record where the customer regularly goes, describe what types of transit are available, and pass him or her along to a scheduler who books pickups and drop-offs on community shuttles across metropolitan Portland.

To the uninitiated, the logistics can be challenging. For example, a senior caller may need to travel to a doctor's appointment from his daughter's house in suburban Beaverton, then catch a ride to a mosque in southeast Portland before heading back home.

Fulfilling that itinerary demands close listening and careful networking. Some rides are fulfilled by staff, volunteers, or a partner social service agency. Or Ride Connection may reimburse a neighbor who regularly provides a lift to the grocery store. It also operates its own fleet of accessible vans, which volunteers can drive. Ultimately, the organization's approach to mobility management is less like a silver bullet and more like buckshot. The staff members try whatever works.

It helps that Portland has mobility options to manage: TriMet, the regional transit agency, operates almost 80 bus lines, five light-rail lines, and a commuter rail system. The city has



Far Horizons
Driver rehabilitation specialists can help seniors remain at the wheel or return to the road after illness.

Not Taken for a Ride

Why Uber, Lyft, and self-driving cars aren't yet the answer to the senior-driving riddle.

HOW WILL YOU navigate the world when you can't drive anymore? You'll have to wait years if you want to be chauffeured around in a self-driving car. A more immediate solution might be found in the thousands of drivers just an app-tap away through Lyft, Uber, and other digital-age transportation providers. But even these have their drawbacks.

To start, less than a third of Americans

over the age of 65 own a smart phone, a prerequisite for using an app. (It's technically possible—but comparatively impractical—to preschedule a ride via a website.)

Seniors with mobility challenges might encounter another significant barrier: a lack of accessible cars. Uber offers a platform called UberWAV (for wheelchair-accessible

vehicle) in 12 North American cities and another, UberASSIST, in 23 North American cities. UberWAV is supposed to match wheelchair passengers with vehicles equipped with a hydraulic lift or ramp.

UberASSIST provides elderly or mobility-challenged riders with drivers who will help them into and out of a car.

But it's easier to publicize a service than to deliver it. In October

2016, a disability-advocacy group in Chicago called Access Living filed a lawsuit in federal court asserting that Uber had failed to provide the broadly equivalent transportation options required by the Americans With Disabilities Act. Specifically, the suit claimed that over a four-year period, beginning in August 2011 when Uber arrived in Chicago, the company provided

streetcar routes and an aerial tram that resembles an Airstream trailer on a ski-hill tow rope.

Ride Connection operates on an annual budget of about \$9 million, including almost \$2.3 million from TriMet. At the same time, diverting elderly and disabled passengers from pricey paratransit services saved TriMet \$10 million in 2015-16.

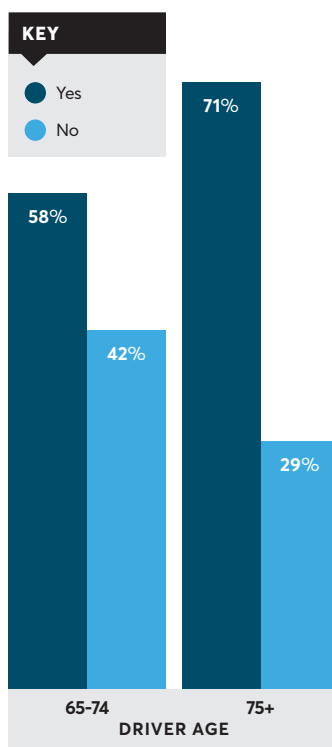
“They move the masses. We move individual community members,” says COO Julie Wilcke, who started out 25 years ago as a volunteer driver. (Ride Connection had to turn down 35,000 valid ride requests last year for lack of funding.)

If those seniors can manage to take TriMet buses, all the better. The challenge is that a 76-year-old who has never ridden a bus in her life may not feel inclined to start. What changes someone’s mind, according to Dennis McCarthy, a senior transportation expert at Nova Southeastern University in Florida, is trying it.

One of Ride Connection’s programs is called Rider’s Club: It offers monthly field trips for seniors on the city bus line. They go for the cultural outings and return with practical travel training. After three such tours, more than 90 percent of participants say they would “consider the bus for everyday

Imagining a Carless Future

Drivers who have considered the possibility that they may have to stay off the road some day:



Source: Based on responses to a spring 2016 Consumer Reports survey of 4,543 drivers nationwide.

living activities,” Wilcke says.

Avonne Dressler first called Ride Connection after she saw one of its vans with the phone number on the side parked outside the senior center in Forest Grove, a farming community and college town on the route west from Portland to the Pacific Coast.

“My husband did all the driving,” Dressler said recently over lunch at the senior center with six of her friends. She married at age 18 when her husband returned from service in WWII and, like many of her contemporaries, never learned to drive.

After Dressler’s husband suffered a brain bleed in 1997, she became his co-pilot. This involved calling out objects on the right side, which he could no longer see, and acting as his navigator. The beginning of Alzheimer’s was the end of her husband’s driving.

Dressler and her husband struggled to adapt to their new life without a car. “I don’t think you ever are ready to lose an ability to be on your own,” she said.

Dressler, 89, has been a widow for eight years. “I don’t just wither on the vine,” she said. Daily service from Ride Connection helps make that possible. It shuttles her to the senior center for lunch and on Fridays to the Hair House, where she has kept a standing weekly appointment since 1981. On Saturdays

exactly 14 rides to customers who used a motorized wheelchair.

Uber issued a statement at the time saying that it was “committed to increasing mobility and freedom for all riders and drivers,” including the disabled. (In May, the Chicago mayor’s office announced a major increase in wheelchair-accessible transit options by making 50 wheelchair-accessible

vehicles from Lyft, Uber, and VIA available within six months.)

UberASSIST, which relies on regular Uber cars, could be a boon to older adults who use a cane, walker, or folding wheelchair. But Uber doesn’t require or pay its drivers (independent contractors) to get UberASSIST training, and there’s no financial incentive for U.S. drivers to provide these rides, which may demand

more loading time and door-to-door assistance. And when few UberASSIST cars are on the road, a driver may have to travel several minutes to reach a rider and then spend more time to help him or her into the car but can only start the meter once the passenger is buckled in.

Uber declined to specify how many UberASSIST vehicles may be available in any market in the U.S.

A spokeswoman said the company is piloting different types of ASSIST models across the globe, and in many cities it’s working well. “We still have more learning to do before it is a widespread success,” the spokeswoman said.

Lyft and Uber have forged dozens of partnerships over the past year with senior residences, major health systems, and even the paratransit service of

the Massachusetts Bay Transportation Authority. Last January Lyft debuted a “concierge” feature, which allows selected care providers to book a trip for a senior; Uber says it offers a similar service. These services have the potential to lower the cost and wait times for nonemergency medical transportation, but most passengers with limited mobility will still have to wait for their ride.

she goes grocery shopping with her daughter and then to lunch.

Of the seven people at the table, the youngest was 77 years old, and everyone but Dressler was still driving. The oldest, at 95, was the Gulf Stream owner, Eldon Bartlett, who recalled that he once had a fender-bender.

"I ran into the side of a '38 Ford and had to buy him a new hubcap," Bartlett said. When lunch ended, he offered me a ride to the train station, 8½ miles away. I accepted with nary a hesitation.

Planning for the Future

Most of us understand that we need to plan for a time when we surrender our car. But very few of us actually prepare for that eventuality, says Marottoli, the Yale professor. "We should but we don't," he says. "It's not unique to this situation or age group."

It was all the more exceptional, then, to meet the future occupants of a new 27-unit development called PDX Commons in Portland's Sunnyside neighborhood. One of the project's

planners, a retired documentary filmmaker named Jim Swenson, 73, walked me around the bohemian streetscape.

The number 15 bus stopped in front of the new residence every 7 to 15 minutes before rumbling downtown. This being Portland, the retail offerings down the street include a video-rental shop (90,000 titles), a bespoke hatter, and a storefront advertising children's ukulele lessons. Swenson can also walk easily to a grocery store, a public library, and a pharmacy. Someone had counted 175 places to get a meal within a 1-mile radius. A future Commoner had already cashiered her Volvo and parked some of the proceeds in a new bike.

After its midyear opening, Swenson said, PDX Commons would become the first "co-housing" community in Portland dedicated to seniors. Each buyer will own a self-contained condominium, and some 5,000 square feet have been given over to shared amenities: a commercial kitchen; a 50-seat dining hall (which could double as a yoga studio), a wet bar, and

suites for overnight guests that could also become rooms for healthcare attendants. Instead of driving to find a community, these seniors plan to build one under their own roof.

Co-housing communities were originally inspired by intentional communities in Denmark called *bofaelleskaber* (or "living together"). The Cohousing Association of the United States lists a dozen completed senior communities, with the greatest number being in California and New Mexico. Another two are under construction, and a dozen more hope to graduate from the planning stage.

The monthly potluck dinner Swenson and his wife, Janet Gillaspie, often attend is filled with a prosperous and progressive crowd in their late 50s, 60s, and 70s. Two midwives, an auto executive, and a Lutheran bishop were among the Commoners at a gathering last winter. When they talked about driving into old age, many had recently observed the trajectory of their senescent parents.

Gillaspie's mother and father developed dementia in their early 80s. They had just built a new showpiece home. They had thought ahead, locating the master bedroom and a bathroom on the main floor.

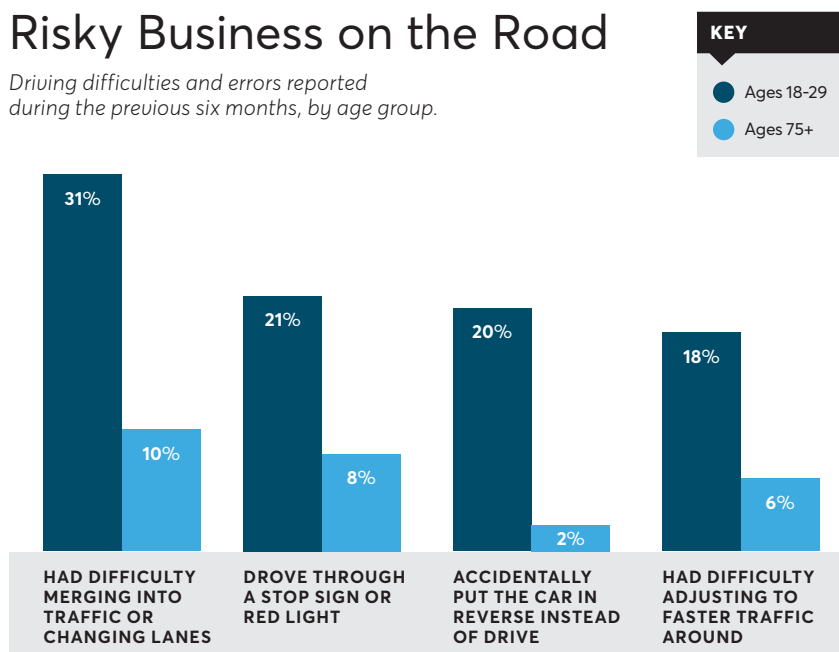
What they seemingly hadn't considered was that the house with the beautiful view would be isolated, an hour north of Portland. Without a car they would be stuck there. That's what happened, and that's where they remained until relocating last year to a residential-care facility.

"It doesn't take a huge amount of personal experience to imagine what aging is going to be like," Gillaspie said. "If you don't make a plan, a plan will be made for you."

At 61, she's still working as an environmental consultant. She can't predict how the experiment of PDX Commons will turn out. But it looks like a pretty good plan, she said. One that she has made for herself.

Risky Business on the Road

Driving difficulties and errors reported during the previous six months, by age group.



The Top 25 New Cars for Senior Drivers

Our picks combine reliability, safety, and senior-friendly features.

Rank	Make & Model	Vehicle Class	Price	Overall Score	Senior Features				Safety Features			
					Front-Seat Access	Visibility	Control	Headlights	Backup Camera	Automatic Emergency Braking	Forward-Collision Warning	Blind-Spot Warning
<p>Senior drivers and others with limited mobility need a car that's easy to get into and out of, with controls that are easy to reach and intuitive to use. We've combed through our ratings to find the 25 new models that we think best fit the bill. All are recommended by Consumer Reports and earned an Overall Score of Excellent or Very Good in their respective categories (representing road-test performance, predicted reliability, owner satisfaction, and safety).</p> <p>We determined the rankings in this chart by giving special consideration and extra weighting to specific features we think are essential for senior drivers:</p> <p>➤ Front-seat access: Low door sills, wider openings, and step-in heights that reduce the need for ducking or climbing make entry easier for those with physical limitations.</p> <p>➤ Visibility: We chose cars that enable tall, medium, and shorter drivers to see out of the front, sides, and back.</p> <p>➤ Controls: These cars have easy-to-read gauges and intuitive controls for changing the radio, shifting gears, and adjusting the heating and cooling.</p> <p>➤ Headlights: Powerful headlights can make driving at night easier for people with decreasing or compromised vision.</p> <p>The symbols in the Senior Features columns represent vehicles that excel for those attributes when compared with the other recommended vehicles on the list.</p>	1	Subaru Forester	Compact SUV	\$22,595-\$34,295	83	•	•	•	Std.	Opt.	Opt.	Opt.
	2	Subaru Outback	Wagon	\$25,645-\$38,640	75		•	•	Std.	Opt.	Opt.	Opt.
	3	Kia Soul	Compact Car	\$16,100-\$35,950	71	•		•	Opt.	NA	Opt.	Opt.
	4	Subaru Legacy	Midsized Sedan	\$21,995-\$31,640	79		•	•	Std.	Opt.	Opt.	Opt.
	5	Kia Sportage	Compact SUV	\$23,200-\$34,200	76	•		•	Std.	Opt.	Opt.	Opt.
	6	Toyota Highlander	Midsized SUV	\$30,630-\$47,880	84	•			Std.	Std.	Std.	Opt.
	7	Toyota Prius V	Compact Car	\$26,675-\$30,935	71	•		•	Std.	Opt.	Opt.	NA
	8	Toyota RAV4	Compact SUV	\$24,910-\$36,150	79	•		•	Std.	Std.	Std.	Opt.
	9	Honda Odyssey (2017)	Minivan	\$29,850-\$45,325	79	•			Std.	NA	Opt.	Opt.
	10	Nissan Rogue	Compact SUV	\$23,820-\$32,510	71	•		•	Std.	Opt.	Opt.	Opt.
	11	Honda Accord	Midsized Sedan	\$22,455-\$35,955	82		•	•	Std.	Opt.	Opt.	NA
	12	Ford C-Max Hybrid	Compact Car	\$24,170-\$31,770	73	•		•	Std.	NA	NA	Opt.
	13	Hyundai Sonata	Midsized Sedan	\$21,600-\$34,350	75		•	•	Std.	Opt.	Opt.	Opt.
	14	Toyota Camry (2017)	Midsized Sedan	\$23,070-\$31,370	84		•	•	Std.	Opt.	Opt.	Opt.
	15	Subaru Crosstrek	Subcompact SUV	\$21,695-\$25,195	76		•	•	Std.	Opt.	Opt.	Opt.
	16	Toyota Sienna	Minivan	\$29,750-\$47,310	79	•			Std.	Opt.	Opt.	Opt.
	17	Honda CR-V	Compact SUV	\$24,045-\$33,695	77	•			Std.	Opt.	Opt.	Opt.
	18	Honda Pilot	Midsized SUV	\$30,595-\$47,070	75	•	•		Std.	Opt.	Opt.	Opt.
	19	Kia Forte	Compact Sedan	\$16,490-\$23,690	76		•	•	Opt.	Opt.	Opt.	Opt.
	20	Ford Escape	Compact SUV	\$23,600-\$34,800	71	•		•	Std.	NA	Opt.	Opt.
	21	Toyota Corolla	Compact Sedan	\$18,500-\$22,680	77		•	•	Std.	Std.	Std.	NA
	22	Kia Sorento	Midsized SUV	\$25,400-\$45,700	82	•		•	Opt.	Opt.	Opt.	Opt.
	23	Ford Flex	Large SUV	\$29,710-\$42,710	74	•	•		Std.	NA	Opt.	Opt.
	24	Hyundai Santa Fe	Midsized SUV	\$25,350-\$38,250	78	•		•	Std.	Opt.	Opt.	Opt.
	25	Hyundai Tucson	Compact SUV	\$22,700-\$31,175	75			•	Std.	Opt.	Opt.	Opt.



Faster, Fresher, Cheaper

Food shopping has undergone a revolution as consumers demand local produce, organic choices, low prices, and more convenience. Here, how to make the most of reimagined supermarkets, boutique options, and online grocers.

by Tobie Stanger



No More One-Stop Shopping

Each month 68 percent of Americans shop at five different types of food retailers.

A

nnMarie Henry cares a lot about the food her family eats. During growing season in her town of East Nottingham Township, Pa., the 35-year-old stay-at-home mom walks down the street to her Amish neighbors' farm to buy fresh eggs and pesticide-free strawberries, vegetables, and herbs. She skips the supermarkets near her home to purchase the "perfect" organic oranges and lemons that she says she can get only at Wegmans, a 30-minute drive away. About once per month, she'll also make a special trip to Trader Joe's, 40 minutes away, to load up on the organic brown rice and quinoa noodles she feeds her 1-year-old, Adam.

When Henry and her husband, Bill, 34, a public-school music teacher, feel pressed for time, they grab the basics at a local Giant supermarket. Bill goes to BJ's Wholesale Club on occasion. They sometimes have meal kits delivered by Blue Apron and HelloFresh. And they use AmazonFresh, the online grocery delivery service, which charges \$15 monthly on top of the \$99 annual Amazon Prime subscription. Henry admits that getting organic produce and meats delivered to their door is an indulgence. "But the convenience factor is worth every penny," she says.

Few families have the good fortune of having an Amish neighbor, but in

every other way the Henrys typify the new American food shopper, who wants food that's very fresh and minimally processed, and satisfies an ever-more-adventurous palate. We seek out specialty grocers and farmers markets to get it, even if it means literally going the extra mile. Each month 68 percent of Americans shop at five or more types of food retailers—convenience stores, discount supercenters, farmers markets, specialty/natural-food stores, supermarkets, and warehouse clubs. In addition, we might go to more than one of each type of store, according to the Hartman Group, a food and beverage industry consulting

company in Bellevue, Wash. "Today the choices are extraordinary," says Laurie Demeritt, the company's chief executive officer.

End of the Middle-Class Market?

Where does the traditional grocery store fit into this mix? Experts say the supermarkets that have anchored many a community are struggling to compete with higher-end retailers such as Wegmans on one hand and bargain vendors like Walmart and Costco on the other. Witness the disappearance of the Great Atlantic & Pacific Tea Company, otherwise known as A&P, which folded in 2015 after 156 years.

"Just as the middle class is shrinking, the middle class of grocery stores is being challenged," says Leslie Sarasin, president and CEO of the Food Marketing Institute (FMI), a grocery industry group.

The supermarkets that are doing well are premium stores such as Wegmans, specialty stores like Trader Joe's, and discounters such as WinCo. "Traditional supermarkets are stuck in the middle," Demeritt says.

Consumer Reports subscribers' preferences mirror these trends. In our latest ratings of 62 supermarkets and food retailers, based on responses from almost 58,000 subscribers, East Coast chain Wegmans earned the top spot, a place it has held since 2006. (See our ratings chart, on page 42.) It's beloved for most everything, from the quality and variety of produce to the courtesy of staff.

Other stores that did very well overall include Trader Joe's, Publix, and the family-owned Market Basket chain, serving the Northeast. Walmart, with the largest market share for food and beverages of any U.S. retailer, scored well for competitive prices but otherwise was at the bottom of our ratings.

Mainstream grocery stores still have fans. Our survey that found 70 percent



What Wins Loyalty

"It's now values as much as value," one expert says about what makes Americans rate a grocer highly.

of CR readers were either completely or very satisfied with the supermarkets where they do most of their grocery shopping. By contrast, only 48 percent told us they're very or completely satisfied with their markets' healthy offerings, and only 29 percent said the same about the price of their markets' organic options.

Keys to Shopper Satisfaction

What draws us to a market week after week? A wide selection, high-quality produce, and good prices are the main attractions, our survey respondents say. But stores that offer an alluring sensory experience—the scent of cinnamon-apple pies from the bakery oven, the sight of plump purple and ivory eggplants in a rustic

wooden case—bring us back.

Attention to these details might explain Wegmans' popularity. The chain, with 92 stores from Massachusetts to Virginia, charmed our survey respondents with its selection of healthy options, customer service, reasonably competitive prices, and fresh store-prepared foods, and the quality of its poultry and meats, among other stand-out features. "Wegmans produce is the freshest in town, and the selection is huge," Barbara Goldenberg, of Frederick, Md., says of her local store.

What else contributes to appreciation of a grocer? Stores with the highest scores for staff courtesy all did well. Increasingly, a commitment to principles that shoppers deem important—for instance, fair-trade goods, sustainably and locally farmed foods, and fair labor practices—also wins loyalty, says David

Fikes, FMI's vice president of communications and consumer/community affairs. "It's now values as much as value," he says.

But price is and always will be a great motivator. Grocers with the highest scores for competitive prices are for the most part near the top of our ratings. One such store, Woodman's, which operates in Illinois and Wisconsin, passes savings on by selling certain items in bulk. WinCo, with 115 stores in the West, also sells bulk items, and takes no credit cards to avoid transaction fees.

The growing variety of both low- and premium-priced food stores means a dedicated WinCo bargain hunter could be the same person frequenting Whole Foods for pricey organic cherries, Demeritt says. "People go to different places for different things," she says.

The Changing Landscape

To respond to our evolving food-shopping tastes, supermarkets are offering novel formats, products, and services:

Smaller footprints. Rather than taking a one-store-fits-all approach, some grocers are hypertargeting a single customer type and scaling back in size as a result. Those new locations offer a more “curated” experience—say, selling just a few choices of organic olive oil instead of many—saving shoppers the work of distinguishing among brands.

To attract time-pressed millennials, Whole Foods has opened new Whole Foods Market 365 stores in four U.S. locations. The smaller-format stores feature primarily Whole Foods’ 365 Everyday Value products. Focusing on the higher-profit store brand and managing fewer square feet also could help the company’s profit margins, notes Asit Sharma, senior consumer goods analyst at the investing website Motley Fool.

Aldi is a fast-growing, no-frills vendor

that operates stores about a third the size of a typical American grocer. It sells a limited selection, mainly of private-label goods; our readers rated it highly for competitive prices.

Local farm partnerships. Many supermarkets have added locally grown produce sections. Dierbergs, which debuts in our ratings this year, is one example. The family-owned chain, with locations mainly in Missouri, shows a photo gallery of local partner farms on its website. Readers gave the quality of Dierbergs’ local produce top marks.

Meal kits without the wait. To compete with online meal-kit vendors, Giant Food Stores, based in Pennsylvania, offers fresh meal kits through its partnership with the Peapod grocery delivery service. Each \$15 box comes with enough premeasured, fresh ingredients to make two servings following a provided recipe. (See our reviews of five meal-kit services in the October 2016 issue, as well as at CR.org/mealdelivery0717.)

Home delivery. Responding to the threat from online grocers, many chains

now offer this amenity. (See our ratings of online grocers, on page 37.) Safeway charges \$13 to deliver orders of less than \$150 and \$10 for orders of \$150 or more. Kroger and Walmart have begun testing door-to-door delivery in certain locations, with Walmart using the delivery service Deliv and car services Lyft and Uber. Publix is testing home delivery in certain areas of the Southeast.

Curbside service. Walmart offers a “click and collect” system called Online Grocery Pickup in more than 30 states: Consumers buy online and drive to a Walmart store to pick up their bagged orders at designated times for no fee. Kroger’s ClickList service, available in about 300 locations, works the same way. Patrons pay a \$5 pickup fee, waived for the first three deliveries. AmazonFresh is experimenting with curbside pickup in two Seattle-area locations. The retailer plans to expand the service to Amazon Prime members without requiring an additional AmazonFresh membership fee.

Continued on page 36 ➤



What Labels Mean—and Don't

WE ALL WANT healthier foods, but reading labels won't always help you spot them. Many terms are defined and regulated by the Food and Drug Administration or the Department of Agriculture, depending on the type of food. But similar-sounding terms might not be.

And even when a term has a clear definition, using it on a package can give the impression that a food is healthy overall when it might not be. For example, a study in the *Journal of the Academy of Nutrition and Dietetics* found that shoppers gravitate toward labels

such as “low sodium,” “low fat,” and “reduced sugar,” but foods and drinks with these claims weren’t significantly healthier than similar products without the claims and in some cases were less healthy. How can that be? Because a low-sodium soup may well fall within the FDA guidelines of 140 mg or less per serving but could still be high in calories, fat, or sugars.

Here, then, are pairs of terms to keep distinct in your mind:

‘Organic’ vs. ‘Natural’

➤ **ORGANIC** This term is strictly regulated and can

be on a label only when farmers and processors adhere to federal standards designed to promote a more sustainable food system. To be called organic, a food must contain at least 95 percent organic ingredients, which means crops are grown with fewer pesticides and no synthetic fertilizers or genetically modified organisms, and farm animals are fed organic feed and raised without the routine use of drugs such as antibiotics. Processed foods labeled “organic” also cannot contain artificial ingredients unless they go through a rigorous

Shop Like a Food Safety Expert

MANY OF US just want to get in and out of the supermarket quickly. But in our rush, “some of us handle the food we buy in a way that poses safety risks, like spoilage and cross-contamination, that can result in illness,” says James E. Rogers, Ph.D., director of food safety and research at Consumer Reports. To avoid spreading harmful germs, “you need to practice the fundamentals of food handling, just as when you’re cooking at home,” says Shelley Feist, executive director of the Partnership for Food Safety Education. To stay truly safe, you may need to risk looking slightly germophobic in public, but it’s well worth it.

➤ **Clean your shopping cart.** Wipe down the child seat, as well as the cart handle, with a disinfecting wipe. A study from the journal Food Protection Trends found E. coli on 50 percent of shopping cart handles. If your store doesn’t provide hand sanitizer and wipes, take your own.

➤ **Use hand sanitizer.** It’s a must after handling raw and packaged poultry at the meat counter if soap and water aren’t available.

➤ **Take care of your reusable bags.** They may be great for the environment, but if you don’t keep them clean, they could be hazardous to your health. Store bags in the cleanest area of the car and launder or wipe them down with hot, soapy water at least once per month. “Meat, poultry, and even produce can

leave behind bacteria that can linger in the bag and contaminate other food,” says Marianne Gravely, M.S., a food safety specialist with the Department of Agriculture’s Office of Public Affairs and Consumer Education.

➤ **Check your eggs.** Open the carton and make sure none are cracked. “If one cracks on the way home, just make sure to cook it within 24 hours,” Gravely says.

➤ **Bag meat of any kind separately.** Juices from meat and poultry can drip onto other food, spreading bacteria, Feist says. “At home, keep it in that same bag in the refrigerator until ready to use.”

➤ **Organize your cart.** A Journal of Food Protection study observed shoppers putting poultry in their cart’s main basket, with other foods around it, 84 percent of

the time. “Keep meat and produce separated,” Gravely says. “And keep cold and frozen foods together in your cart and grocery bag, so they help keep each other cooler longer.”

➤ **Shop the perimeter last.** The store is arranged for you to pick up produce, meat, and dairy before shopping the main aisles, but it’s safer to put products requiring refrigeration into your cart last. “That way they’ll spend the least time possible out of the cold,” Gravely says.

➤ **Get food home quickly.** Make grocery shopping your last errand before heading home. Perishable food should not be out of refrigeration for more than 2 hours, or 1 hour in hot weather. Buy some extra time by keeping a cooler in your car for storing perishables. —Sally Wadyka

review process, and have no artificial preservatives, colors, or flavors.

➤ **NATURAL** A 2015 nationally representative Consumer Reports survey found that 62 percent of consumers seek out foods with the “natural” label, and roughly as many of them think this term means no pesticides, no antibiotics, and other attributes of organic. But it doesn’t. There is little government regulation of this term. CR has petitioned the FDA to ban it because it is so misleading. Recently the agency called for public comments on the use of the

word on labels, and it is currently reviewing them. Meanwhile, manufacturers continue to use it.

‘Pasture Raised’ vs. ‘Free Range’

➤ **PASTURE RAISED** This term alone on your egg carton does not have any meaning. Look for it in combination with the “American Humane Certified” or the “Certified Humane” seal. Together they mean that the hens must be outside every day and have lots of space to roam.

➤ **FREE RANGE** This claim on egg cartons implies that the hens get to

move freely outdoors. But the label has no meaning alone. Look for it in combination with the “American Humane Certified” seal to ensure that the hens have sufficient outdoor space to roam.

‘100% Whole Grain’ vs. ‘Made With Whole Grains’

➤ **100% WHOLE GRAIN** A product with this label should contain exclusively whole grains and should have whole wheat flour (or another whole grain) listed as the first ingredient.

➤ **MADE WITH WHOLE GRAINS** This means a

product might contain only a small amount of whole grain—the rest of the grains can be refined.

‘Low Sodium’ vs. ‘Reduced Sodium’

➤ **LOW SODIUM** Because it guarantees no more than 140 mg of sodium per serving, a product with this term is the right choice for anyone trying to keep his or her salt intake in check.

➤ **REDUCED SODIUM** For this designation, a product has to have at least 25 percent less sodium than the full-sodium version of

the same product. It could still deliver a big sodium punch.

‘Sugar Free’ vs. ‘Unsweetened’

➤ **SUGAR FREE** Such a product contains less than 0.5 gram of sugar per serving—including naturally occurring fruit and milk sugars. But it can (and often does) contain artificial sweeteners.

➤ **UNSWEETENED** No sugars—or artificial sweeteners—have been added to the product. It may still contain sugars that occur naturally. —Sally Wadyka

The Rise of the Virtual Market

Amazon's real impact on the industry, though, is in food delivery. In 2016 Consumers used its food and beverage channels—including Prime and Pantry for packaged goods and AmazonFresh for fresh and nonperishable groceries—more than any other online grocery retailer, says Cowen and Company, an investment research firm.

AmazonFresh tops our satisfaction ratings of four online grocers, though its competitors—Instacart, Peapod, and FreshDirect—are close behind. Sixty-one percent of readers who used AmazonFresh told us they were highly satisfied with the service. Shopping through online grocers is still a modest portion of the marketplace; in the U.S., just 23 percent of households are buying

food and beverages this way, according to research released in January by FMI and Nielsen. But interest is projected to climb; 72 percent of all ages surveyed—and 80 percent of surveyed millennials—expect to buy groceries online in the future, the report notes.

Amazon's innovations could eventually influence the operations of walk-in stores as well. Bucking its virtual roots, the retail giant last year announced the opening of a new grocery store prototype: a location in Seattle with no check-out lanes. Instead of paying at a cashier (self-checkout or otherwise), customers would simply grab what they wanted and leave, without ever engaging with an employee. This would be made possible through a smartphone app and sensors placed throughout the store. Payment would be made automatically when the app linked to customers'

mobile-payment services. Initial customers were Amazon employees; in March the company postponed a public rollout, citing technical problems.

Could the success of online groceries spell the end of the traditional kind? Not likely, analysts say. Stores will “just be smaller, more efficient, and focused on value-added shopping,” says Tré Musco, CEO and chief creative officer of Tesser, a brand-strategy and retail design firm based in San Francisco. “There will be more delivery and ordering online. Even if there's no one at checkout, you might have face-to-face conversations with an in-house dietary consultant or the person who loads your groceries into your car, or a chef preparing meals to order.

“As long as people want to see, touch, and smell their fresh food,” Musco adds, “the brick-and-mortar store is here to stay.”

Virtual Grocers Make Gains

Amazon is a dominant online food seller; its AmazonFresh service topped our online grocer ratings.



Do Online Grocers Really Deliver?



THE FOUR ONLINE grocers we rated for customer satisfaction—based on 1,721 reader responses—operate differently. AmazonFresh, FreshDirect, and Peapod deliver from their own regional fulfillment warehouses. Peapod has exclusive relationships with regional supermarkets Giant Food and Stop & Shop but fulfills your order at its

own warehouses. Instacart teams up with a number of stores in your vicinity and hires a shopper to go to those places and shop; you can have everything delivered at once, but orders from each store must cost at least \$10.

Convenience and saving time are—no surprise—online grocers' major appeal. Judith Freed, a CR subscriber who lives

in a Brooklyn, N.Y., high-rise, loves that she can schedule a FreshDirect delivery to her apartment door within a day. AnnMarie Henry, who lives in southeastern Pennsylvania, appreciates the AmazonFresh website's features. "You can create specific grocery lists like 'taco night' or 'dairy products,' which helps with meal planning," she says.

Marla Ballenger of Chicago, who uses Instacart, likes that she can text with the shopper who's picking out her groceries and specify substitute items if the store is out of what she wants. But, she notes, if you're the kind of shopper who needs to squeeze the melons, don't use these services for produce. "No one picks out fresh fruit and veggies like you do yourself."

	DELIVERY AREA	FOOD-RETAILER AFFILIATIONS	MINIMUM ORDER, DELIVERY CHARGES, AND OTHER FEES	SUBSTITUTION POLICY
AmazonFresh 74 READER SCORE	Baltimore; Chicago; Dallas; Los Angeles; Md.; New York City; northern Va.; Philadelphia; Sacramento, Calif.; San Diego, San Jose, Calif.; San Francisco; Seattle; Washington, D.C.; and others.	Not affiliated with another retailer, but customers may be able shop for items from local merchants through the company's Local Market program.	Required \$99 Amazon Prime subscription. AmazonFresh \$15 monthly fee covers unlimited orders of \$40 or more. For orders of less than \$40 there is a \$10 delivery fee.	Substitutions are made at the company's discretion. You pay only if the substitution is almost identical to what you ordered, at the lower of the two prices.
Instacart 70 READER SCORE	Atlanta; Baltimore; Boston; Charlotte, N.C.; Chicago; Columbus, Ohio; Dallas; Denver; Detroit; Houston; Indianapolis; Las Vegas; Los Angeles; Louisville, Ky.; Milwaukee; New York City; Orlando, Fla.; Philadelphia; Phoenix; San Diego; San Francisco Bay Area; Seattle; St. Louis; south Fla.; Tampa, Fla.; Twin Cities; Washington, D.C.; and others.	Acme, Andronico's, Bi-Rite, BJ's Wholesale Club, Costco, Cub Foods, Fairway, Food Lion, Giant Food, Good Grocer, Harris Teeter, H-E-B, H mart, Jewel-Osco, Key Food, Kroger, Lakewinds Food Co-op, Mariano's, Market Basket, Mollie Stone's, Publix, Ralph's, Safeway, Smart & Final, Target, Wedge Community Co-op, Whole Foods, and others.	Delivery free on first order of \$35 or more. Normal minimum order \$10. Variable delivery fee. "Busy Pricing" charged during peak delivery times raises delivery price. 10% optional "service fee" to provide "high guaranteed commissions" to its shoppers, but the fee isn't a tip and doesn't go directly to an individual shopper.	The Instacart shopper contacts you if what you ordered is out of stock and tries to replace it with the next best option. Items that can't be replaced will be removed from your bill.
Peapod 69 READER SCORE	Conn.; Indianapolis; Mass.; Md.; metro Chicago; Milwaukee; N.J.; N.Y.; Philadelphia and southeast and central Pa.; R.I.; southeast Wis.; southern N.H.; Va.; Washington, D.C.	Giant Food, Stop & Shop.	Minimum order \$60. Delivery fee: \$9 to \$10 on orders of \$60 to \$100, \$7 to \$8 on orders of more than \$100. Available discounts can lower delivery fee to \$3 per order.	You indicate whether to allow substitutions. Peapod delivers a comparable product at no extra cost to you. Or you can return the substitution to the Peapod driver for a full refund.
FreshDirect 69 READER SCORE	Fairfield, Conn.; Hamptons, N.Y., in the summer; Jersey shore; metro New York City; New Castle, Del.; N.J.; Philadelphia; Washington, D.C.	Not affiliated with another retailer.	Minimum order \$40; \$99 in Hamptons. Delivery: \$7 to \$10; \$16 to Hamptons.	Substitutions are made at the company's discretion. Customers who aren't happy can email FreshDirect, "so we can make it right," in the company's words.

HOW WE SURVEY: A total of 57,805 Consumer Reports subscribers completed the 2016 Supermarkets Survey; 6 percent have used an online grocery. Online grocery Reader Scores are based on 1,721 ratings of online grocers. Reader Score refers to how respondents rated overall satisfaction with the online grocery. A score of 100 would mean all respondents were completely satisfied; 80 would mean very satisfied, on average; 60, fairly well satisfied. Differences of fewer than 5 points aren't meaningful.

How to Save Time & Money

CONSUMER REPORTS asked experts as well as our Facebook followers for their best time- and money-saving food shopping tips. Pick a few of these tactics to try in the coming weeks; you could shave up to 40 percent off your bill.

1. Look high and low.

You'll find the lower-cost generic versions of cereal, cake mixes, paper goods, and other high-turnover staples on the very lowest and highest supermarket shelves. Retailers can charge manufacturers a fee to be at eye level.

2. Use discount apps.

Two we like are Ibotta and Flipp. Both coordinate your store loyalty cards with current discounts and coupons. With Flipp, you scan the app with the market's checkout scanner to apply savings at the point of sale. With Ibotta, you

select rebates in the app and photograph your receipts to import savings to an Ibotta account. Savings are transferred to a payment app, such as PayPal, or a gift card. "I recently cashed out for \$100 in Amazon gift cards," says Geriann McMurray-Markwell, an Ibotta user in Nampa, Idaho. "It took me about a year but was totally worth the minimal effort." Mary-Ann Johnson of Flagstaff, Ariz., says she uses Kroger's club card app to get free products and samples. Some loyalty programs, notably Safeway and Stop & Shop's, also let you build rewards toward gas purchases at affiliated gas stations.

3. Get navigation help.

Some store loyalty club apps let you locate items by aisle, which can help you avoid crisscrossing aisles—and avoid more temptations. At major

chains, the Flipp app can do the same.

4. Keep a calculator handy.

Unit price shelf stickers under each product can help you compare. But if the store doesn't have the stickers—only nine states require them—use your smartphone's calculator. Divide the price by the number of units in each package you're comparing. If, say, one soda's price is per fluid ounce and the other's is per liter, ask Google how many ounces are in a liter and do the conversions. Consumers Union, the advocacy and mobilization arm of Consumer Reports, urges supermarkets to put unit-pricing stickers on their shelves.

5. Ask for a rain check.

When a sale item is sold out, ask a store employee for a rain check—a paper IOU—that you can use like a coupon when the item's in stock. "I've saved

hundreds of dollars this way," says Jeanette Pavini, a consumer savings analyst at Quotient, which is based in Mountain View, Calif., and runs the shopping app and website Coupons.com.

6. Go with store brands.

CR's trained tasters have found store brands with quality equal—or superior—to that of brand-name items, at prices usually 15 to 30 percent lower. That's because generics are sometimes made by the same companies that make the big-brand foods. Trader Joe's was a standout for its store brands in our survey. In past taste tests of 57 store brands, we found that 33 were as good as or better than the comparable name brand, including those in the product categories of frozen shrimp, roasted cashews, cranberry juice cocktail, ketchup, maple syrup, mayonnaise, frozen mixed vegetables, shredded mozzarella, and vanilla ice cream.

7. Use a cash-back card.

Consumer Reports' Credit Card Adviser Comparison Tool found great potential savings from the American Express Blue Cash Preferred card, which pays back 6 percent on the first \$6,000 in groceries each year, as well as

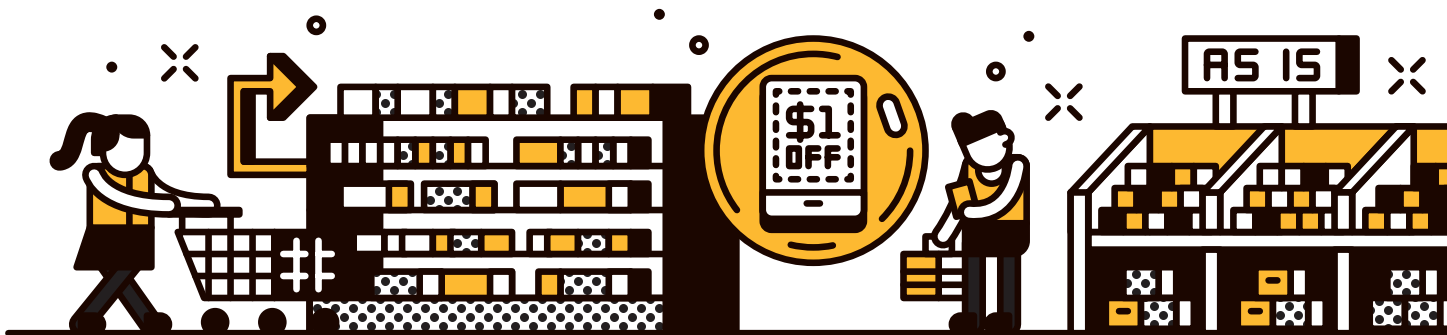
3 percent on gas and department-store purchases, and 1 percent on other purchases. It also returns \$150 if you spend \$1,000 in the first three months. A user spending \$200 monthly on gas, \$500 on groceries, \$100 on department-store buys, and \$300 on other items would save \$583 in the first year of card ownership and \$1,449 in the first three years, even factoring in the \$95 annual fee. To find the best card for you, go to [CR.org](https://www.consumerreports.org/cr.org) and type "credit card comparison tool" in the search bar.

8. Shop at quiet times.

According to a survey by the Time Use Institute, a consulting company, the busiest time on weekdays is from 4 p.m. to 5 p.m. and the least busy is before 8 a.m. and after 6 p.m. On weekends the peak shopping time is from 11 a.m. to noon.

9. Inspect store circulars.

Only 46 percent of millennial shoppers in our recent survey said they read store circulars for weekly sales, compared with 51 percent of Generation Xers and 63 percent of baby boomers. Most circulars are online, making the task of checking them pretty painless even for the digital-first crowd.



10. Embrace coupons.

Find stores that double or even triple manufacturers' paper coupons. Certain retailers do it every day or week, others less regularly. In the Northeast, Stop & Shop doubles manufacturers' paper coupons every day. Bi-Lo, in Georgia, North Carolina, and South Carolina, doubles coupons with a value of 60 cents or less every day, unless noted otherwise at the individual store. (With both chains, other restrictions apply.)

11. Do a pantry inventory.

Americans throw away about a quarter of the food and beverages they buy, at a cost of up to \$2,275 annually for the average family of four, says the Natural Resources Defense Council. Use the free USDA FoodKeeper app for guidelines on how to store foods. (Also see our refrigerator ratings, on page 49.) Or do as Maggie Pallan, a professional chef in Las Vegas, does. She maintains a spreadsheet of what she has at home, to avoid buying duplicates. "I treat my home grocery shopping the same as my business," she says.

12. Get senior discounts.

Several chains, including Bi-Lo, Harris Teeter, Hy-Vee, and Publix, offer 5 percent discounts, either

on specific days or when you present a special store ID card. The Fred Meyer discount is 10 percent. In some cases you must be at least 60 to qualify.

13. Weigh bagged produce.

Prebagged produce is usually cheaper by the pound than individual pieces. Use the produce scale to compare bags because they're not uniform in weight. A CR reporter found 3-pound bags of red delicious apples at a Stop & Shop near our Yonkers headquarters weighing from 3.06 to 3.36 pounds, a 10 percent bonus.

14. Buy in bulk. When 10 cans of your favorite soup go on sale for \$10, load up. If you don't have room to store that many, check the promotion wording to see whether you're required to buy all 10 for the discount.

15. Track prices. For a few weeks, record prices of the items you buy the most. "You'll be able to find the best prices for specific goods and can stock up when a true price drop happens," says Terrence Briggs of Germantown, Md. Price-tracking also helps you see when a "10 packages for \$10" sale really is a sale and not just a come-on.

16. Find online bargains.

Online services often waive the delivery fee or give discounts for first-time customers. Even with the delivery charge, buying online can help you uncover savings for certain kinds of foods, notably snack bars, specialty diet food, coffee, and pasta, says Sam Gagliardi, head of e-commerce at IRI Worldwide, a market research company in Chicago. Online vendors such as AmazonFresh often offer prices up to half off regional grocery chains' prices because they match Walmart and warehouse clubs' national prices, Gagliardi explains.

17. Shop the drugstore.

Convenience stores, drugstores, and even gas station mini-marts can sometimes beat prices at traditional markets for staples such as milk and eggs. But be mindful of expiration dates, advises Heidi Chapnick, a partner at FreshXperts, a fresh-food retailing consulting company in Mamaroneck, N.Y. Food that has outlived its expiration date can still be sold, assuming it is "wholesome and fit for consumption" and not dangerous to consumers, according to the Food and Drug Administration.

18. Beware of prepared foods.

Ready-made items such as cranberry couscous, and lemon orzo with pine nuts can tempt when you're in a rush. But for simple items—say, sautéed greens—home prep can cost about half the price and take less than half an hour of work, our CR food experts say. A home-prep bonus: fewer unnecessary ingredients. A 2016 CR report found that supermarket-prepared items might not be made in the store and might have preservatives and excess salt.

19. Look for 'as is' items.

The overripe bananas you'll find at a discount could be perfect for homemade banana bread. Learn where stores have their clearance sections, says Annette Economides, who with her husband, Steve, runs the website MoneySmartFamily.com. Publix stores, for instance, place clearance items on a dedicated rack.

20. Bring your own bags.

This might make loading take a little longer but could also save you money at stores that charge for bags, as more and more municipalities require them to do. You'll also help reduce plastic

waste in the environment. See "Shop Like a Food Safety Expert," on page 35, to find out how to keep permanent shopping bags germ-free.

21. Shop on weekdays.

Certain items are cheaper on weekdays, when stores seek to clear inventory, says Bryan Leach, founder and CEO of the shopping app Ibotta. Consumer data collected through his app show that beer is 9 percent cheaper on Monday and most costly on Saturday, he says. Other best days to buy: Monday for ice cream and beauty products, Tuesday for wine, Wednesday for produce (though it's only a 3 percent discount), Thursday for cleaning products, and Friday for snacks. Monday, he adds, is the most pricey day for produce.

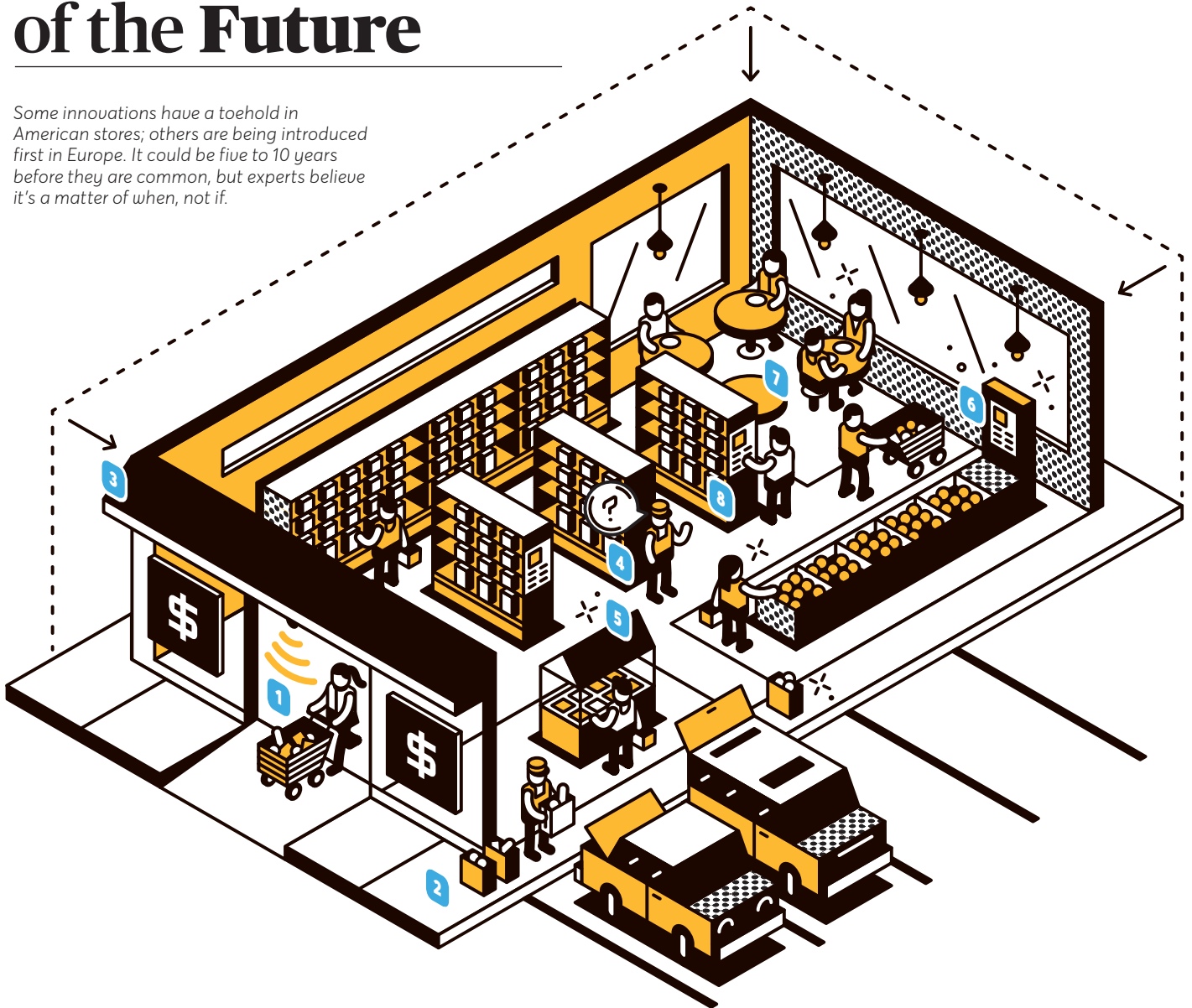
22. Use your freezer right.

Freezing large quantities of sale and seasonal food saves the average family of four \$2,000 per year, Annette Economides maintains. "Why pay \$4 a pound for blueberries in winter when you can thaw the ones you bought in summer for 99 cents?" she asks. The Economideses even freeze milk and cheese. Every 30 to 60 days they check the freezer and build menus based on what's there.



The Supermarket of the Future

Some innovations have a toehold in American stores; others are being introduced first in Europe. It could be five to 10 years before they are common, but experts believe it's a matter of when, not if.



1 Easy checkout. In-store sensors connected to a smartphone app keep track of each item you select. The app runs a tally. It also cross-checks your list or selected recipes to tell you what you forgot. As you exit, the app charges your mobile-payment system.

2 Curbside pickup. Order from your smartphone or computer. A staffer loads your bagged order directly into your car, within your chosen time window. Or you can request home delivery.

3 Smaller spaces. Newer stores will be smaller, with more space devoted to fresh produce, as well as deli and prepared items, and less space to interior aisles of branded package goods.

4 'How may I help?' Trained "concierges" wander aisles like boutique salespeople, offering meal-prep ideas and other suggestions. As you wander, store sensors connected to your smartphone trigger recommendations, too.

5 Grab and go. Meal kits, rotisserie chickens, and other prepared foods are near the front, where you can buy them in a hurry. Or have whole meals prepared fresh to order while you shop.

6 A feast of info. Sensors, detecting that you've picked up an item, launch a display showing nutritional data, possible recipes and food pairings, information on where and how the food was grown or raised, and even the farm's labor and animal-welfare practices.

7 Dynamic spaces. Movable walls, shelves, and fixtures can be configured to create an area for cooking demonstrations and tastings by day, a casual bistro by night. Older markets, removing interior shelves permanently, fill the space with fresh-fare "grocerants."

8 Virtual choices. Rather than encountering a dozen brands of Dijon mustard, you might find four, plus a screen you can scroll through to order one of the eight other varieties, which the store keeps in stock out of sight. The screen recognizes your smartphone and proposes new products to try. Your picks are delivered to you at checkout or directly to your home.

Healthy Shopping

Strategies for Vegans

ABOUT 3.7 MILLION AMERICANS follow a vegan diet, which is stricter than a vegetarian diet in that it eliminates all animal products—not just meat, poultry, and fish but also dairy, eggs, and even honey. A third of the U.S. population says they are trying to eat less meat. Vegan dining is not de facto healthier for you, though: Refined grains and grain products, candy, donuts, and potato chips can all be vegan, and a diet that centers on such foods can cause weight gain and increase your risk of heart disease and other health problems. Bearing this in mind, you can vegan-ize your shopping cart the healthy way with these five strategies:

Stock up on whole plant foods. If you're seeking the health benefits associated with a vegan diet, you should plan menus mostly consisting of beans, fruits, vegetables, whole grains, and nuts. "They're rich sources of vitamins, minerals, fiber, phytochemicals, and other substances that play a role in reducing the risk of chronic diseases like heart disease, high blood pressure, some cancers, and type 2 diabetes," says Reed Mangels, Ph.D., R.D., nutrition lecturer at the University of Massachusetts Amherst.

Look for vegan claims on the package. The "Certified Vegan" logo from the Vegan Awareness Foundation can be useful in quickly sussing out a food—although the absence of one doesn't indicate that a food isn't vegan. Some foods you think of as vegan may not be because they contain animal-derived ingredients. For example, fruit smoothies might contain whey powder (from dairy) and vegetable

soups might have chicken broth as a base. Even sugar isn't always vegan because bone char sourced from cattle might be used to turn the sugar white. (Organic sugar is not produced with bone char.)

Choose meat substitutes carefully. They aren't always as nutritious as the foods they are meant to replace. "Many are made with highly processed ingredients and can also be high in fat, sugars, or sodium," says Maxine Siegel, R.D., who oversees the food-testing lab at Consumer Reports. "Choose veggie burgers with at least 3 grams of fiber that contain vegetables, legumes, and grains like quinoa and rice rather than those with textured soy proteins and other additives," she says. And you don't need these foods to get the protein you need. "Most Americans, vegans included, get adequate protein, assuming they eat a variety of whole foods," Mangels says.

Be wary of fake dairy. If you pick the right ones, mock milks can provide protein and a boost of calcium that could otherwise be difficult for vegans to get. Soy milk and pea protein milk are sources of protein, and most are fortified with calcium, vitamin B12, and vitamin D. To avoid added sugars, opt for unsweetened varieties. In CR's analysis of Food and Drug Administration data, we found that rice milk contains detectable levels of arsenic. We recommend not giving rice milk to children younger than 5 and that older children be limited to 1½ cups per week, assuming they eat no other rice foods. Adults can have 3 cups per week. Vegan cheeses might not offer much, nutritionwise. A quarter cup of Daiya mozzarella shreds has only 1 gram of protein and 2 percent of your daily calcium needs, for example, compared with around 7 grams of protein and 20 percent of the calcium for the same serving of dairy mozzarella.

Be sure to get vitamin B12. It's found naturally only in animal foods, and you need it to form red blood cells and for neurological function. "Vegans need to have a reliable source of this essential nutrient," Mangels says. A number of vegan foods are fortified with it, but if you are sticking to a diet of mostly whole plant foods, take a daily supplement. —Rachel Meltzer-Warren

Ratings ➤ **Grocery Shopping Satisfaction** The highest-rated stores tend to score high in best prices and staff courtesy. Online subscribers can find the chart online and reorder the grocer list using multiple criteria, including region, at [CR.org/groceryratings0717](https://www.consumerreports.org/groceryratings0717).

Store	Reader Score	Survey Results											
		Store Cleanliness	Competitive Prices	Fresh Store-Prepared Foods	Staff Courtesy	Checkout Speed	Produce Quality	Produce Variety	Meat/Poultry Quality	Store-Brand Quality	Selection of Healthy Options	Prices of Organic Options	Local Produce Quantity
Wegmans	89	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Market Basket (NORTHEAST)	86	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Trader Joe's	86	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Publix	86	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Fareway Stores	85	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Costco	85	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Military Commissary	85	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Festival Foods (WI)	84	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Stater Bros.	84	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
H-E-B	84	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Sprouts Farmers Market	83	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
WinCo	83	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Aldi	83	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Dierbergs	83	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Mariano's	82	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Woodman's	82	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Hy-Vee	82	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Raley's	82	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Fry's	81	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Fred Meyer	81	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Dillons	81	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
King Soopers	81	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Harris Teeter	81	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Smith's Food & Drug	79	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Lowes Foods (NC, SC, VA)	79	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
QFC (QUALITY FOOD CENTERS)	79	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Meijer	79	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Hannaford	78	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Ingles	78	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Whole Foods Market	78	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Kroger	78	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
BJ's Wholesale Club	78	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Schnucks	78	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆
Save Mart Supermarkets	78	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆	⬆

Store	Reader Score	Survey Results											
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ShopRite	78	🟡	🟢	🟡	🟡	🟠	🟠	🟡	🟡	🟡	🟡	🟠	🟡
Food City (GA, KY, TN, VA)	77	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡	🟡	🟡	🟠	🟢
Big Y	77	🟢	🟠	🟢	🟢	🟡	🟡	🟡	🟡	🟡	🟢	🟠	🟡
Ralphs	77	🟢	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟠	🟡
Sam's Club	76	🟡	🟢	🟢	🟠	🔴	🟠	🟠	🟡	🟡	🟠	🟠	🔴
Giant (PA)	75	🟡	🟡	🟡	🟡	🟠	🟡	🟡	🟡	🟡	🟡	🟠	🟠
Weis	75	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟠	🟠
IGA	75	🟡	🟠	🟡	🟢	🟢	🟠	🟠	🟡	🟡	🟡	🔴	🟡
Cub Foods	75	🟡	🟡	🟡	🟡	🟠	🟡	🟡	🟡	🟡	🟡	🟠	🟠
Target/SuperTarget	75	🟢	🟢	🔴	🟡	🟠	🔴	🔴	🔴	🟡	🟠	🟠	🔴
Food Lion	74	🟡	🟡	🟠	🟡	🟡	🟠	🟠	🟠	🟡	🟠	🟠	🔴
Bi-Lo (GA, NC, SC)	74	🟡	🟡	🟠	🟡	🟡	🟠	🟠	🟡	🟡	🟠	🔴	🟠
Albertsons	73	🟢	🔴	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🟡	🔴	🟠
Lucky (CA)	73	🟡	🟡	🟠	🟡	🟠	🟠	🟠	🟠	🟠	🟡	🟠	🟠
Vons	73	🟡	🟠	🟡	🟡	🟠	🟡	🟡	🟡	🟡	🟡	🟠	🟠
Price Chopper (NORTHEAST)	73	🟡	🟠	🟡	🟡	🟠	🟡	🟡	🟡	🟡	🟡	🔴	🟠
Giant Eagle	73	🟢	🔴	🟢	🟡	🟠	🟡	🟡	🟡	🟡	🟡	🔴	🟡
Winn-Dixie	73	🟡	🟡	🟡	🟡	🟡	🟠	🟠	🟡	🟠	🟡	🟠	🟠
Martin's (MD, PA, VA, WV)	73	🟡	🟠	🟡	🟡	🟠	🟡	🟡	🟡	🟡	🟡	🟠	🟠
Giant (WASHINGTON, DC; DE; MD; VA)	72	🟡	🟠	🟡	🟡	🟠	🟠	🟠	🟠	🟡	🟡	🟠	🟠
Jewel-Osco	72	🟡	🔴	🟡	🟡	🟠	🟠	🟡	🟠	🟡	🟡	🔴	🟠
Pick 'n Save	71	🟡	🟠	🟡	🟡	🟠	🟠	🟡	🟡	🟡	🟡	🔴	🟠
Safeway	71	🟡	🟠	🟡	🟡	🔴	🟠	🟡	🟠	🟡	🟡	🔴	🟠
Acme	70	🟡	🔴	🟡	🟡	🟠	🟠	🟠	🟡	🟠	🟡	🔴	🟠
Stop & Shop	69	🟡	🟠	🟠	🟠	🔴	🟠	🟠	🟠	🟠	🟡	🔴	🟠
Shaw's	68	🟡	🔴	🟡	🟡	🟠	🟠	🟠	🟠	🟠	🟡	🔴	🔴
Tops Friendly Markets	68	🟡	🟠	🟠	🟠	🟠	🔴	🟠	🟠	🟠	🟠	🔴	🟠
Walmart Supercenter	66	🔴	🟢	🟠	🔴	🔴	🔴	🔴	🔴	🟠	🟠	🟠	🔴

HOW WE SURVEY: A total of 57,805 Consumer Reports subscribers completed the 2016 Supermarkets Survey. Grocery store ratings are based on 50,218 responses, reflecting readers' 93,447 shopping trips to supermarkets, supercenters, and warehouses between July 2015 and September 2016. Stores

are ranked based on Reader Score, which reflects overall satisfaction with shopping experience, based on respondents' survey answers. A score of 100 would mean all respondents were completely satisfied; 80 would mean

very satisfied, on average; 60, fairly well satisfied. Differences of fewer than 4 points are not meaningful. Scores for Store Cleanliness, Competitive Prices, Fresh Store-Prepared Foods, Staff Courtesy, Checkout Speed, Produce Quality, Produce Variety, Meat/Poultry Quality, Store-Brand Quality, Selection

of Healthy Options, Prices of Organic Options and Local Produce Quantity are relative and reflect averages on a scale from completely satisfied to completely dissatisfied. Results don't necessarily mirror the experiences of the general population.

The CR Guide to Smarter Remodeling

General contractors, industry experts, and real people who've been there share proven strategies for coming in under budget, on time—and overjoyed.

by Paul Hope



➤ **AMERICAN HOMEOWNERS** spend upward of \$30 billion per year renovating kitchens and bathrooms, according to a 2013 survey from Harvard University's Joint Center for Housing Studies. That's more than all the other rooms in the house combined. The outsized investment in these rooms tends to pay off: Per the National Association of Realtors, remodelers report the biggest boost to satisfaction and happiness with their homes after wrapping up a kitchen or bath overhaul.

But it takes some doing to get there. These are complex rooms outfitted with fixtures and appliances that can get expensive,

put together by the most skilled pros in the industry. Given the stakes, in 2016 Consumer Reports conducted a nationally representative survey of 1,012 homeowners who had tackled a kitchen or bath in the previous four years, to learn what they did right and what they wish they'd done differently.

The secret to getting the space that works perfectly for you without blowing your budget? Plan ahead before you spend serious money. Work on the room's design until it's exactly right and do enough research to know when it's smart to splurge on materials and appliances—and when you should save.

HOW TO STAY ON SCHEDULE

IN OUR SURVEY, 29 percent of remodelers acknowledged that their renovations took longer than they anticipated. Don't expect a consensus on who shoulders the blame. Homeowners might quickly point the finger at their contractors, but in a nationwide survey Consumer Reports conducted in late 2015, 60 percent of general contractors said the biggest mistake they saw clients make was changing their mind midconstruction. That can easily derail your project, as can structural concerns, permit problems, and materials that arrive damaged or broken, all of which were cited by contractors as primary reasons for delays. Anticipate these common problem areas and help keep your project on track.

1. Look out for structural problems.

FORTY-TWO percent of contractors we surveyed called out unforeseen structural damage as the leading reason they fall behind schedule. But these problems don't need to be a surprise. Contractors can view your project through its narrow lens, but a home inspector will look at the bigger picture and shed light on how changes might affect complex household systems. "Most people only think of having

an inspection when they buy or sell a home," says Frank Lesh of the American Society of Home Inspectors. "But inspectors can actually be helpful throughout the remodeling process." You could find out if, say, low water pressure means you'll never be thrilled with a pricey multijet rain shower or if you'll have to upgrade a kitchen circuit to power an induction range.

2. Come up with a plan for permits.

NEWS FLASH: As a homeowner, it's your job to secure the proper paperwork. Plenty of contractors will get permits on your behalf, but the trick is to make clear, from day one, who will take on the responsibility. If your contractor charges you for obtaining permits, consider a DIY approach—you don't want to spend \$100 per hour for him to wait in line. (And regardless of who takes charge, mark

important inspection dates on a calendar at your work site so that everyone's aware.)

In certain urban areas, obtaining permits is so cumbersome that specialists called permit expeditors have emerged to tackle the process for a fee. Certain cities keep lists of approved expeditors at the building department. And hiring one brings a serious advantage: Their sole focus is to keep clients' projects moving along.

3. Shop locally, even if it means spending more.

ALMOST ONE-THIRD of contractors reported that they'd been delayed on a job because materials arrived damaged (or manufacturers shipped the wrong stuff). Avoid this common pitfall by shopping locally, even from a chain retailer, whenever possible. "Paying a little more to buy materials and finishes in your area is like adding a layer of insurance to your project," says Courtney Ludeman, whose design-build firm, based in Richmond, Va., has faced countless problems with floor tile, sinks, and the like ordered on the internet.

"It's fine to snag a light fixture or door pulls in an online flash sale, but for cabinetry I use a local cabinetmaker. If there's an issue, he's back at the house in a few days finishing the job." Though custom cabinets might sound wildly expensive, Ludeman says that's becoming an outdated notion. Some independent pros now use computer programs to generate a cut list after they've measured. "That lets them keep costs competitive with premium mass-market brands and outfit a large kitchen in two weeks," she says.

CUT COSTS IN THE KITCHEN, BUT SACRIFICE NOTHING IN PERFORMANCE & STYLE

Speed is of the essence when you're upgrading your kitchen, considering that you're likely to be spending more money on takeout and dinners out during the renovation. Almost two-thirds of homeowners in our survey reported that their project took longer than a month. Minimize downtime with an efficient, streamlined remodel.

Design

TO LIMIT COSTS, leave the layout alone. If that won't do, consider moving only the fridge because it requires just a standard 120-volt outlet (and access to a cold-water supply line if it has an icemaker). Moving a range requires altering gas and/or electric lines, which adds a day or two of labor from an electrician, a plumber, or both—at anywhere from \$45 to \$145 per hour apiece. Likewise, moving a sink requires a day's worth of plumbing work.

Don't skimp on cabinet quality. Remodelers in our survey said cabinetry was a top spot where they wished they'd spent more. To make room in the budget for high-quality cabinets, skip the uppers altogether and use open shelving to showcase pretty items.

If you're adding an island, work in any storage space you've lost to stash anything you don't want on display. "Go as big as you'd like on an island," says designer Courtney Ludeman. "But leave 36 inches all around for clearance, or 42 to 48 inches if two people frequently cook together."



Materials

BEFORE KNOCKING down a wall to create an open-concept kitchen, consider how you'll marry the flooring in the two spaces. To extend hardwood throughout, install unfinished planks parallel to the old, and either get a pro to match the existing finish or have him sand the old boards and stain everything at once—about \$3.50 to \$4 per square foot.

If your kitchen will stay sealed off, "porcelain tile is probably your best bet," says Joan Muratore, CR's test engineer for

flooring. "It's excellent at resisting stains, dents, or scratches. And it holds up well under heavy foot traffic." You'll find options from about \$3.60 per square foot, plus \$1,200 or so for installation.

When it comes to counters, granite and quartz top our tests, thanks to their ability to resist staining and stand up to abrasion and heat. Installing these workhorses in the average kitchen could save between \$500 and \$1,000 over higher-end marble or soapstone.

Pass on trendy design touches such as a waterfall edge, which wraps the exposed side of a cabinet—in materials alone that touch adds upward of \$1,000 to countertop costs. Got marble taste on a laminate budget? Splurge on a single slab and install it on the island, then use adjacent complementary laminate to cover the remaining countertops.



Appliances

OUR TESTING reveals that you can skip pro-style appliances. "You'll pay \$15,000 to \$20,000 on a full kitchen suite, when \$5,000 would get you better-performing models from mass-market brands," says Tara Casaregola, CR's

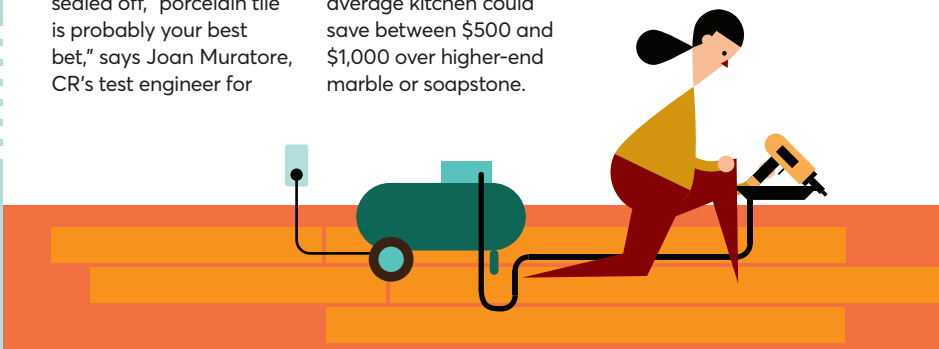
kitchen test engineer. Adam DeSanctis of the National Association of Realtors adds that "pro-style appliances won't necessarily boost the resale value of your home, beyond the bump you'd get from having any new appliances in place." If

you long for that built-in look, turn to slide-in ranges and cabinet-depth refrigerators. Both blend nicely into the surrounding cabinetry.

You can earn a discount by buying matching appliances in a package. Select a suite with a

stellar range—there's no fix for an oven with hot spots, but you can learn to live with an imperfect microwave. For the very best performance, our experts advise mixing and matching brands (see our ratings, on page 48). And opting for a range, rather

than a separate oven and cooktop, is by far the most cost-effective route: Take our highly rated Frigidaire Gallery electric range, which comes in at \$650, a full \$1,000 below the combined cost of a comparable Frigidaire cooktop and wall oven.



BUILD A BATHROOM THAT'S BEAUTIFUL YET WON'T BREAK THE BANK

Bathrooms are where we go to pamper ourselves, which explains why 36 percent of remodelers in our survey wish they had splurged on tubs and showers, flooring, or tile work. Be smart about where to save—so you can indulge in fixtures and finishes you'll love for the long haul.



Design

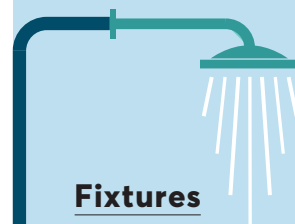
AS WITH KITCHEN renovations, the biggest costs come when you relocate important fixtures. Moving toilets, sinks, and showers requires that workers tear out subfloors and walls to access pipes. "Moving the toilet just 1 foot can cost \$1,000," says Robert Degni, a contractor in New York City. If you only need a slight shift—because, say, you're hoping to squeeze in a double vanity—Degni suggests using an offset flange, a \$10 fix that allows you to move the toilet a few precious inches in any direction without extensive plumbing work.

One extravagant addition that doesn't have to break the bank? Heated floors. Just make this call early and know that it might affect your flooring options. Installing electric radiant-heat mats, rather than hydronic (water-filled) lines, can save up to \$8,000. But unlike most hydronic systems, underfloor mats aren't compatible with all solid hardwood. Adding radiant electric heat costs roughly \$11 per square foot of open flooring. Plan on an hour of labor for an electrician to connect the mats and thermostat to a circuit.

Materials

BEFORE YOU begin shopping for tile, you'll want to familiarize yourself with the lingo you'll find on the packaging labels. Make sure any tile you're considering for flooring is available in grade 1 or 2, the most durable. (Grade 3, which tends to be thinner, is suitable only for walls.) Water absorption is another important spec—the lower the number, the less water can seep through. For flooring you want tile with a rating of less than 7 percent, and 3 percent or less for shower floors. Next, note the coefficient of friction rating, which conveys slip resistance; you'll need a COF of 0.60 or higher for floor tile. "If you want wood floors, prefinished options hold up to water well in our tests, but save it for a half bath," says CR flooring test engineer Joan Muratore. "For full bathrooms, where flooring can become soaked by water from the shower, tile is still preferable." Wood-look porcelain options provide the look and wear better, too.

As for the ceiling and walls, don't waste money on bath-specific paint. Our testing reveals that any paint with good scores in mildew resistance, such as Behr Premium Plus enamel, hold up well. At \$28 per gallon, it's over \$40 less per can than premium bath-specific paints. Choose satin finish, or semigloss if you don't mind the sheen—either will withstand periodic scrubbing.



Fixtures

IF YOU HAVE a dingy cast-iron tub, reglazing the surface can give it new life for a few hundred dollars. Replacing it with a soaker tub could cost \$500 to \$1,000 for the tub itself, plus hundreds more for installation. No space for a separate tub and shower? Don't blow out a wall for the sake of keeping both. Go ahead and install that stand-alone shower in the master suite, but if and when you put the house on the market, having at least one tub is important for resale value.

"Double vanities are all but essential now," Ludeman says. "Put one to work in master suites or Jack-and-Jill baths for kids." These double units tend to run up to \$500 more than single vanities, though the cost of installing the larger fixture is only slightly higher. In tighter quarters, consider a wide trough sink and two wall-mounted faucets.

Don't get too caught up with toilet features—look to our ratings, on page 50. A toilet that flushes well will pay for itself if it spares you the need to call a plumber even once to free a clog, says John Banta, CR's test engineer for toilets. Unless you opt for a space-saving wall-mounted toilet, pass on dual-flush models, none of which performed well in our tests. Plus, most new toilets use just more than 1 gallon per flush.



Ratings ➤ **The Right Picks for Your Remodel** Use our ratings to trick out your new kitchen or bathroom with appliances and fixtures that offer superior performance—and hold up well in these hardworking spaces.

TOP-RATED ELECTRIC AND GAS RANGES

		Brand & Model	Price	Overall Score	Test Results						Features					
Rec.	Rank				Cooktop High	Cooktop Low	Baking	Broiling	Oven Capacity	Self-Cleaning	Warming Drawer	Number of Cooktop Burners	High-Power Elements	Medium-Power Elements	Low-Power Elements	Convection Mode
SMOOTHTOP, SINGLE-OVEN (30-INCH)																
✓	1	Kenmore 95052	\$1,000	87	⬆	⬆	⬆	⬆	⬆	⬆	●	4	2	0	2	●
✓	2	LG LRE3083SW	\$855	86	⬆	⬆	⬆	⬆	⬆	⬆		4	2	0	2	●
✓	3	Frigidaire Gallery FGEF3035RF	\$650	86	⬆	⬆	⬆	⬆	⬆	⬆		4	2	0	2	●
✓	4	GE Café CS980STSS	\$2,550	86	⬆	⬆	⬆	⬆	⬆	⬇	●	5	1	2	2	●
✓	5	Kenmore Pro 92583	\$1,950	85	⬆	⬆	⬆	⬆	⬆	⬆		4	2	1	1	●
✓	6	GE Profile PB911SJSS	\$990	85	⬆	⬆	⬆	⬆	⬆	⬆		4	2	0	2	●
✓	7	Samsung NE58F9500SS	\$1,300	83	⬆	⬆	⬆	⬆	⬆	⬆		4	2	0	2	●
✓	8	GE PS920SFSS	\$1,965	83	⬆	⬆	⬆	⬆	⬆	⬆	●	4	1	2	1	●
✓	9	LG LSE4613ST	\$1,900	82	⬆	⬆	⬆	⬆	⬆	⬇		4	2	0	2	●
✓	10	Whirlpool WFE905C0ES	\$630	81	⬆	⬆	⬆	⬆	⬆	⬆		4	2	0	2	●
SMOOTHTOP, DOUBLE-OVEN (30-INCH)																
✓	1	Samsung NE58F9710WS	\$1,800	85	⬆	⬆	⬆	⬆	⬆	⬆	●	4	1	2	1	●
✓	2	Samsung NE59J7850WS	\$1,300	82	⬆	⬆	⬆	⬆	⬆	⬆	●	4	1	2	1	●
✓	3	LG LDE4415ST	\$1,400	81	⬆	⬆	⬆	⬆	⬆	⬆		4	2	0	2	●
ELECTRIC INDUCTION																
✓	1	Kenmore 95073	\$1,700	89	⬆	⬆	⬆	⬆	⬆	⬆		4	2	1	1	●
✓	2	Kenmore 95103	\$1,400	88	⬆	⬆	⬆	⬆	⬆	⬆		4	2	1	1	●
✓	3	Samsung NE58H9970WS	\$3,400	86	⬆	⬆	⬆	⬆	⬆	⬆	●	4	3	1	0	●
✓	4	Bosch HIIP054U	\$3,200	81	⬆	⬆	⬆	⬆	⬇	⬇	●	4	2	2	0	●
GAS, SINGLE-OVEN (30-INCH)																
✓	1	Samsung NX58F5700WS	\$1,530	79	⬆	⬆	⬆	⬆	⬆	⬆	●	5	2	2	1	●
✓	2	GE PGS920SEFSS	\$2,435	73	⬆	⬆	⬆	⬇	⬆	⬇	●	5	1	3	1	●
✓	3	Kenmore 74132	\$705	71	⬆	⬆	⬆	⬇	⬆	⬆		5	2	2	1	
✓	4	Frigidaire Gallery FGGF3058RF	\$945	69	⬆	⬆	⬆	⬇	⬆	⬆		5	2	2	1	●
GAS AND DUAL-FUEL, DOUBLE-OVEN (30-INCH)																
✓	1	Samsung NY58J9850WS	\$3,010	79	⬆	⬆	⬆	⬆	⬆	⬇	●	5	2	2	1	●
✓	2	LG LDG4315ST	\$1,500	73	⬆	⬆	⬆	⬇	⬆	⬆		5	2	2	1	●
✓	3	GE PGB980ZEJSS	\$2,200	73	⬆	⬆	⬆	⬆	⬆	⬇		5	2	2	1	●
PRO-STYLE DUAL-FUEL (30-INCH)																
✓	1	KitchenAid KDRS407VSS	\$4,140	72	⬆	⬆	⬆	⬇	⬇	⬆		4	3	0	1	●
	2	Wolf DF304	\$6,400	68	⬇	⬆	⬆	⬆	⬇	⬇		4	3	1	0	●
PRO-STYLE DUAL-FUEL (36-INCH)																
✓	1	KitchenAid KDRU763VSS	\$7,300	74	⬆	⬆	⬆	⬆	⬆	⬆		4	3	0	1	●
✓	2	GE Monogram ZDP364NDPSS	\$7,600	72	⬇	⬆	⬆	⬇	⬆	⬆		4	4	0	0	

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BEST ALL-AROUND DISHWASHERS

		Brand & Model	Price	Overall Score	Test Results						Features						
Rec.	Rank				Washing	Drying	Energy Use	Noise	Ease of Use	Cycle Time (Min.)	Ample Flatware Slots	Adjustable Upper Rack	Sensor	Self-Cleaning Filter	Hidden Controls	Interior Material	Stainless/SS-Look Option
CONVENTIONAL DISHWASHERS																	
✓	1	KitchenAid KDTM354DSS	\$955	85	⬆	⬆	⬆	⬆	⬆	125	●	●	●	●	Some	Stainless Steel	●
✓	2	Kenmore Elite 12793	\$1,200	85	⬆	⬇	⬆	⬆	⬆	145	●	●	●		Some	Stainless Steel	●
✓	3	KitchenAid KDTM704ESS	\$1,620	83	⬆	⬇	⬆	⬆	⬆	110	●	●	●	●	Some	Stainless Steel	●
✓	4	Kenmore Elite 14833	\$1,500	82	⬆	⬇	⬆	⬆	⬆	115	●	●	●	●	Some	Stainless Steel	●
💰	5	Bosch Ascenta SHX3AR7[5]UC	\$630	81	⬆	⬆	⬆	⬆	⬆	95	●	●	●		All	Stainless Steel/Plastic	●
	6	GE Profile PDF820SSJSS	\$905	80	⬆	⬇	⬆	⬆	⬆	150	●	●	●		No	Stainless Steel	●
	7	Thermador Topaz Series DWHD640JFM	\$1,500	80	⬆	⬆	⬆	⬆	⬆	125	●	●	●		All	Stainless Steel	●
	8	KitchenAid KDTE254ESS	\$990	80	⬆	⬇	⬆	⬆	⬆	145	●	●	●		Some	Stainless Steel	●
	9	Kenmore Elite 14753	\$800	80	⬆	⬇	⬆	⬆	⬆	145	●	●	●		Some	Stainless Steel	●

TOILETS THAT WON'T GIVE YOU TROUBLE

		Brand & Model	Price	Overall Score	Test Results			Features				
Rec.	Rank				Solid Waste Removal	Noise	Bowl Cleaning	Type	Gallons per Flush	Resists Soil and Odor	Resists Drainline Clogs	Comfort Height
SINGLE-FLUSH TOILETS												
✓	1	St. Thomas Creations Richmond Eco (6123.218, 6125.028) ⓘ	\$350	78	⬆	⬆	⬆	Gravity	1.28	●	●	●
✓	2	Kohler Highline Classic K-3493	\$425	76	⬆	⬇	⬆	Pressure	1.40	●	●	●
✓	3	American Standard Champion 4 Max 2586.128ST.020 ⓘ	\$240	75	⬆	⬆	⬆	Gravity	1.28	●	●	●
✓	4	Zurn Z5551-K	\$250	75	⬆	⬆	⬆	Gravity	1.60	●	●	●
✓	5	Kohler Kelston K-3754	\$275	74	⬆	⬆	⬆	Gravity	1.60	●	●	●
✓	6	Toto Drake CST744S ⓘ	\$250	74	⬆	⬆	⬆	Gravity	1.60	●	●	
✓	7	American Standard Acticlean 714AA151.020 ⓘ	\$400	71	⬆	⬆	⬆	Gravity	1.28	●		●
✓	8	Delta Turner C43908-WH ⓘ	\$170	70	⬆	⬆	⬆	Gravity	1.28			●
💰	9	Delta Prelude C43901-WH ⓘ	\$150	70	⬆	⬆	⬆	Gravity	1.28	●		●
✓	10	Gerber Avalanche WS-21-818	\$400	70	⬆	⬆	⬆	Gravity	1.28	●		●

WALL-MOUNTED TOILETS (DUAL-FLUSH)

✓	1	Toto Aquia CT418FG#01; In-Wall Tank: Toto DuoFit WT151M/WT152M	\$600	79	✓	✓	✓	Gravity	1.60/0.9	•	•	•
✓	2	Duravit Starck 3 2226090092; In-Wall Tank: Geberit 111.335.00.5 UP3 20	\$700	75	✓	✓	✓	Gravity	1.6/0.8	•	•	•
✓	3	Kohler Veil K-6299; In-Wall Tank: Kohler K-6284-NA	\$800	73	✓	✓	✓	Gravity	1.6/0.8	•	•	•

☑ Model is WaterSense-certified (1.28 gallons per flush or less, on average). ☑ Regular height (seat less than 17 inches high); most others are comfort height (compliant with the Americans with Disabilities Act).

COUNTERTOP MATERIALS ON THE MARKET

	Material	Price	Overall Score	Test Results				
Rank				Stains	Cutting	Abrasion	Heat	Impact
KITCHEN								
1	Quartz (engineered stone)	\$20-\$60	84					
2	Granite	\$20-\$60	81					
3	Recycled Glass (penetrating sealer) ¹	\$25-\$100	69					
4	Laminate	\$5-\$25	68					
5	Tile (ceramic and porcelain)	\$5-\$20	67					
6	Ultrapcompact (Dekton) ²	\$50-\$100	63					
7	Solid Surfacing	\$15-\$50	53					
8	Soapstone (mineral oil finish)	\$20-\$70	46					
9	Concrete (penetrating sealer)	\$25-\$75	40					
10	Concrete (topical sealer)	\$25-\$75	39					
11	Stainless Steel	\$20-\$60	39					
12	Butcher Block (varnished)	\$20-\$60	37					
13	Limestone	\$25-\$75	27					
14	Butcher Block (oil finish)	\$20-\$60	24					
15	Marble	\$25-\$75	14					
16	Bamboo (beeswax/mineral oil finish)	\$20-\$60	10					
BATHROOM								
1	Laminate	\$5-\$25	77		NA			
2	Quartz (engineered stone)	\$20-\$60	74		NA			
3	Ultrapcompact (Dekton) ²	\$50-\$100	73		NA			
4	Granite	\$20-\$60	72		NA			
5	Solid Surfacing	\$15-\$50	59		NA			
6	Recycled Glass (penetrating sealer)	\$25-\$100	53		NA			
7	Concrete (topical sealer)	\$25-\$100	51		NA			
8	Tile (ceramic and porcelain)	\$5-\$15	45		NA			
9	Soapstone (mineral oil finish)	\$20-\$70	45		NA			
10	Stainless Steel	\$20-\$60	41		NA			
11	Concrete (penetrating sealer)	\$25-\$100	28		NA			
12	Limestone	\$20-\$70	22		NA			
13	Marble	\$25-\$100	17		NA			
>	For more ratings, as well as information on how we test, subscribers to our website can go to CR.org .							

¹ Unlike other brands, Cosentino's Eco line of recycled counters developed a thin crack during our heat tests and was excluded from the ratings. The other recycled-glass products tested were 3 centimeters thick.

² Cosentino's Dekton was tested. In our impact tests, pieces of the edges chipped off, and the Dekton cracked into two pieces on samples that were the manufacturer-recommended thickness of 2 centimeters.

³ Cosentino's Dekton was tested. In our impact tests, pieces of the edges chipped off on samples that were the manufacturer-recommended thickness of 2 cm.



A World Apart

A joint investigation by Consumer Reports and ProPublica finds that consumers in some minority neighborhoods are charged as much as 30 percent more on average for car insurance than in other neighborhoods with similar accident-related costs. What's really going on?

By Julia Angwin, Jeff Larson, Lauren Kirchner, and Surya Mattu of ProPublica

STICKER SHOCK

Pernell Cox, who lives in an area known as the "Black Beverly Hills," learned that Safeco, his insurer, was charging 13 percent more in his neighborhood than in a similar white neighborhood.



PHOTOGRAPH BY KENDRICK BRINSON FOR PROPUBLICA



OTIS NASH WORKS six days a week at two jobs, as a security guard and a pest control technician, but still struggles to make the \$190.69 monthly Geico car insurance payment for his 2012 Honda Civic LX.

"I'm on the edge of homelessness," said Nash, a 26-year-old Chicagoan who supports his wife and 7-year-old daughter. But "without a car, I can't get to work, and then I can't pay my rent."

Across town, Ryan Hedges has a similar insurance policy with Geico. Both drivers receive a good-driver discount from the company.

Yet Hedges, who is a 34-year-old advertising executive, pays only \$54.67 a month to insure his 2015 Audi Q5 Quattro sports utility vehicle. Nash pays almost four times as much as Hedges even though Nash's run-down neighborhood, East Garfield Park, with its vacant lots and high crime rate, is actually safer from an auto insurance perspective than Hedges' fancier Lake View neighborhood near Wrigley Field.

On average, from 2012 through 2014, Illinois insurers paid out 20 percent less for bodily injury and property damage claims in Nash's predominantly minority ZIP code than in Hedges' largely white one, according to data collected by the state's insurance commission. But Nash pays 51 percent more for that portion of his coverage than Hedges does.

For decades, auto insurers have been observed to charge higher average premiums to drivers living in predominantly minority urban neighborhoods than to drivers with similar safety

records living in majority-white neighborhoods. Insurers have long defended their pricing by saying that the risk of accidents is greater in those neighborhoods, even for motorists who have never had one.

But a first-of-its-kind analysis by ProPublica and Consumer Reports, which examined auto insurance premiums and payouts in California, Illinois, Texas, and Missouri, has found that many of the disparities in auto insurance prices between minority and white neighborhoods are wider than differences in risk can explain. In some cases, insurers such as Allstate, Geico, and Liberty Mutual were charging premiums that were on average 30 percent higher in ZIP codes where most residents are minorities than in whiter neighborhoods with similar accident costs. (To read a full description of the analysis, go to propub.li/car-insurance-methodology.)

Our findings document what consumer advocates have long suspected: Despite laws in almost every state banning discriminatory rate setting, some minority neighborhoods pay higher auto insurance premiums than do white areas with similar payouts on claims. This disparity may amount to a subtler form of redlining, a term that traditionally refers to denial of services

In a first-of-its-kind analysis, we found that many of the disparities in auto insurance prices between minority and white neighborhoods are wider than differences in risk can explain.

or products to minority areas. And, since minorities tend to lag behind whites in income, they may be hard-pressed to afford the higher payments.

Rachel Goodman, staff attorney in the American Civil Liberties Union's racial justice program, said ProPublica's findings are distressingly familiar. "These results fit within a pattern that we see all too often—racial disparities allegedly result from differences in risk, but that justification falls apart when we drill down into the data," she said.

"We already know that ZIP code matters far too much in our segregated society," Goodman said. "It is dispiriting to see that, in addition to limiting economic opportunity, living in the wrong ZIP code can mean that you pay more for car insurance regardless of whether you and your neighbors are safe drivers."

The Insurance Information Institute, a trade group representing many insurers, contested ProPublica's findings. "Insurance companies do not collect any information regarding the race or ethnicity of the people they sell policies to. They do not discriminate on the basis of race," said James Lynch, chief actuary of the institute.

The impact of the disparity in insurance prices can be devastating, a roadblock to upward mobility or even getting by. Auto insurance coverage is required by law in almost all states. If a driver can't pay for insurance, she can face fines for driving without insurance, have her license suspended, and eventually end up in jail for driving with a

suspended license. Higher prices also increase the burden on those least able to bear it, forcing low-income consumers to opt for cheaper fly-by-night providers, or forgo other necessities to pay their car insurance bills.

It isn't completely clear why some major auto insurers persist in treating minority neighborhoods differently. It may in part be a vestige of long-standing practices dating back to an era when American businesses routinely discriminated against nonwhite customers. It's also possible that the proprietary algorithms used by insurers may inadvertently favor white over minority neighborhoods.

We have limited our analysis to the four states that release the type of data needed to compare insurance payouts by geography. Still, these states represent the spectrum of government



LEARN

Go to CR.org/carinsurance investigation to watch videos of Pernel Cox and Otis Nash telling their stories. On that page, you can also access a digital tool that allows drivers in the four states we analyzed—California, Illinois, Missouri, and Texas—to compare premiums in their ZIP code with another ZIP code with a similar risk to see the differences. For car insurance ratings and shopping advice, CRO subscribers can go to CR.org/car-insurance-ratings.



oversight of the insurance industry. California is the most highly regulated insurance market in the U.S.; Illinois, one of the least regulated. In addition, some insurers whose prices appear to vary by neighborhood demographics operate nationally. That raises the prospect that many minority neighborhoods across the country may be paying too much for auto insurance, or white neighborhoods, too little.

This investigation marks the first use of industry payout data to measure racial disparities in car insurance premiums across states. It's part of ProPublica's examination of the hidden power of algorithms in our lives—from the equations that determine Amazon's top sellers to the calculations used to predict an individual's likelihood of committing future crimes.

Our analysis examined more than

100,000 premiums charged for liability insurance—the combination of bodily injury and property damage that represents the minimum coverage drivers buy in each of the states. To equalize driver-related variables such as age and accident history, we limited our study to one type of customer: a 30-year-old woman with a safe driving record. We then compared those premiums, which were provided by Quadrant Information Services, to the average amounts paid out by insurers for liability claims in each ZIP code.

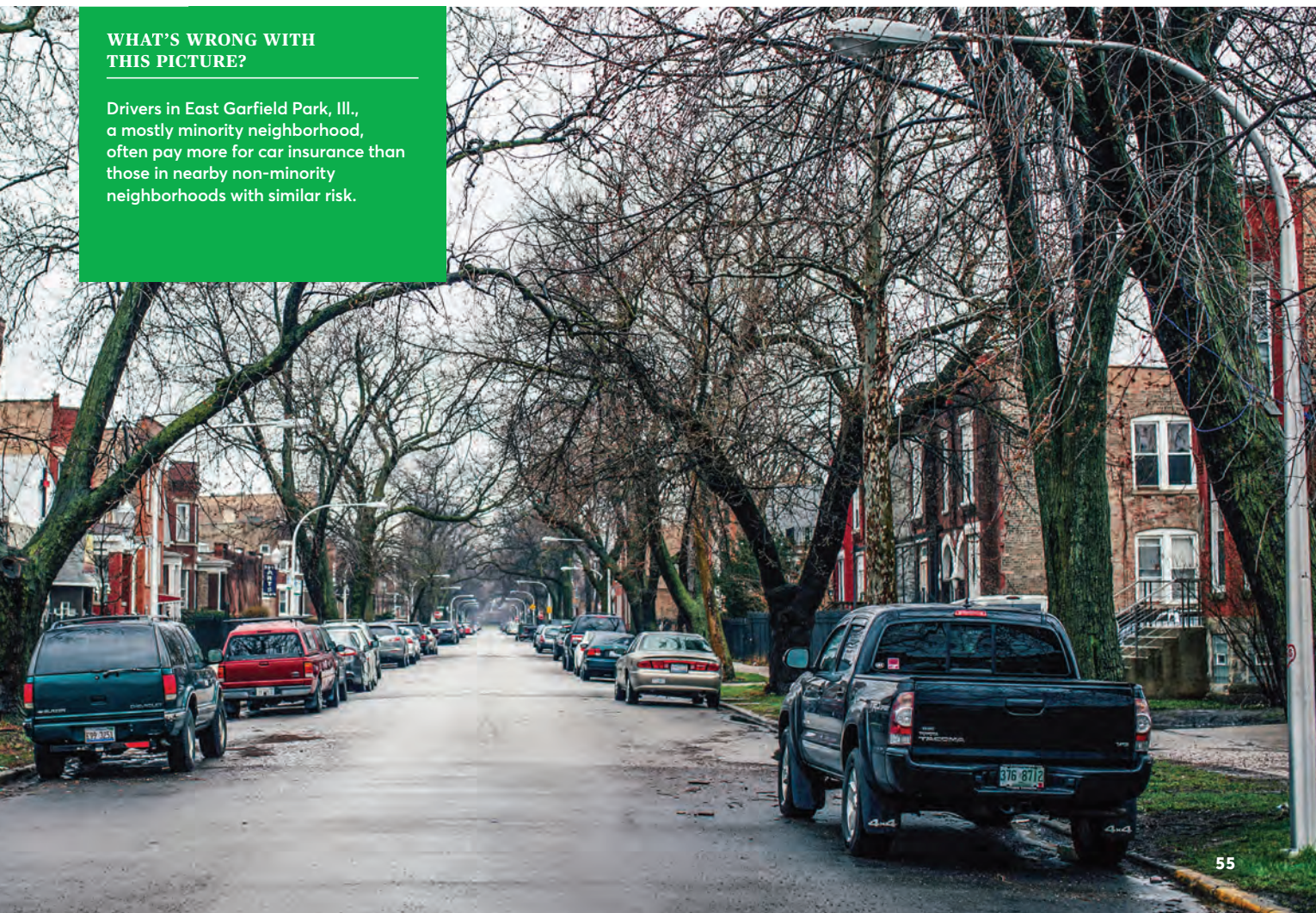
In California, Texas, and Missouri, our analysis is based on state data that covers insurance claims received, and payouts by, the state's insurers over the most recent five-year period for which data was available. In Illinois, the data covers a three-year period. We defined minority ZIP codes as

having greater than 66 percent non-white population in California and Texas. In Missouri and Illinois, we defined it as greater than 50 percent, in order to have a sufficiently large sample size.

In all four states, we found insurers with significant gaps between the premiums charged in minority and non-minority neighborhoods with the same average risk. In Illinois, of the 34 companies we analyzed, 33 of them were charging at least 10 percent more, on average, for the same safe driver in minority ZIP codes than in comparably risky white ZIP codes. (The exception was USAA's Garrison Property & Casualty subsidiary, which charged 9 percent more.) Six Illinois insurers, including Allstate, which is the second-largest insurer in the state, had average disparities

WHAT'S WRONG WITH THIS PICTURE?

Drivers in East Garfield Park, Ill., a mostly minority neighborhood, often pay more for car insurance than those in nearby non-minority neighborhoods with similar risk.



higher than 30 percent.

While in Illinois the disparities remained about the same from the safest to the most dangerous ZIP codes, in the other three states the disparities were confined to the riskiest neighborhoods. In those instances, prices in whiter neighborhoods stayed about the same as risk increased, while premiums in minority neighborhoods went up.

In Missouri and Texas, at least half of the insurers we studied charged higher premiums for a safe driver in high-risk minority communities than in comparably risky non-minority communities. And even in highly regulated California, we found eight insurers whose prices in risky minority neighborhoods were more than 10 percent above similar ZIP codes where more residents were white.

Paying Too Much

Judging by how much insurers have had to pay out for accident claims in their Chicago neighborhoods, Nash should be paying less than Hedges, not more.

Over a three-year period, Illinois insurers have paid out about \$172 per car each year in bodily injury and property damage claims in Nash's ZIP code, 60612, according to data collected by the state insurance commission. That's 20 percent less than the \$216 per car that insurers paid out for similar claims in Hedges' ZIP code, 60657.

But the liability premiums charged by Nash's insurer, Geico Casualty, in those two neighborhoods actually give a discount to the riskier white neighborhood. In Nash's neighborhood,

Geico charges \$409 for annual liability coverage for a 30-year-old woman who is a safe driver, according to insurance quotes provided by Quadrant. In Lake View, Geico charges \$338 for the same coverage for the same driver.

For the liability portion of their Geico coverage, Nash is paying \$831.34 annually, while Hedges is paying just \$549.58, according to their records. Hedges pays less even though he bought higher coverage limits for bodily injury and his Audi is worth about three times as much as Nash's Honda. A Geico filing in Illinois indicates that it charges more to insure an expensive car than a cheap one.

Nash said he is accustomed to seeing his neighborhood shortchanged. "When you go to the richer neighborhoods, the red light cameras kind of go away," he said. "That system is kind of designed for you to fail."

Geico did not respond to repeated requests for comment.

The disparities persist even in affluent minority neighborhoods. Consider Pernell Cox, a Los Angeles businessman who lives in a wealthy enclave in South Los Angeles sometimes referred to as the "Black Beverly Hills." His insurer, Safeco, a subsidiary of Liberty Mutual, charges 13 percent more for a 30-year-old female safe driver in his neighborhood than in a ZIP code with comparable risk in Woodland Hills, a predominantly white suburb in north Los Angeles.

"I was surprised by the magnitude" of the price difference, Cox said.

Cox then shopped around and realized he could save nearly \$400 a year by switching to Allstate for his two Mercedes-Benzes.

Liberty Mutual, the parent company of Safeco, told ProPublica it is committed to offering drivers "competitively priced car insurance coverage options."

Individual insurers don't publicly release their losses on a ZIP-code level, and have long resisted demands for that level of transparency. As a result, our analysis is based on aggregated losses



FIGHTING FOR FAIR CAR INSURANCE

THIS INVESTIGATION with ProPublica, first published in April on CR.org, generated significant interest among consumers, advocates, elected officials, and insurers. And in some cases, it prompted action.

Six congressional Democrats recently urged the Treasury department to appoint a director for the Federal Insurance Office (FIO), which monitors access of minority and low-income Americans to insurance and has been targeted for elimination. The CR/ProPublica investigation makes "clear the need for a fully staffed FIO," the members wrote, saying our analysis affirmed a

recent FIO report that found about 19 million Americans live in areas where auto insurance is unaffordable.

Also citing our report, Illinois state Senator Jacqueline Collins helped introduce legislation to crack down on unfair practices. "Whether it's drawing red lines on a map," she said, "or defining drivers by credit scores or ZIP codes, racial disparities in economic transactions have stubbornly persisted."

And the California advocacy group Consumer Watchdog has asked the state to investigate insurers and require them to submit risk data by ZIP code.

CR, which believes the cost of auto insurance should be based primarily on factors such as how well and how much you drive, has asked the National Association of Insurance Commissioners, as well as commissioners in California, Illinois, Missouri, and Texas, to examine how insurers set prices. And we've requested that industry representatives who have questioned our findings release the liability losses for all the companies in the ZIP codes we analyzed.

For more on our analysis and its impact, go to [CR.org/carinsurance-investigation](https://www.consumerreport.org/carinsurance-investigation).

experienced by almost all insurers in a given ZIP code in California, Illinois, and Missouri, and by 70 percent of insurers in Texas.

The California Department of Insurance criticized this approach. It disputed ProPublica's analysis and findings on the grounds that an individual insurer's losses in a given ZIP code may vary significantly from the industry average. "The study's flawed methodology results in a flawed conclusion" that some insurers discriminate in setting rates, it said.

To be sure, it's possible that some insurers have proprietary data that justify the higher premiums we found in minority neighborhoods. Moreover, in any given ZIP code, an individual insurer's losses could differ from the average losses experienced by other insurers. But it is unlikely that those differences would result in a consistent pattern of higher prices for minority neighborhoods.

Consider the internal losses that Nationwide disclosed in a 2015 rate filing in California. We compared premiums charged by Nationwide's Allied subsidiary to Nationwide's losses and found that minority ZIP codes were being charged 21 percent more than similarly risky non-minority ZIP codes—a greater disparity than the 14 percent we found when comparing Allied premiums to overall state risk data.

The Illinois Department of Insurance also criticized ProPublica's report. "We believe the methodology used in this report is incomplete and oversimplifies the comparison of rates in minority vs. non-minority neighborhoods," said department spokesman Michael Batkins.

The Texas Department of Insurance said that it was reviewing ProPublica's analysis. "It's important to us that rates are fair to all consumers," said department spokesman Jerry Hagins. The Missouri Department of Insurance did not respond to repeated inquiries.

Many insurers did not respond to our questions. Those that did generally disputed our results and said that they do

not discriminate by race in rate setting. Eric Hardgrove, director of public relations at Nationwide, said it uses "nondiscriminatory rating factors in compliance with each state's ratemaking laws." He did not respond to inquiries about our analysis of Nationwide's internal losses in California.

Roger Wildermuth, spokesman for USAA, said that its premiums reflect neighborhood conditions. "Some areas may have slightly higher rates due to factors such as congestion that lead to more accidents or higher crime rates that lead to higher auto thefts," he said.

A Long, Troubled History

Insurers have long cited neighborhood congestion as a factor in their decision-making. In 1940, a young lawyer named Thurgood Marshall wrote to a friend that he had been denied auto insurance by Travelers. When Marshall complained to the company, he was told that "the refusal was on the basis of the fact that I live in a 'congested area,' meaning Harlem, and 'not' because I am a Negro."

Marshall, who later argued and won the landmark school desegregation case *Brown v. Board of Education* and went on to become a Supreme Court Justice, concluded, according to his letter, that "it is practically impossible to work out a court case because the

insurance is usually refused on some technical ground."

In Marshall's day, redlining was often defined by refusal to provide loans, insurance, or other services in minority neighborhoods. But as those practices became public and controversial—due in part to Marshall's activism as an attorney for the NAACP—insurers stopped asking applicants to identify their race.

In the 1940s, as part of a bargain to win an exemption from federal antitrust laws, the insurance industry agreed to be regulated by state laws that included prohibitions against discriminatory rate setting. Soon after, following model legislation recommended by the National Association of Insurance Commissioners, most states passed laws that "rates should not be inadequate, excessive, or unfairly discriminatory." The legislation defines discrimination as "price differentials" that "fail to reflect equitably the differences in expected losses and expenses."

Of course, the laws didn't immediately stop discrimination. In a thorough examination of MetLife's history released in 2002, New York state insurance regulators cataloged all of the ways that the company discriminated against black applicants for life insurance—dating back to the 1880s, when it refused to insure them at all, and into the first half of the 20th century, when it required minorities to submit to additional medical exams and sold them substandard plans.

In the 1960s, as insurers stopped asking applicants to declare their race, MetLife began dividing cities into areas. In minority areas, applicants were subject to more stringent criteria, according to the report. In 2002, MetLife agreed to pay as much as \$160 million to compensate minorities who were sold substandard policies.

In the auto insurance industry, similar practices occurred. To this day, most auto insurers base premiums in part on "territorial ratings," derived from the risk of the area where the

In Illinois, of the 34 companies we analyzed, 33 were charging at least 10 percent more, on average, for the same safe driver in minority ZIP codes than in comparably risky white ZIP codes.

car is garaged.

The territorial ratings are “a way of taking into account the conditions under which you are driving,” said David Snyder, a vice president at the Property Casualty Insurers Association of America.

This geographic pricing means that the same driver may be charged different rates depending on the part of town in which he or she lives.

In 1978, Los Angeles County Supervisor Kenneth Hahn pleaded with Congress to rectify the stark inequities of territorial ratings. He said the same good driver would pay over \$900 if he lived in Watts, a poor black neighborhood, and just \$385 if he lived in predominantly white San Diego County.

“They are being ripped off by the biggest companies in America,” Hahn testified.

But Congress didn’t act.

Bill Corley, who is African-American, started his career as a Farmers Insurance agent in West Los Angeles in 1977. He said the discrimination wasn’t obvious on the surface. “Officially, you could write insurance anywhere you wanted to write insurance,” he recalled. But, Corley said, if you had too many clients in low-income areas, Farmers executives “would tell you all the problems that could be associated with that, and you were scared off and intimidated from doing so.”

When he sold insurance in minority neighborhoods, Corley said, the Farmers managers “would nitpick it. They would ask you questions about people’s income levels and questions about neighboring properties—which I don’t really recall ever having to address when I was writing policies in other neighborhoods in the city.” Farmers did not respond to repeated inquiries.

Corley persisted, and eventually established a network of independent minority insurance brokers who worked together to persuade leading insurers to make them agents and sell policies through them. Corley, who now works

as an independent insurance agent with offices in San Diego and San Jose, said the increased diversity of agents has improved the business. “Agents and brokers were complicit, and helped to perpetuate redlining, by not making an effort to write policies in those areas,” he said.

Today, some insurers consider other factors beyond the risk of accident payouts in setting rates. Such criteria as credit score and occupation have been shown to result in higher prices for minorities.

Allstate is implementing a new method for tailoring rates to “micro-segments” that appear to be as small as an individual policyholder—a method referred to in the industry as price optimization.

More than a dozen states have set limits on insurers’ use of price optimization, expressing concerns that the technique allows insurers to raise premiums on customers who don’t shop around for better rates. In 2014, for instance, the Maryland Insurance Administration banned price optimization, saying it results in rates that are “unfairly discriminatory.” (In this context, discrimination refers to any pricing that is not related to risk; the effect on minority neighborhoods has not been studied.)

Allstate has disclosed in filings that it is using price optimization in at least 24 states, including Illinois, Missouri, and Texas. Allstate spokesman Justin Hernon said the company “uses the likelihood of loss to price insurance which is required by law and specific prices are approved by state regulators.”

In California, when insurers set rates for sparsely populated rural ZIP codes, which tend to be whiter, they are allowed to consider risk in contiguous ZIP codes of their own choosing. Often, the companies group these ZIP codes with similar areas that also have few policyholders, according to insurers’ rate filings. They then assign lower risk to the entire region than appears to be

warranted by the state’s accident data.

However rates are calculated, auto insurance remains unaffordable in many predominantly minority areas of the nation, according to an analysis by ProPublica of U.S. census data and 30 million auto insurance quotes.

We found that households in minority-majority ZIP codes spent more than twice as much of their household income on auto insurance (11 percent) compared with households in majority-white neighborhoods (5 percent). The U.S. Treasury Department has defined auto insurance as affordable if it costs 2 percent or less of household income.

Consider Kelley Jenkins, a 39-year-old mother of three who lives on Chicago’s South Side. When she was laid off from an office job last summer, she tried to make ends meet by driving for Uber and Lyft. But after two months of sporadic driving, when she was sometimes making only \$100 or \$200 a week, she couldn’t afford to keep up her \$112 monthly auto insurance payments. “I was in a major struggle,” she said.

When she gave up her auto insurance, she lost her driving gigs. Luckily, she soon found a job as a security guard. But she still can barely afford auto insurance, so she bought a barebones plan from a low-cost insurer.

Jenkins said she would love to get insurance from one of the brand-name companies, but every time she calls for a quote, she realizes, “Oh no, I can’t afford it.”

Hard-to-Find Data



Over the years, efforts to investigate redlining in car insurance have repeatedly been stymied by the same barrier: the industry’s refusal to make crucial data available.

After the Rodney King riots in Los Angeles in 1992, when people took to the streets to protest the acquittal



PRICE OF ENTRY

Otis Nash, a working father who lives in a mostly minority neighborhood in Chicago, pays almost four times as much for his car insurance as a driver who lives in a comparably risky non-minority neighborhood.

of policemen who had been filmed beating a black driver, it turned out that about half of an estimated \$1 billion in losses from destroyed businesses and homes were not covered by insurance.

California Insurance Commissioner John Garamendi blamed discriminatory practices by the nation's insurance companies. Touring the battered ruins of the city a month after the riots, he told a New York Times reporter, "I am convinced redlining exists. The bottom line is either you can't get or can't afford it."

Garamendi subsequently approved rules that required insurers to report

their market share by ZIP code. But insurers argued that the data was a trade secret that couldn't be released to the public. It wasn't until 2004, after years of legal battles, that insurers lost their case in California Supreme Court.

Also spurred by the Los Angeles riots, several congressional committees held hearings and began studying the issue of redlining, but were stymied by lack of data. The U.S. General Accounting Office, now known as the U.S. Government Accountability Office, reported in 1994 that an analysis of insurance availability would require insurance companies to begin reporting

data at ZIP code or census tract level nationwide. "Currently available data are insufficient to determine the extent of current problems," the report stated.

The National Association of Insurance Commissioners also set up a committee to investigate redlining. It didn't get the necessary data, either.

Robert Klein, who was researching the issue for the association, said in an interview that "the insurance industry opposed the idea of collecting loss and claims data and the NAIC committee sided with the industry and not with me on this point."

Without data about insurers' losses,

Klein's report could not determine why premiums were higher in minority neighborhoods—whether the difference was truly because of greater risk there. “Researchers were unable to draw definitive conclusions about the causes of these market conditions,” the report stated.

Insurers say they set prices based on risk but are reluctant to share the data underlying their risk analyses, such as losses per ZIP code. Publishing data publicly about losses means “you’re creating something that is valuable and you are essentially giving it away,” said Lynch, of the Insurance Information Institute.

Texas consumer advocate Birny Birnbaum won a rare victory when, through a public records request, he obtained data collected by the state insurance commission at a ZIP-code level.

In 1997, using the information about each insurer's number of policies, premiums, and losses by ZIP code, Birnbaum published a fiery report naming Nationwide, Safeco, State Farm, USAA, and Farm Bureau as among the “worst redliners” in the state because they had much smaller market share in minority neighborhoods than in other neighborhoods.

The insurers sued the Texas Department of Insurance and Birnbaum, contending that the information was a trade secret and making it public had damaged their business. A Travis County district court judge ruled in the insurers' favor, saying they would “suffer irreparable harm in the absence of a temporary injunction.”

“There were roughly 200 insurance companies in the state. They all sued,” recalled D.J. Powers, who was Birnbaum's pro bono attorney. “It was the entire auto insurance industry versus me and Birny.”

Since then, Birnbaum has continued to advocate for insurance commissions to collect and publicly release data that can be used for analysis of redlining and other issues. However, to this day, very few states do so. ProPublica filed

public records requests in all 50 states and the District of Columbia seeking ZIP-code-level data about liability claims payouts. Only four states said they collected such data and provided it.

“Regulators are no better equipped to analyze or address these problems than they were 20 or 30 years ago,” Birnbaum said. “If you can’t even monitor the market to identify the problem, you’re certainly not going to be in a position to address the problem.”

The Inner-City Penalty



In a redlining map of Chicago created by a federal housing agency in 1940, Otis Nash's neighborhood, East Garfield Park, is colored red for “hazardous.”

“This is a mediocre district threatened with negro encroachment,” the map states. “Most properties are obsolete and the section is very congested.”

The term redlining is sometimes thought to have originated with these maps, which were created for many American cities by the federal Home Owners' Loan Corporation between 1935 and 1940. The maps were used to assist loan officers in deciding which properties were worth financing.

East Garfield Park was originally built as a community of townhouses for factory workers. Like much of Chicago's West and South Sides, it became a predominantly minority neighborhood in the 1950s and '60s as redlining discouraged investment and the city built an expressway and low-income housing projects in the area. Whites fled for the suburbs.

In 1970, East Garfield Park was among the many Chicago neighborhoods swept up in a wave of auto insurance redlining. In an experiment, Illinois had switched in 1969 from traditional auto insurance regulation—in which rates were approved by state

regulators before being issued—to a so-called “open rating system” in which companies could issue rates without regulatory permission.

Illinois insurers soon divided Chicago into four territories for rate setting, a scheme that led to higher premiums in black neighborhoods. A group of black insurance brokers banded together to protest what they called a “color tax” that was being levied on black neighborhoods in Chicago.

The issue was severe enough that the U.S. Senate Antitrust and Monopoly subcommittee held a hearing in Chicago to examine it. One witness, undertaker Charles Childs, said the premiums on his two cars for personal use, a Cadillac and a Mercury, had risen from \$450 in 1970 to \$950 in 1971, and he had to drop coverage for his fleet of undertaker vehicles.

“As rates have been increased in the inner city, they have substantially decreased in essentially white areas,” Millard D. Robbins Jr., the head of the Insurance Brokers Association of Chicago, said at a press conference. “This creates a surtax on blackness and a discount for being Caucasian.”

With black Chicagoans in rebellion, the Illinois legislature declined to renew the experimental open competition law in 1971. But they couldn't agree on a new law to replace it—so they just allowed the statute regulating auto insurance rate setting and prohibiting discrimination to expire.

Since then, Illinois, home to the corporate headquarters of State Farm and Allstate, has been the only state without legislation explicitly barring excessive or discriminatory rates in car insurance. Illinois does prohibit auto insurers from charging higher premiums to a customer because of his or her physical disability, race, color, religion, or national origin.

To address complaints of discrimination from Chicago, lawmakers in 1971 proposed a compromise: They

would ban insurers from using the four rating territories in the city.

“The question is: shall we give the blacks in Chicago a fair break on insurance rates?” said Illinois state Sen. Egbert Groen during the statehouse debate.

In 1972, they passed a law requiring insurers to use a single territorial rate within the city of Chicago for bodily injury coverage. “No one will be helped more than those in the inner city,” predicted Illinois State Rep. Bernard Epton.

But the reality has turned out differently. For many insurers we examined, premiums were high for everyone within the city of Chicago, regardless of risk, compared with the rest of the state. Since Chicago contains one-third of the state’s minority neighborhoods, that means they are still being overcharged.

And even within Chicago, the law has not prohibited insurers from differentiating prices by neighborhood. That’s because the single-territory rule is limited to bodily injury coverage; rates for property damage can still vary. (Both bodily injury and property damage coverage are mandatory for drivers to purchase in Illinois.)

Consider the premiums that Geico charges to Otis Nash and Ryan Hedges.

In Nash’s ZIP code, 60612, Geico has set the base rate for property damage insurance at \$753 a year, according to the company’s December 2016 rate filing in Illinois.

That’s eight times higher than what Illinois insurers have paid out in property damage claims in that ZIP code—an average of \$91.57 per car in the three years ending in 2014, according to data from the state insurance commission.

By comparison, in Hedges’ neighborhood, 60657, Geico has set the base rate for property damage insurance at \$376 a year, according to the same filing.

That’s half of the Geico base rate in Nash’s neighborhood. It’s also only about four times higher than what Illinois insurers have paid out in property damage

Households in minority-majority ZIP codes spent more than twice as much of their household income on auto insurance compared with those in majority-white neighborhoods.

claims in Hedges’ ZIP code—an average of \$104.45 per car over the same period.

Of course, Geico’s calculations could reflect the unique risk of the insurer’s own clientele that is somehow not reflected in the state averages. But it could also reflect a disparity, unrelated to risk, that punishes a minority neighborhood.

Either way, the \$377 disparity between property damage base rates accounts for the majority of the difference in liability premiums paid by Nash and Hedges. The base rate is adjusted by other factors such as age and driving record.

Both Nash and Hedges have about the same amount of property damage coverage for their vehicles.

Despite scraping to make ends meet, Nash bought collision, comprehensive, and liability, as well as rental reimbursement, emergency road service, and uninsured motorist coverage. “I got everything,” he said, “because you hear so many horror stories.”

He’s dependent on his car. He needs it to go to work, to shop for groceries now that the local pharmacy closed in his neighborhood and the dollar store burned down, and to take his 7-year-old daughter out to the suburbs where she can ride her bicycle in a park that is safe from crime.

“I don’t even walk up and down the block with my daughter,” Nash said, adding that it’s not unusual in the summer to “hear gunshots during the day.”

Nash said he is working with a financial adviser to cut back his expenses so

he can make his rent payments. Still, he’s reluctant to give up any of his car insurance. “I would choose the rent over my car but that would be playing with fire,” he said.

Hedges has even more coverage than Nash, but it is not a financial burden for him.

Hedges’ premium recently went up after his husband got into an accident. But even after the incident, their combined price of \$115.37 a month for two cars is lower than the \$190.69 a month that Nash pays for just one car. When told about the difference in prices, Hedges said it seemed unfair.

“It’s an unfortunate reflection of where we are in the corporate world and how we treat each other,” Hedges said.

Nash agreed: “Why would you go to the most poor communities and charge more?”

THE PARTNERSHIP BEHIND THIS INVESTIGATION

Consumer Reports partnered with ProPublica, another nonprofit journalism organization, to produce this report. Together, our teams pored over reams of data points in several major cities, including Chicago and Los Angeles, to analyze whether the premiums being charged to drivers are justified by the risk in their areas. The story was written and reported by ProPublica with Consumer Reports’ collaboration, and both groups contributed to the video storytelling. Our respective institutions operate independently. Any policy positions that Consumer Reports may take in the marketplace do not reflect the views of ProPublica, which does not take advocacy positions. We hope the content here and at ProPublica.org will illuminate the significant impact such pricing disparity can have on consumers.

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.



Small but Mighty

*With outstanding fuel efficiency, a comfortable ride, and more roominess than you might think, the new **Subaru Impreza** is a giant among small cars.*

THE IMPREZA has always been a smart, practical choice. Thanks to competitive fuel economy and a redesign that addressed its few deficiencies, the 2017 model is now our top-rated compact sedan.

It's surprisingly roomy and has good 360-degree visibility. Consider getting the optional leather seats with their variety of power adjustments; the base cloth ones are flat and provide only so-so comfort. The rear seats are spacious enough for two adults to settle in without competing for room. The control layout is uncluttered

and the infotainment system is easy to use. Subaru employed various measures to lessen wind and road noise in the cabin, and the work has paid off. Engine noise is noticeable only at high revs.

Subaru's 2.0-liter four-cylinder engine gets the job done, although acceleration is a bit tepid. Considering that the Impreza has standard all-wheel drive, its 30 mpg overall is impressive for being on par with lighter front-drive models.

The Impreza delivers an unbeatable combination of responsive, sure-footed handling and a smooth ride. It's one of the most comfortable-riding compact cars; road bumps are absorbed with the grace of cars costing twice as much.

All Imprezas, except the base version, offer the EyeSight safety system, which includes forward-collision warning and automatic emergency braking. Blind-spot warning is optional, packaged along with EyeSight.

COMPACT SEDANS

Subaru Impreza

OVERALL SCORE **81**

ROAD-TEST SCORE 85

HIGHS

Ride, braking, fuel economy, roomy interior, controls

LOWS

Front-seat comfort

POWERTRAIN

152-hp, 2.0-liter four-cylinder engine; continuously variable transmission; all-wheel drive

FUEL

30 mpg

PRICE AS TESTED

\$23,410



Comfort With Class

*The **Kia Cadenza** rolls out a redesign with improved fuel economy and plenty of power.*

THE LARGE, second-generation Cadenza proves again to be an upscale vehicle that favors passenger coddling over driving verve.

The slick, punchy 3.3-liter V6 has been retuned for better fuel economy. Further aiding efficiency is a smooth-shifting eight-speed automatic. The result is a commendable 24 mpg overall on regular gas.

This is a big, front-wheel-drive car, and it feels a bit cumbersome as it tries to hustle through turns. Nor is the ride quite as plush as its luxurious cabin implies. While generally pleasant, the

suspension falls short of the class-leading Chevrolet Impala when it comes to filtering out road imperfections.

The hushed, well-made interior is where the Cadenza shines. Broad doors make entry easy, the wide front seats fit most people well, and the rear seat has abundant legroom. The controls are refreshingly straightforward, and the infotainment system doesn't require much of a learning curve. Plus, there are plenty of modest-sized compartments to stash small items.

We commend Kia for making forward-collision warning and automatic emergency braking standard on higher-trim Cadenzas. But these two important safety systems aren't available at all on the base Premium. That's a shame, because stepping up to the Technology version means spending an extra \$7,000 on top of the \$32,890 base price.

LARGE SEDANS

Kia Cadenza

OVERALL SCORE **82**

ROAD-TEST SCORE 91

HIGHS

Acceleration, smooth powertrain, quietness, braking, interior room, controls

LOWS

Lacks agility, automatic emergency braking not available on Premium trim

POWERTRAIN

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

FUEL

24 mpg

PRICE AS TESTED

\$36,945



Silky Sophisticate

The kinder, gentler BMW 5 Series is a refined yet highly capable driving machine.

THE REDESIGNED 5 Series is more luxurious than ever. Handling lacks the exacting precision the car was once known for, but the impressive BMW earns its place as a top midsize luxury sedan.

The 5 Series manages this feat with the base 2.0-liter, 248-horsepower turbo four-cylinder that comes in the 530i. Power isn't explosive, but there's more than enough oomph for merging and passing. The eight-speed automatic is a delight. Its shifts are imperceptible, and the transmission is always

perfectly in tune with your foot. At 26 mpg overall, the 530i xDrive tops the segment.

Handling is capable and composed, but the steering is short on feedback; the 5 isn't as eager through curves as most BMWs. On the other hand, the ride is serene and supple, unfazed by pretty much any potholes on the road. Wind and tire noise are well-muted.

The cabin is beautifully crafted. Most of the iDrive infotainment system's idiosyncrasies have been ironed out. But the electronic shift lever isn't intuitive. The standard front seats are thoroughly relaxing and supportive. The rear seat is accommodating, with decent legroom and headroom, but it's a bit short on thigh support.

There are many available active safety systems, but it's disappointing that forward-collision warning and automatic emergency braking aren't standard on a car that starts at \$52,195.

LUXURY MIDSIZED SEDANS

BMW 530i xDrive

OVERALL SCORE **81**

ROAD-TEST SCORE 94

HIGHS

Ride, quietness, transmission, seat comfort, fit and finish, fuel economy

LOWS

Some controls may not be intuitive, automatic emergency braking should be standard at this price

POWERTRAIN

248-hp, 2.0-liter turbo four-cylinder engine; 8-speed automatic transmission; all-wheel drive

FUEL

26 mpg

PRICE AS TESTED

\$65,210



Family-Friendly Road Warrior

The updated Toyota Highlander is a supersized value for big families and anyone who appreciates practicality and safety.*

TOYOTA'S MIDSIZED three-row SUV blends functionality, family-friendliness, and fuel efficiency. Its solid reliability and stellar resale value broaden its appeal.

With more horsepower for 2017, the V6 engine provides ample muscle for drivers to confidently pass or merge in traffic. The new eight-speed transmission and engine start/stop feature improved fuel economy by 2 mpg, for a respectable 22 mpg overall. But unfortunately, the shifts can be felt as mild bumps. For greater efficiency, consider the Highlander Hybrid, with its

impressive 25 mpg overall.

Well-suited to road trips, the Highlander's ride is steady and serene, absorbing road imperfections with ease. Handling is responsive but not particularly engaging. Still, the Highlander remains predictable and secure in emergency maneuvers.

The driver's seat is plushly padded, and visibility is largely unobstructed. A roomy three-person second-row seat allows the Highlander to carry up to eight people, although three child seats won't fit across. Seatbacks easily fold down flat to expand the cargo area, and the numerous storage bins are handy. Controls are simple and clear, including those on the infotainment system's 8-inch touch screen, but some require a long reach.

Toyota has raised the bar by making active safety systems standard, including forward-collision warning and automatic emergency braking.

MIDSIZED SUVS

Toyota Highlander

OVERALL SCORE **84**

ROAD-TEST SCORE 82

HIGHS

Standard advanced safety gear, spacious interior, simple controls, strong reliability and resale value

LOWS

Transmission smoothness

POWERTRAIN

295-hp, 3.5-liter V6 engine; eight-speed automatic transmission, all-wheel drive

FUEL

22 mpg

PRICE AS TESTED

\$41,169

Ratings ➤ **Super SUVs and Sedans** Whether you want an urban-friendly runabout, a family or luxury sedan, or a seven-passenger hauler, these vehicles hit the sweet spot.



	Make & Model	Price	Overall Score	Survey Results		Safety	Road-Test Results											
Recommended		As Tested		Predicted Reliability	Owner Satisfaction	Front-Crash Prevention	Road-Test Score	Overall MPG	Acceleration, 0-60 MPH, Sec.	Dry Braking, 60-0 MPH, Ft.	Avoidance-Maneuver Speed, MPH	Routine Handling	Ride	Noise	Seat Comfort, Front/Rear	Controls	Luggage, Suitcases+ Duffels/Cargo Volume, Cu. Ft.	
COMPACT SEDANS																		
✓	Subaru Impreza Premium	\$23,410	81	⬆	⬆	Opt.	85	30	9.5	124	56.0	⬆	⬆	⬆	⬆ / ⬆	⬆	2+2	
✓	Chevrolet Cruze LT	\$23,145	78	⬆	⬆	Opt.	77	30	8.5	125	56.0	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
✓	Toyota Corolla LE	\$20,652	77	⬆	⬆	Std./⬆	71	32	9.9	138	54.5	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
✓	Kia Forte LX	\$19,570	76	⬆	⬇	Opt.	80	33	10.1	128	52.5	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
✓	Mazda3 Touring (2.0L)	\$21,740	72	⬆	⬆	Opt.	72	33	8.3	133	54.5	⬆	⬆	⬆	⬆ / ⬆	⬆	2+3	
✓	Hyundai Elantra SE	\$20,090	69	⬆	⬆	Opt.	66	33	9.9	133	54.0	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
	Honda Civic EX-T	\$23,035	57	⬇	⬆	Opt.	75	31	7.1	129	54.5	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
	Ford Focus SE (2.0L)	\$20,485	47	⬇	⬇	NA	67	29	9.8	128	51.5	⬆	⬆	⬆	⬆ / ⬆	⬆	2+1	
LARGE SEDANS																		
✓	Chevrolet Impala Premier (V6)	\$39,110	84	⬆	⬆	Opt.	91	22	6.9	130	54.0	⬆	⬆	⬆	⬆ / ⬆	⬆	4+2	
✓	Toyota Avalon Limited (V6)	\$42,010	83	⬆	⬆	Std./⬆	80	24	6.6	135	52.0	⬆	⬆	⬆	⬆ / ⬆	⬆	4+0	
✓	Kia Cadenza Premium	\$36,945	82	⬆	⬆	Opt.	91	24	7.0	127	52.0	⬆	⬆	⬆	⬆ / ⬆	⬆	4+0	
✓	Buick LaCrosse Essence	\$43,225	78	⬆	⬆	Opt.	85	24	6.3	127	54.0	⬆	⬆	⬆	⬆ / ⬆	⬆	3+2	
	Chrysler 300 Limited (V6)	\$38,335	66	⬆	⬆	Opt.	83	22	7.4	137	50.0	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
LUXURY MIDSIZED SEDANS																		
✓	Audi A6 3.0 Premium Plus Quattro	\$56,295	84	⬆	⬆	Opt.	90	22	5.7	132	52.5	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
✓	Cadillac CT6 Luxury (3.6, AWD)	\$64,485	81	⬆	⬆	Opt.	95	22	6.5	125	52.0	⬆	⬆	⬆	⬆ / ⬆	⬆	3+2	
✓	BMW 530i xDrive	\$65,210	81	⬆	⬆	Opt.	94	26	7.2	130	52.5	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
✓	Genesis G80 3.8 (AWD)	\$52,450	80	⬆	⬆	Std./⬆	89	20	7.2	129	53.0	⬆	⬆	⬆	⬆ / ⬆	⬆	3+1	
	Mercedes-Benz E300 4MATIC	\$69,585	74	⬆	⬆	Std./⬆	85	24	7.1	128	54.5	⬆	⬆	⬆	⬆ / ⬆	⬇	2+2	
	Cadillac CTS Luxury (V6, AWD)	\$58,780	71	⬆	⬆	Opt.	83	22	6.5	127	54.5	⬆	⬆	⬆	⬆ / ⬆	⬇	2+2	
	Volvo S90 T6 Momentum (AWD)	\$61,855	62	⬇	⬆	Std./⬆	73	23	7.2	130	52.5	⬆	⬆	⬆	⬆ / ⬆	⬇	2+2	
	Jaguar XF Prestige (V6)	\$66,586	61	⬇	⬆	Opt.	83	21	5.8	128	51.0	⬆	⬆	⬆	⬆ / ⬆	⬆	2+1	
MIDSIZED 3-ROW SUVs																		
✓	Toyota Highlander XLE (V6)	\$41,169	84	⬆	⬆	Std./⬆	82	22	7.4	134	48.5	⬆	⬆	⬆	⬆ / ⬆	⬆	40.5	
✓	Kia Sorento EX (V6)	\$37,915	82	⬆	⬆	Opt.	84	21	7.4	131	49.5	⬆	⬆	⬆	⬆ / ⬆	⬆	37.5	
✓	Hyundai Santa Fe SE (V6)	\$36,290	78	⬆	⬆	Opt.	81	20	7.6	133	51.0	⬆	⬆	⬆	⬆ / ⬆	⬆	40.5	
✓	Honda Pilot EX-L	\$39,585	75	⬆	⬆	Opt.	80	20	7.5	136	49.5	⬆	⬆	⬆	⬆ / ⬆	⬆	48.0	
✓	Mazda CX-9 Touring	\$40,470	74	⬆	⬆	Opt.	80	22	7.9	139	50.0	⬆	⬆	⬆	⬆ / ⬆	⬆	34.0	
	Ford Explorer XLT (V6)	\$39,275	59	⬇	⬆	Opt.	67	18	7.9	135	49.5	⬆	⬆	⬆	⬆ / ⬆	⬇	42.0	
	Dodge Durango GT (V6)	\$43,525	58	⬇	⬆	Opt.	83	18	8.3	134	48.0	⬆	⬆	⬆	⬆ / ⬆	⬆	44.0	
	Nissan Pathfinder SL	\$40,470	56	⬇	⬇	Opt.	72	18	7.7	137	47.0	⬇	⬆	⬆	⬆ / ⬆	⬆	39.5	

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

and the availability of Front-Crash Prevention features, such as forward-collision warning and automatic emergency braking at city or highway speeds. For these systems, NA means

no such system is offered; Opt. means it's available on some versions but not necessarily on the one we tested; and models with standard systems are rated from ↓ to ↑ based on how many of

these features are standard. We 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.cars.com).

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Consumer Reports (ISSN 0010-7174) is published monthly,
except twice in December, by Consumer Reports, Inc.,
101 Truman Ave., Yonkers, NY 10703. Periodicals
postage paid at Yonkers, N.Y., and at other mailing offices;
Canadian postage, at Mississauga, Ontario (Canadian
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The Sales of Summertime

The living may be easy, but making sense of these ads is hard

Wizard of Odd

Gee, that looks an awful lot like a hand to us.

Submitted by Margaret Huddy of Alexandria, Va.



Breakfast of Champions

'Cause it's 5 o'clock somewhere ...
 Submitted by Cherryl Walker and Marty Hill of Grants Pass, Ore.

A 'Reel' Opportunity

Well, maybe catfish are especially good at serving up gizzards?
 Submitted via email



Tea-Totaler

Kind of a buzzkill if you were counting on a tall glass of sweet stuff.
 Submitted by Barry Burns of Tenaha, Texas



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Canada Extra

Dishwashers **34a**
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How to Use the Canada Extra Section

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 phone number and web address in Canada so that you can call or 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 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.

Dishwashers

Six of the tested dishwashers are available, including three of the recommended models.
Report and ratings, pages 42-49



		Brand & Model	Price	Overall Score
Recommended	Rank			
CONVENTIONAL DISHWASHERS				
✓	1	KitchenAid KDTM354ESS	\$1,500	85
✓	3	KitchenAid KDTM704ESS	\$1,850	83
\$	5	Bosch Ascenta SHX3AR7[5]UC	\$750	81
	6	GE Profile PDF820SSJSS	\$1,100	80
	7	Thermador Topaz Series DWHD640JFM	NA	80
	8	KitchenAid KDTE254ESS	\$1,450	80

Refrigerators

Eleven of the tested refrigerators are available, including four of the recommended models.

Report and ratings, pages 44-51



		Brand & Model	Price	Overall Score
Recommended	Rank			
THREE-DOOR FRENCH-DOOR				
	6	GE GNE29GSKSS	\$2,800	83
	8	Whirlpool WRF995FIFZ	\$4,300	82
	10	GE Café CYE22TSHSS	\$4,600	81
	11	KitchenAid KRFC704FBS	\$5,000	80
	12	Jenn-Air JFFCC72EFS	NA	80
	14	GE Profile PWE23KMKEs	\$3,700	79
FOUR-DOOR FRENCH-DOOR				
\$	3	Samsung RF28K9070SR	\$4,000	82
BUILT-IN				
✓	1	Thermador Freedom Collection T36BT810NS	NA	83
✓	2	Miele MasterCool KF1903SF	\$10,500	83
✓	4	Bosch Integra B30BB830SS	\$8,200	81
	6	GE Monogram ZICP360NHRH	\$10,300*	79



RECALLS

2007-2009 Dodge Sprinter

On certain vehicles, the driver frontal airbag inflator could produce excessive internal pressure during airbag deployment, which may cause the inflator to rupture, allowing fragments to be propelled toward vehicle occupants. This could also damage the airbag module, which could prevent proper deployment. **NUMBER** 5,448 vehicles. **WHAT TO DO** Have the dealer replace the front driver airbag module.

Note: This is an expansion of recall 2016-161.

2007-2010

Volkswagen Touareg

On certain vehicles, the fuel-pump flange may develop fine cracks or fissures, which could result in a fuel leak and potentially lead to a fire.

NUMBER 2,037 vehicles.

WHAT TO DO Have the dealer apply a butyl protective film to the fuel-pump flange. If cracks are present, the fuel-pump

flange will be replaced.

2011-2014 BMW models

Certain vehicles may have been manufactured with defective front driveshaft universal joint seals that allow water and/or dirt to enter the universal joint and cause accelerated wear and/or corrosion, resulting in vibration. If the vehicle continues to be operated in this state, the universal joint could eventually break, potentially rendering the

vehicle inoperative.

NUMBER 12,072 2011-2014 X6 and 2011-2013 X5 vehicles.

WHAT TO DO Have the dealer replace the front drive shaft. Note: This is an expansion of recall 2016-226.

2011-2015 Hyundai Sonata

On certain vehicles, the connections between the front seat belts and the floor-mounted seat belt anchor pretensioners may not have

been attached properly during assembly, which could cause the seat belt to detach from the anchor pretensioner.

NUMBER 64,106 vehicles.

WHAT TO DO Have the dealer verify the connection between the seat belt linkage and the anchor pretensioner's cable connector for both front seat belts and repair as necessary. Note: For the 2015 model year, it is only Sonata Hybrid models that are affected.

Ranges

Thirteen of the tested ranges are available. All are recommended models.

Report and ratings, pages 44-51

		Brand & Model	Price	Overall Score
Recommended	Rank			

SMOOTHTOP, SINGLE-OVEN (30-INCH)

✓	2	LG LRE6383SW	\$1,450	86
✓	3	Frigidaire Gallery CEEF3035RF	\$950	86
✓	6	GE Profile PB911SJSS	\$1,600	85
✓	7	Samsung NE58F9500SS	\$1,700	83
✓	9	LG LSE5613ST	\$1,800	82

SMOOTHTOP, DOUBLE-OVEN (30-INCH)

✓	1	Samsung NE58F9710WS	\$2,000	85
✓	2	Samsung NE59J7850WS	\$1,500	82
✓	3	LG LDE5415ST	\$2,000	81

ELECTRIC INDUCTION

✓	3	Samsung NE58H9970WS	\$4,000	86
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		Brand & Model	Price	Overall Score
Recommended	Rank			

GAS, SINGLE-OVEN (30-INCH)

✓	4	Frigidaire Gallery FGGF3058RF	\$1,500	69
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GAS AND DUAL-FUEL, DOUBLE-OVEN (30-INCH)

✓	1	Samsung NY58J9850WS	\$4,000	79
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PRO-STYLE DUAL-FUEL (30-INCH)

✓	1	KitchenAid KDRS407VSS	\$6,800	72
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PRO-STYLE DUAL-FUEL (36-INCH)

✓	2	GE Monogram ZDP364NDPSS	\$12,500	72
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2013-2014 Nissan Murano

On certain vehicles, the high-pressure power-steering hose could separate. This could cause a power-steering fluid leak, resulting in increased steering effort and potentially a fire.

NUMBER 4,930 vehicles.

WHAT TO DO Have the dealer install a power-steering high-pressure hose kit.

2015-2016 Porsche models

On certain vehicles, the

front passenger seat occupancy detection mat's conductive fabric may fracture over time. As a result, the passenger airbag could deactivate.

NUMBER 3,047 Macan S and Macan Turbo vehicles. **WHAT TO DO** Have the dealer replace the passenger-seat occupancy detection mat with a new, improved mat.

2016-2017

Ford and Lincoln models
Certain vehicles may fail

to comply with the requirements of Canada Motor Vehicle Safety Standard (CMVSS) 208 - Occupant Protection in Frontal Impacts. Certain driver frontal airbag modules may have been assembled incorrectly. The airbag may not completely fill, or the airbag cushion may detach from the airbag module.

NUMBER 4,336 2016-2017 Ford Edge and Lincoln MKX, 2017 Lincoln Continental vehicles.

WHAT TO DO Have the

dealer replace the driver's frontal airbag.

2017 Audi models

On certain vehicles, the airbag control module may not properly classify an out-of-position front passenger-seat occupant. In the event of a crash, the airbag could deploy the front passenger airbag with more force than required.

NUMBER 1,332 A3 and S3 vehicles.

WHAT TO DO Have the

dealer update the airbag control-module software.

2017 Subaru Impreza

On certain vehicles, the rearview camera image may not display properly because of a software problem in the infotainment unit. During the initial boot-up, the screen might be blank or might freeze.

NUMBER 3,251 vehicles.

WHAT TO DO Have the dealer reprogram the software of the infotainment unit.

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)		
		0-50 km/h	0-100 km/h	80-100 km/h	500 Meters	City Driving	Highway Driving	Overall

COMPACT SEDAN

Subaru Impreza	\$19,995-\$30,995	3.9	10.0	4.0	19.8	11.2	5.7	7.8
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LARGE SEDAN

Kia Cadenza	\$36,295-\$45,795	3.1	7.4	3.3	17.5	14.9	6.6	9.7
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LUXURY MIDSIZED SEDAN

BMW 5 Series	\$61,500-\$80,900	3.0	7.6	3.7	17.8	14.6	5.9	9.2
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MIDSIZED 3-ROW SUV

Toyota Highlander	\$35,500-\$55,990	2.9	7.9	3.9	18.1	15.4	7.6	10.5
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SUBARU IMPREZA
PRICE AS TESTED
\$23,410 (U.S.)

81
OVERALL
SCORE



BMW 530i XDRIVE
PRICE AS TESTED
\$65,210 (U.S.)

81
OVERALL
SCORE



KIA CADENZA
PRICE AS TESTED
\$36,945 (U.S.)

82
OVERALL
SCORE



TOYOTA HIGHLANDER
PRICE AS TESTED
\$41,169 (U.S.)

84
OVERALL
SCORE



Contact Info

How to reach
manufacturers
in Canada.

Bosch
bosch.ca

Frigidaire
800-265-8352
frigidaire.ca

GE
877-994-5366
geappliances.ca

Jenn-Air
800-536-6247
jennair.ca

KitchenAid
800-807-6777
kitchenaid.ca

LG
888-542-2623
lg.com/ca

Miele
miele.ca

Samsung
800-726-7864
samsung.ca

Thermador
thermador.ca

Whirlpool
whirlpool.ca