



Winter Driving Survival Guide

Top Tire and Vehicle Choices Plus Expert Safety Tips

CR Consumer Reports™

REVIEWS & RATINGS

- Microwaves
- Toaster Ovens
- Blenders
- Food Processors
- Pressure Cookers

Your Smart Guide to Healthier Eating

- Lower your sugar and salt—and still love every bite
 - The risks of going gluten-free
- 4 sneaky package claims you can't always trust



Beyond Slow Cookers

Best new countertop meal makers

“Wow” TV

Great 4K/HDR models for every budget

Breathe Easier

Pick the right air purifier & vacuum

GUESS
WHICH SIDE
OF THE BURGER
IS HEALTHIER
AND WHY
see page 3

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\$100

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ABOUT THE COVER

Did our cover photo make you do a double take? What looks like one burger is actually two, fused together. Though both are tasty, the right side is healthier than the left thanks to the ingredients noted. For more nutrition strategies, see "Eat Smarter, Eat Healthier," on page 18.



ABOUT CONSUMER REPORTS

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on a scale of 0 to 100. We rate

products using these symbols:

POOR FAIR GOOD

VERY GOOD EXCELLENT



A Diet of Good Information

IT WAS ALMOST 100 years ago, in 1918, when Lulu Hunt Peters, M.D., told Americans that they could stay healthy by counting and capping their calorie intake, in what is widely considered the first best-selling nutrition book in U.S. history. In the century since, healthy eating advice has erupted into an enormously lucrative—and frequently confusing—industry, one populated not only by contradictory scientific claims but also by a host of charlatans and questionable corporate backers. As with so many areas of our lives today, healthy eating has become vexingly complex; consumers are inundated with marketplace noise that can leave us uncertain about whom we can trust when it comes to advice about cholesterol, “good” fats, and every other nutritional choice we make. Year after year, Americans have been instructed that the real key to health is to avoid sugar, dairy, meat, or gluten; to cut carbs or stick to seafood; to eat three square meals a day or many small ones; or to embark on an endless parade of juice cleanses and trendy diets.

This month, we’re bringing the full weight of our scientific expertise to your questions about nutrition so that you can make better-informed decisions. Our independent experts provide clarity on hidden sugars, stealthy sodium, and ways to minimize meat for a healthier diet. We’ll clarify whether foods such as eggs, soy, and honey are good for you—or not. And we’ll bring you up to speed on the ways that some food labels can be deceiving, while showcasing what to look for if you want meat and poultry that’s raised without antibiotics. At CR, we are working hard with consumers, businesses, and lawmakers to improve those labels and improve the quality of the food that gets brought to market, so you can focus on making smart, healthy choices.

Marta Tellado

Marta L. Tellado,
President and CEO
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Affordable Hearing Aids

WHAT'S AT STAKE

In July we told you about a CR-backed bill in Congress that aimed to make hearing aids more accessible and affordable. Now, we're happy to report that the bill hit its bull's-eye. The Over-the-Counter Hearing Aid Act was passed and signed into law as part of the FDA Reauthorization Act of 2017.

The law directs the Food and Drug Administration to issue regulations making prescription-quality hearing aids available without a medical exam or prescription for adults with mild to moderate hearing loss. Before this bill, only hearing-aid look-alike devices were available without a prescription. Called "sound amplifiers," or PSAPs, they aren't regulated, don't provide much benefit, and could even cause additional hearing damage.

Thanks to the new law, the FDA is now required to create rules ensuring that new OTC hearing aids meet the same high standards for safety, labeling, and manufacturing as all medical devices do.

The legislation was sponsored by a bipartisan group: Sens. Elizabeth Warren (D-Mass.), Chuck Grassley (R-Iowa), Maggie Hassan (D-N.H.), and Johnny Isakson (R-Ga.), as well as Reps. Joe Kennedy III (D-Mass.) and Marsha Blackburn (R-Tenn.), who led a companion bill.

CR and its policy and mobilization arm, Consumers Union, were strong and steadfast supporters of this common-sense legislation and urged lawmakers to pass it.

"This measure will increase consumer choice and value," Sen. Grassley said. "Consumers Union was early to recognize these benefits and helped spread the word. I'm grateful for their support."

Sen. Warren said, "Thanks to the support of groups like Consumers Union and people

across the country, hearing aids will soon be sold over the counter. By driving down the cost of hearing aids and spurring more innovation, this bill will make a life-changing difference for millions of Americans—exactly the kind of work CU excels in."

WHAT YOU CAN DO

If you need a hearing aid before these devices hit shelves, see "No More Suffering in Silence?" in our March 2017 issue, or go to CR.org/hearingaid.

More Robust Recalls

WHAT'S AT STAKE

Notifying consumers about product recalls, and repairing or removing those defective items from homes and the marketplace are complex challenges. Even though manufacturers have the ability to issue recalls and the government has similar options,

the success of these efforts has often been weak.

That's why the Consumer Product Safety Commission, which oversees recalls for more than 15,000 types of products, recently held a workshop on improving the process.

CR's experts attended and offered advice, as well as encouraged companies to be proactive in identifying and safeguarding against dangerous products. Companies should put at least as much effort into recalling a product as into selling it, we said. That means knowing how to alert customers, whether by direct mail, targeted ads, or social media, and providing clear information on what to do.

Customers also need an option to register purchases at the point of sale so that they can be easily alerted to any recalls.

The CPSC educates and trains manufacturers on how to carry out recalls, and when

necessary, the agency imposes fines and other penalties for improper or illegal conduct. CR supports the CPSC holding companies accountable.

WHAT YOU CAN DO

We highlight noteworthy recalls in every issue of the magazine. Turn to page 16 for this month's list. You can also find the latest government alerts at recalls.gov. To report a dangerous product, go to saferproducts.gov. And always register the products you buy.

Lifesaving Car Laws

WHAT'S AT STAKE

On average, 37 U.S. children die each year after being left in overheated cars. It takes just minutes for a car to reach dangerous temperatures. Trapped children have died from heatstroke even when the outside temperature was as low as 60° F.

To prevent these tragedies, Richard Blumenthal (D-Conn.) and Al Franken (D-Minn.) introduced the HOT CARS Act in the U.S. Senate. The bill would require cars to come equipped with technology that alerts drivers if a child is left in the backseat after the ignition is turned off. Though the technology is currently available, it's not yet widely offered. A House committee has recently approved a bipartisan bill that would make this type of safety system mandatory.

"Congress should quickly pass the HOT CARS Act to help parents avoid the devastation of losing a child to heatstroke," says David Friedman, our director of cars and product policy and analysis. "Until there are alerts in every car that are reliable and effective, parents should look before they lock."

WHAT YOU CAN DO

Contact your lawmakers at congress.gov and urge them to support the Act. To learn more about this safety technology, go to CR.org/hotcars1117.



Child Protection

A proposed bill would make alerts to parents mandatory when a child is left in a car.



Being Mindful About Medications

Our September cover article, "Too Many Meds?" resulted in much thoughtful discussion about the amount of drugs consumers are being prescribed in the U.S. today—possibly to the point of overmedication—and what ought to be done about it. You can join the conversation at CR.org/meds1117.

YOUR COVER STORY discussed the totals drug companies spent on marketing their products last year to consumers and doctors through ads pushing their latest nostrum for questionable problems like "low T." Every time I see a commercial on television or online, I can't help but think about how these billions of dollars could be better spent. If the drug companies were required to set aside 10 cents for every dollar they spent on advertising to fund research on drug

addiction, it could reduce the incessant, sometimes irresponsible ads and help to counteract its contribution to overmedication of Americans.
—Patrick Connally,
Paso Robles, CA

IT ISN'T JUST prescription drugs that can cause problems. I had a strange colitis for years until my new M.D. noticed an extremely high level of vitamin B in my blood chemistry. Sure enough, my daily multivitamin had an excessive amount. Once I stopped taking it, the colitis disappeared. The vitamins were from a well-respected label from my food co-op. I never looked carefully at the amount of each ingredient. Now I focus on getting nutrients from food vs. chemicals.
—Helen Palisin, Seattle

EDITOR'S NOTE Most people can receive all the vitamins and minerals they need from their daily food, though some exceptions apply. If your doctor recommends a vitamin, opt for one with a mark from the U.S. Pharmacopeia—a group that ensures the product's potency and purity. Otherwise, CR medical advisers don't recommend supplements because they aren't held to the same regulatory standards as prescription or over-the-counter drugs.

THANK YOU for writing the article about the dangers of bisphosphonates. I was prescribed one for five years beginning in 2010. In 2015, I broke both femurs and now have rods in both legs. It's been a difficult journey the last two years to get my life back. And still, I have pain. I had osteopenia and no

previous fractures when I began taking it. Doctors need to be more careful when prescribing medication. There are alternatives.

—Sharon Herman, via CR.org

EDITOR'S NOTE There is a rare risk of certain types of thigh fractures when bisphosphonate drugs are taken for longer than five years. That's why CR Best Buy Drugs advises taking a "drug holiday" after five years (talk to your doctor about how long a break)—and skipping these meds entirely if you've received a diagnosis of osteopenia or "pre-osteoporosis," because there is little evidence that they help. Instead, consume foods high in calcium and vitamin D, and do weight-bearing exercises to help strengthen bones and reduce the risk of falling. And don't smoke; it can worsen bone loss.

I HAVE PERSONAL experience with taking too many medications for over a decade. It was a mess! Now, I let food be my medicine and am much better. I wish more physicians would study nutrition and its power to prevent illness. All I know is I have my life back and it's better than before! Thanks for shining a light on this issue.
—Joyce Barrier, via CR.org

I BELIEVE YOUR article and its headline, "Too Many Meds? America's Love Affair With Prescription Medication" [on CR.org], do more harm than good. I'm a board-certified family nurse practitioner who works at a small charity clinic. I'm fighting an uphill battle to convince my patients of the importance of taking the medications I prescribe. There is a problem in America of patients who do not take their medications but take useless or even harmful medications or herbals. CR would have served the public better by addressing the issue of health literacy in America, or the lack thereof.
—Ralph Grinnell, FNP-BC,
San Antonio



WRITE

Go to CR.org/lettertoeditor to share your comments for publication.

Solar-Roof Smarts

WHEN YOU DISCUSSED the cost vs. benefit of solar roof tiles (“Something New Under the Sun,” September 2017), you compared the cost of installing the tiles to the expected savings over time. One important consideration I did not see addressed was the cost of solar tiles compared to regular tiles. My roof is approaching 20 years and may need replacing soon. Do solar tiles makes more economic sense if you’re already planning to replace the roof?
—Jim Mangi, Bethel, CT

EDITOR’S NOTE You probably shouldn’t tear up brand new traditional roofing for solar roofing. But if you need a new roof anyway, you might prefer to apply the cost toward a roof that also generates electricity. While reporting, we priced out a Tesla Solar Roof for a home near Yonkers, N.Y., at \$33,000. We also got two quotes for an asphalt-shingle roof; both came in around \$6,800. However, if you bought the asphalt roofing and a traditional solar panel system, the cost would increase to about \$19,000, according to EnergySage, an online resource for comparing solar quotes.

WHILE THE NAME recognition of Tesla may lead to an increase in market penetration, readers should know that Tesla is not the only manufacturer of these tiles and certainly not the first. The article comes across as an ad for Tesla—from the article title and reliance solely on Tesla’s cost calculator to the exclusion of other solar roof tile manufacturers. I look forward to a future review and comparison of solar roof tile and battery storage options.
—Vestal Tutterow, Vienna, VA

EDITOR’S NOTE It’s true that Tesla is neither the first nor the only company to introduce a line of solar roof tiles, or whole-house battery storage. In fact, we covered three such products in our August 2016 article, “Shedding Light on Solar Power.” Dow has since stopped producing its solar roofing tiles. CertainTeed and SolarMass still manufacture solar roofing, but finding third-party pros skilled in both roofing and electrical wiring to set these systems up presents a challenge, according to several industry experts and contractors we spoke to. Installations of Tesla’s Solar Roof will be handled by SolarCity, a Tesla subsidiary, which could streamline setup.

Rating Repellents

IN THE SEPTEMBER 2017 issue you rated bug repellents (“How to Keep the Bugs Away”). The No. 3, No. 11, and No. 14 products have the same active ingredients but different ratings. Why?
—Walter Lorys, Dacula, PA

EDITOR’S NOTE According to our testing and experts, the two biggest factors that influence how effective a repellent will be are the active ingredient and its concentration. But a product’s other ingredients—referred to as “inactive” because they don’t directly repel insects—can still influence how well a product works. So



Cash-back rewards can be richer if you are organized enough to juggle three or four cards.

—The Editors

two repellents with the same active ingredients can still have different blends of inactive ingredients that make their effectiveness vary.

Cashing In With Cards

I USE A cash-back card (“How to Cash In on Cash-Back Credit Cards,” September 2017) for the majority of my purchases. I have a trigger set to send me a check every time my point balance reaches a certain point. Very convenient.
—Ginger Smietana, via CR.org

THE SEPTEMBER article on credit cards focuses only on cash, with no regard for other aspects of the relationship between consumer and bank. My No. 1 criterion for a bank or credit card is how the bank treats me, other customers, and the environment—how it operates. How can you recommend a bank like Wells Fargo that has repeated multimillion-dollar settlements for defrauding its customers? At least include a socially responsible bank or card in your list of “cards with other benefits worth considering.”
—Brian Smucker, Sonoma, CA

EDITOR’S NOTE Consumers Union, the policy and mobilization arm of Consumer Reports, strongly supports the Justice for Victims of Fraud Act, which would prevent Wells Fargo from applying its mandatory arbitration clause to the millions of potentially fake accounts it created in order to keep consumers from taking the bank to court. The bill is pending in Congress. Go to ConsumersUnion.org/WellsFargoConsumerRights to learn more.

I’M NOT SURE why CR suggests only a two-card combo. My wife and I use a four-card combo: the best card for gas, 5 percent; the best for groceries, 6 percent; the best for restaurants and travel, 3 percent; and a 2 percent card for everything else.
—Christian Martin, via CR.org

EDITOR’S NOTE We agree that the rewards can be richer if you juggle three or four cards—as long as you stay organized! If you find it tricky to remember when to use which card, try keeping a list of cards and reward types on your phone or affixing stickers that signify what to use each card for.

Wiser WiFi

IN “HOME SWEET HOME OFFICE” (September 2017) you talk about getting stronger routers that cover a larger area. Your suggestions use a back-channel network between each router to cover a large area for big houses. But if you live in a WiFi-congested small apartment, it is better to be smarter than stronger, using a set of routers than can adapt to their surroundings. I’ve bought Plume WiFi for my 800-square-foot apartment, and it’s great.
—Felipe Cypriano, San Francisco

EDITOR’S NOTE Router makers have brought many innovative solutions to market recently. CR hasn’t yet evaluated Plume products, but we have noted great performance from several routers, such as models from Asus, Eero, Linksys, and Netgear.

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Product Updates

The latest ratings from our labs

Sizing up indoor air pollution

Air purifiers with HEPA filters can capture particles as small as 0.3 microns, which is far smaller even than the diameter of a human hair.

~0.3 microns
Smallest size of particle an air purifier can filter

~5 microns
Pet dander

~10 microns
Pollen, dust, and mold

Clearing the Air

The air in your house can be five times more polluted than the air outside. Use our purifier ratings and tips to keep indoor air clean.

by Mary H.J. Farrell

Pet Peeve

Households with animals require special attention to keep the air free of dander and other allergens.

~60 microns
Human hair

YOUR WINDOWS MAY BE spotless and your floors may sparkle, but for millions of adults and children with allergies, asthma, and other respiratory conditions, a house is only as clean as its air.

Though it might be hard to believe, indoor air can be five times dirtier than what we breathe outside, exposing us to carcinogens including radon and formaldehyde, as well as quotidian lung-gunking impurities such as pollen, dust mites, pet dander, and a variety of particulate matter created when we burn candles or cook.

Judging from the skyward trend in sales figures, Americans are turning to portable air purifiers in increasing numbers, paying hundreds or even thousands of dollars to reduce indoor air pollutants and the sniffles, sneezes, coughs, and asthma attacks they can trigger.

But whether air purifiers can improve health is still up for debate. “There’s very little good science on air purifiers,” says Norman Edelman, M.D., senior scientific adviser for the American Lung Association. “Used properly, they have been shown to modestly reduce allergy symptoms. However, the data on reduction of asthma attacks is less clear.”

The Environmental Protection Agency evaluates the energy consumption of air purifiers for its Energy Star program but is careful to issue a disclaimer about their health benefits: “While some home air cleaning devices may be useful in some circumstances, EPA makes no broad

endorsement of their use.” According to the agency, the best way to avoid health problems caused by indoor air pollution is to control or eliminate the sources of pollutants (by banning smoking in the house, for instance) and to ventilate the home with clean outdoor air. (To minimize indoor air pollution without an air purifier, see “13 Ways to Bust the Dust,” on page 11.)

Though the benefits of portable air purifiers are still being debated by the scientific community, recent research suggests that they could protect against the ill effects of air pollution under certain conditions. A small, well-designed study, funded in part by China’s National Health and Family Planning Commission and conducted at a Shanghai university, found that the use of filter-based air purifiers was associated with reducing the adverse health effects caused by polluted air. Another study, conducted by Canada’s British Columbia Centre for Disease Control and other Canadian governmental and academic groups, concluded that the use of

portable air purifiers can lower indoor levels of particulate matter caused by smoke pollution and, in doing so, benefit respiratory and cardiovascular health.

Picking the Right Type

There are several types of air purifiers, including ionizing, ultraviolet, and filter-based. At CR we test portable filter-based models, which are the most common. (We usually don’t test models that use only electrostatic-precipitator or ionizer technology, both of which produce ozone—a gas that smells fresh but has been proved to be a lung irritant.)

“Filter-based air purifiers are pretty simple machines that employ a fan to pull air through a filter that traps particles,” says CR test engineer Dave Trezza, who runs the air purifiers lab. HEPA filter-based purifiers are claimed to capture “up to 99.97%” of allergens and pollutants as small as approximately 0.3 microns, which is about the size of fine dust and smoke particles. To test them we blow smoke and fine clay dust into an airtight chamber, then measure how quickly a purifier can clear the air, or not. The very best models in our tests are effective at removing smoke and dust at both high and low speeds. That means they should also be able to capture pollen and mold, which are larger. But once pollen and mold spores land on the floor, nothing but a good vacuum will remove them. (See “Best Vacuums for Allergy Sufferers,” on page 13.)

Filter-based air purifiers cannot capture gases, so they won’t protect you from some of the most dangerous



BLUEAIR
BLUE
PURE 211
\$250

89

OVERALL
SCORE

indoor air impurities, including carbon monoxide, nitrogen oxides, radon, and volatile organic compounds. And unless they have a carbon filter, they won't rid your home of odors, so even if cigarette smoke has been filtered from the air, the smell will remain.

Portable air purifiers might not even reduce the symptoms of allergies or the frequency of asthma attacks. But if you've taken pains to keep allergens and other pollutants out of your home, an air purifier could help to reduce them further. And running one in the bedroom of a child who suffers from asthma certainly won't hurt and might even be of some benefit. If you decide an air purifier is for you, check our ratings, on page 14, and keep these things in mind when considering which one to buy:

CADR. This stands for "clean air

delivery rate" and indicates the volume of filtered air a unit delivers. Most air purifier packaging will display three CADR numbers, one each for dust, smoke, and pollen. "The higher the number, the faster the unit filters the air," Trezza says. "Look for a CADR above 250. Anything below 100 isn't very effective."

Room size. Manufacturers make claims that their air purifiers can clean rooms of a certain size, usually expressed in square feet or as small, medium, or large. But in our tests we found that many models weren't able to capably clean a room of the size claimed on the box. To get the best performance, choose one of the seven models that we recommend for large rooms (350 to 650 square feet), even if you're going to use it in a smaller space. "We recommend that you

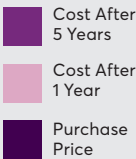
buy a large unit and run it on a lower, quieter speed," Trezza says.
Energy Star. Models that carry this familiar blue logo are 40 percent more efficient than non-Energy Star models. That's an important consideration for an appliance that people tend to run 24 hours a day.
HEPA filters. Many air purifiers have a HEPA filter, which can capture very fine particles. Some units also use a prefilter to capture larger airborne particles, which can save you money by extending the life of the HEPA filter. (For important cost considerations, see "The Cost of Clean Air," below.)

Help May Be in Your Basement

If your home relies on forced-air heating and cooling (as most

The Cost of Clean Air

The air purifiers we tested range from \$50 to \$900, but replacement filters and energy costs can add significantly to your initial outlay. We've calculated the cost of ownership of our five top-rated models after one year and five years of operation.



newer homes do), an effective and efficient way to improve your indoor air quality is simply to upgrade the system's filter, according to Trezza. That's because heating, ventilation, and air conditioning (HVAC) systems recirculate the entire volume of air in your house, drawing it through intake vents, filtering it, and distributing it through ducts to every room.

But to turn your HVAC system into an air purifier, you may need to modify it slightly. Most HVAC systems are installed with 1-inch-thick filters designed only to protect the mechanical workings; retrofitting the system to accommodate special filters that are 2 to 5 inches thick will trap more impurities. Unless you're very handy, you'll need to pay a one-time fee to have the new, larger filter housing installed between the return air duct and the intake. Costs vary depending on your system and where you live, but HomeAdvisor, a website that compiles home remodeling and repair costs, pegs the national average at about \$1,500.

In the lab, CR's experts have found consistently that the thicker the filter, the better it works to reduce impurities and the less often you'll need to replace it. "These thicker filters are better for you and for your HVAC system," Trezza says.

Our recommended filters for HVAC systems (see page 15) are the best at removing dust, pollen, and smoke without impeding the flow of air. "These filters clean all of the air in your house," Trezza says, "but only when the system is running."

An HVAC system retrofitted with a thicker filter requires no special attention. "Just change the filter every three months or as often as the manufacturer recommends," Trezza says. "And be careful not to put it in backward, which could reduce the flow of air." The annual cost of replacing the filters we tested ranges from \$20 to \$130.

13 Ways to Bust the Dust

Easy habits to reduce indoor air pollution.

POLLUTANTS CAN BE introduced into the air of your home in a number of ways. Some are carried in on the breeze; some are carried in, unwittingly, by you. "A lot of things come into our homes on our clothing, including pollen and cat allergens," says Elliott Horner, Ph.D., lead scientist for UL Environment (Underwriters Laboratories). Other pollutants originate inside the home, such as when you pet your dog and release dander into the air or burn a piece of toast and send smoke streaming into the kitchen. It's difficult not to generate indoor air pollution in your home, Horner says.

To get rid of impurities, you need to pursue several lines of attack. Following the checklist below will help you to minimize indoor air pollution so that a portable air purifier won't have to work as hard, if you even need one at all.

1. OPEN A WINDOW

Adequate ventilation is key to promoting healthy indoor air, and opening windows (when it's not too cold or the pollen count is not too high, of course) is an easy way to encourage a good exchange of indoor and outdoor air.

2. BAN SMOKING

"Absolutely no cigarette smoke," says Norman Edelman, M.D., senior scientific adviser for the American Lung Association. Second-hand smoke impairs respiratory health and is responsible for some 3,000 lung cancer deaths a year in non-smokers, according to the Environmental Protection Agency.

3. GIVE FIDO A BATH

If you have pets, bathe them and wash their bedding often to reduce allergy-causing dander. And we hate to break it to you, but you should also keep them out of bedrooms.

4. USE EXHAUST FANS

Run fans in the kitchen (removes cooking fumes) and bathroom (removes steam) that vent outside. Also be sure that your dryer vents to the outside to minimize lint. To reduce the level of pollen in the air on days it's not possible to open the windows, run your window air conditioner on the fan setting with a clean filter.

5. USE A DOORMAT

Wiping shoes can reduce pollutants carried into the house. Better yet, establish a shoes-off policy.

6. CHANGE FILTERS

If you have a forced-air heating and cooling system, change the filters more often when there is more smoke or pollen in the air.

(For more on replacing filters, see "Time for a Change," on page 12.)

7. SKIP FIRES

Flames dancing in the fireplace look delightful, but they release soot and smoke into the air.

8. DON'T COVER UP ODORS

Avoid air fresheners, scented candles, incense, or other odor-masking fragrances, which can trigger asthma.

9. VACUUM OFTEN

Do this especially if you have a pet. Brooms can just stir up more dust.

10. USE A MICROFIBER DUSTING CLOTH

It will capture more dust than a cotton rag.

11. MINIMIZE CARPET

It can trap pollutants such as dust mites, pet dander, mold spores, and other dirt and dust. Choose hard-surface flooring instead.

12. TRY TO STAY DRY

To reduce mold, keep moisture down by using a dehumidifier and cleaning the filter regularly.

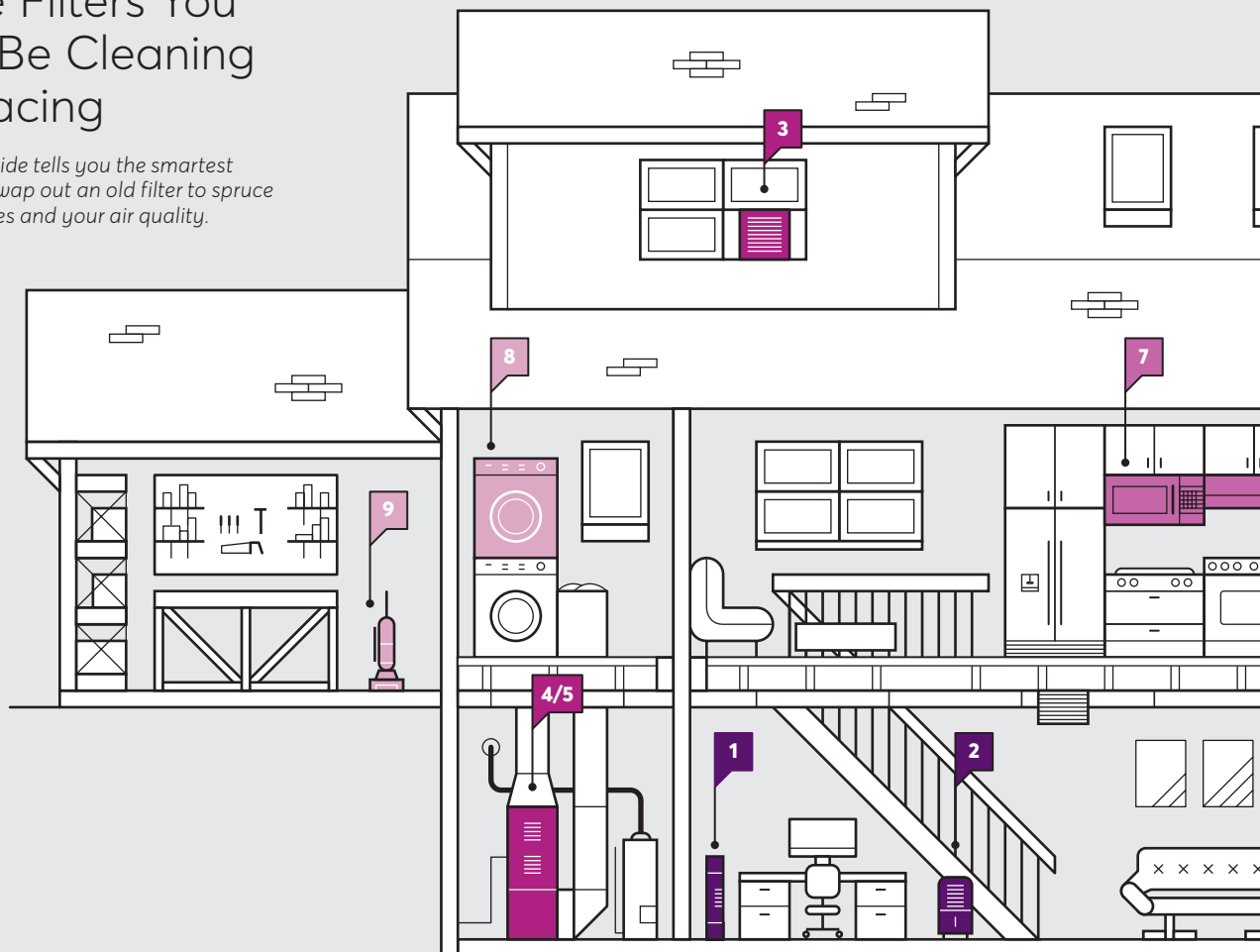
13. STORE CHEMICALS SAFELY

Store solvents, glues, and pesticides away from living areas, and, when possible, use homemade cleaning products such as a mixture of white vinegar and water.

Time for a Change

9 Home Filters You Should Be Cleaning or Replacing

Our stay-fresh guide tells you the smartest time to clean or swap out an old filter to spruce up your appliances and your air quality.



1 AIR PURIFIER

Most air purifiers have a filter indicator (often a light) that alerts you when the filter should be checked and possibly replaced. Though you can simply wipe down most prefilters, the main HEPA filter should be replaced about every six to 12 months, or as your manual advises. We factor this expense—new filters can cost between \$50 and \$100 or more annually—into the annual costs listed in our ratings, on page 14.

Keep in mind that some newer air purifiers will tell you when it's time to change a filter based on how much you've used the unit, and others base their alert on a set number of hours.

"So if you run your purifier less often, you should inspect the filter before tossing it to keep from replacing it unnecessarily," says CR test engineer Dave Trezza.

2 DEHUMIDIFIER

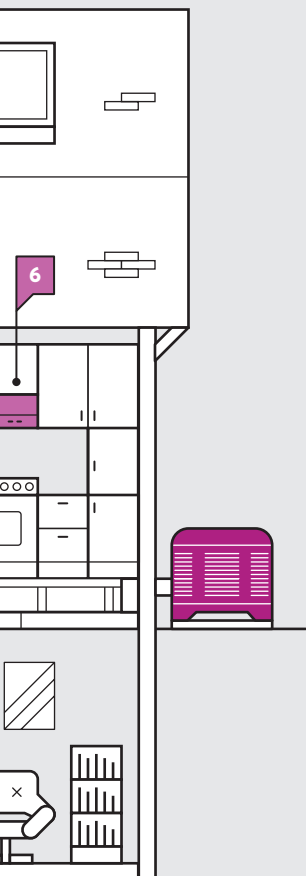
Though your dehumidifier is easy to forget about—especially if it's out of sight in the basement—most dirty dehumidifier filters can be easily cleaned in just a few minutes rather than replaced. A quick cleaning will improve your air quality and the machine's performance. This is especially important to do when humidity levels rise above 50 percent, which can lead to the growth of dust mites, mildew, and mold on your filter. (If you see any of these, it's time for a new filter.)

3 ROOM AIR CONDITIONER

All window units have a filter, and many come with a filter indicator that signals when it needs cleaning to keep cooling your home efficiently. If yours doesn't, check the filter at least once a month during periods of heavy use, or year-round if you live in a warm climate. Remove the filter and use your vacuum's upholstery brush to suck up any heavy dirt, then wash the filter using a mild solution of dishwashing liquid and warm water. Wait until it's dry to reinsert. "Some filters are easier to remove than others, so consult the owner's manual for guidance," says CR's Christopher Regan, who oversees testing for room air conditioners.

4 CENTRAL HEATING AND COOLING SYSTEM

If you have a combined forced-air heating and cooling system, follow the filter manufacturer's recommendation on how often to change it. In general, the thicker the disposable filter, the less often it needs to be changed. (The models we test last between three and 12 months.) Washable filters usually require monthly cleaning, but "none of the ones we've tested have performed very well, so at this point we don't recommend them," Trezza says.



6 RANGE HOODS

Some models have filter-maintenance lights; if not, check and clean this filter every one to three months—or more often if you cook frequently. Slide the filter out of the range hood and into a sink filled with hot water and a good degreasing soap. Let it soak for at least 10 minutes. Use a sponge to carefully remove any remaining grease or debris. Then air-dry and replace. If a good cleaning doesn't get the grime off, you'll need a replacement, which usually costs about \$10 to \$15.

7 MICROWAVE OVEN

Over-the-range microwaves also have filters that need attention (unlike countertop units, which don't). A filter with grease buildup results in a fan that can't exhaust properly or capture cooking fumes, leaving a sticky film on appliances and kitchen walls. To keep it clean, wash the filter in warm, soapy water at least twice a year, and more often if you cook at home most nights. Some microwaves have dishwasher-safe filters.

8 CLOTHES DRYER

A dirty lint filter can extend drying time and can lead to lint buildup in the dryer's cabinet and duct. So in addition to cleaning the lint filter between loads of laundry, also inspect the duct and cabinet every few months to check for any lint buildup, which poses a fire hazard. Some newer dryers, such as the Samsung DV56H9100EG, have blocked-vent sensors that detect reduced airflow, but not all the sensors performed well in our clothes-dryer tests, making a visual inspection the safest bet.

9 VACUUM CLEANER

Failing to change the filters in your vacuum cleaner may cause it to lose suction or, worse, spew dust back into the air. Changing the filters regularly, especially on bagless models, saves work and aggravation. Frank Rizzi, who tests vacuums for Consumer Reports, says that every model is very different, so consult the owner's manual to see how often the filter should be changed and whether it can just be washed instead.

5 GAS FURNACE

As with a central A/C system, a dirty filter can prevent airflow, leaving the equipment struggling, so replace a disposable one as the manufacturer advises. (Again, most models will need to be changed roughly every three to 12 months.) When you remove the old filter, take note of the size and the arrow that indicates the direction of the airflow—both should be printed on the filter. One of the biggest mistakes people tend to make doing this chore is putting the new replacement filter in backward.

Best Vacuums for Allergy Sufferers

A GOOD VACUUM is a formidable first defense against indoor air pollution—especially if you have allergies. Unlike an air purifier, it can remove pollen, dander, and other allergens after they've fallen to the floor. The key test CR performs for allergy sufferers measures emissions: The best models keep dirt well-contained; the worst spew some of the fine dust and debris they collect back into the air. The Asthma and Allergy Foundation of America recommends buying a vacuum with a HEPA filter, and we think bagged models have an edge over bagless because emptying the bin of a bagless vacuum can produce a cloud of dust that exacerbates symptoms.

Here are four vacuums that scored Excellent on our emissions test and Very Good or Excellent in our tests on cleaning carpet, bare floors, and picking up pet hair.

UPRIGHTS

74 OVERALL SCORE

KENMORE ELITE PET FRIENDLY 31150 \$350



Has strong tool airflow, giving the vacuum's accessories plenty of power for cleaning.

64 OVERALL SCORE

MAYTAG M1200 \$700



Its brush on/off switch safeguards bare floors and prevents the scattering of dust and debris.

CANISTERS

73 OVERALL SCORE

KENMORE ELITE PET FRIENDLY ULTRAPLUSH 81714 \$400



This model is one of the few that can take on the new ultraplush carpets.

75 OVERALL SCORE

MIELE COMPLETE C3 MARIN \$1,100



Manual carpet-height adjustment allows optimal matching of the beater brush to the pile.

Ratings ➤ **Breathe Easier** The best portable air purifiers and filters for home HVAC systems can trap many allergens and other irritants floating through the house.

			Brand & Model	Overall Score	Price	Test Results				
When choosing a portable air purifier, look for first-rate filtering for dust, pollen, and smoke, and a low annual operating cost.	Recommended	Rank				Dust/pollen/ smoke removal (high)	Dust/pollen/ smoke removal (low)	Noise (high speed)	Noise (low speed)	Annual cost

LARGE ROOM (350 TO 650 SQUARE FEET)



\$	1	Blueair Blue Pure 211 ⓘ	89	\$250	⬆️	⬆️	⬇️	⬆️	\$171
✓	2	Blueair Classic 605	88	\$900	⬆️	⬆️	⬇️	⬆️	\$224
✓	3	Honeywell HPA300	76	\$250	⬆️	⬆️	⬇️	⬇️	\$203
✓	4	Alen Breathesmart ⓘ	72	\$600	⬆️	⬆️	⬇️	⬇️	\$190
✓	5	Idylis AC-2118	68	\$250	⬆️	⬇️	⬇️	⬇️	\$121
	6	SPT AC-2102	65	\$325	⬆️	⬆️	⬇️	⬇️	\$395
	7	Electrolux Oxygen Ultra EL500AZ	64	\$300	⬆️	⬇️	⬇️	⬇️	\$163
	8	Winix FresHome WACP450	64	\$230	⬆️	⬇️	⬇️	⬇️	\$112
	9	Kenmore 83396	63	\$200	⬆️	⬇️	⬇️	⬇️	\$187
	10	Winix 5300-2	59	\$150	⬆️	⬇️	⬆️	⬆️	\$90
	11	Airmega 300	59	\$550	⬆️	⬇️	⬇️	⬆️	\$110
	12	Holmes HAP756	59	\$140	⬆️	⬇️	⬇️	⬇️	\$103
	13	Blueair 403 (Costco Exclusive)	58	\$440	⬆️	⬇️	⬇️	⬆️	\$181
	14	Honeywell HPA250B	58	\$230	⬆️	⬇️	⬇️	⬇️	\$137

MEDIUM ROOM (250 TO 400 SQUARE FEET)



	1	Honeywell Air Genius HFD310	59	\$145	⬆️	⬇️	⬇️	⬆️	\$80
	2	Electrolux ELAP30D7PW	54	\$290	⬆️	⬇️	⬇️	⬇️	\$127
	3	LG PuriCare AS401VGA1	54	\$350	⬆️	⬇️	⬇️	⬆️	\$107
	4	Oreck AIR108	52	\$400	⬆️	⬇️	⬇️	⬆️	\$42
	5	GermGuardian AC9200WCA	52	\$325	⬆️	⬇️	⬇️	⬆️	\$222
	6	Febreze FHT190W	51	\$99	⬆️	⬇️	⬇️	⬇️	\$89
	7	Sharp FP-F60UW	51	\$225	⬆️	⬇️	⬇️	⬇️	\$54
	8	Hunter 408940 ⓘ	48	\$130	⬇️	⬇️	⬇️	⬇️	\$190
	9	Vornado PCO300 ⓘ	47	\$350	⬇️	⬇️	⬇️	⬇️	\$157
	10	Therapure TTP640	46	\$180	⬇️	⬇️	⬇️	⬇️	\$59
	11	Therapure TPP240	46	\$150	⬇️	⬇️	⬇️	⬆️	\$64
	12	Friedrich AP260	46	\$250	⬇️	⬇️	⬇️	⬆️	\$168
	13	Rowenta PU6020	45	\$400	⬇️	⬇️	⬇️	⬆️	\$100
	14	Allergy Pro AP200	45	\$120	⬇️	⬇️	⬇️	⬇️	\$67
	15	SPT Magic Clean AC-3000i ⓘ	44	\$75	⬇️	⬇️	⬇️	⬆️	\$147
	16	Honeywell HFD230B	42	\$170	⬇️	⬇️	⬇️	⬆️	\$74
	17	GermGuardian AC5000 ⓘ	41	\$100	⬇️	⬇️	⬇️	⬇️	\$126

			Brand & Model	Overall Score	Price	Test Results				
	Recommended	Rank				Dust/pollen/ smoke removal (high)	Dust/pollen/ smoke removal (low)	Noise (high speed)	Noise (low speed)	Annual cost



SMALL ROOM (100 TO 300 SQUARE FEET)

	1	Ionic Pro Platinum TA750	33	\$200					\$9
	2	Dyson Pure Cool Link ¹	26	\$500					\$102
	3	Hoover WH10600 ¹	20	\$165					\$61
	4	Hamilton Beach TrueAir 04383 ¹	18	\$50					\$25

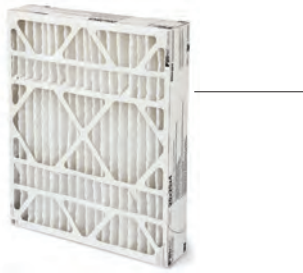
HOW WE TEST: Overall Score is based primarily on how well models remove dust and smoke from a test chamber, plus quietness. Dust/pollen/

smoke removal is how well models capture cigarette smoke and fine clay dust. Noise is a measurement of decibels at high and low speeds.

Room size—small, medium, or large—is our recommendation based on performance. Annual cost combines filters and electricity.

			Brand & Model	Overall Score	Price	Test Results				
	Recommended	Rank				Dust/pollen/ smoke removal (high)	Dust/pollen/ smoke removal (low)	Airflow resistance	Annual cost	Thickness (in.)

Our recommended air filters for HVAC systems remove dust, pollen, and smoke, and don't impede airflow through the unit.



AIR FILTERS

	1	Lennox Healthy Climate CarbonClean 16	70	\$100				\$100	5
	2	Filtrete Healthy Living Ultra Allergen 4 MPR1550	70	\$29				\$29	4
	3	Carrier EZ Flex Filter Cabinet	68	\$64				\$128	5
	4	Filtrete Healthy Living Ultimate Allergen Reduction 1900 MPR	64	\$20				\$80	1
	5	Filtrete Healthy Living Elite Allergen 2200 MPR	59	\$25				\$80	1
	6	Honeywell Superior Allergen FPR 9	39	\$20				\$68	1
	7	Flanders High Efficiency Air Cleaner MERV 11 Model 82755	39	\$30				\$19	3
	8	Filtrete Micro Allergen Defense 1000 MPR	37	\$15				\$48	1
	9	Flanders NaturalAire Pleated Microparticle MERV 10	23	\$11				\$44	1
	10	Filtrete 600 Dust & Pollen	20	\$9				\$36	1
	11	Flanders Precisionaire Pre-Pleat 40	11	\$7				\$84	2
	12	Web Eco Filter Plus FPR 4	11	\$22				\$0	1

HOW WE TEST: Overall Score is mainly how well models removed dust and smoke from a test chamber. Airflow resistance is

how freely air passed through the unit. Annual cost is estimated based on number of replacement filters needed.

Microsoft Surface Laptops Are No Longer Recommended

IN AUGUST WE removed our “recommended” designation from four Microsoft laptops and can’t recommend any other Microsoft laptops or tablets because of poor predicted reliability compared with most other brands.

To judge reliability, we survey hundreds of thousands of subscribers annually about the products they own and use. New studies conducted by the Consumer Reports National Research Center estimate that 25 percent of Microsoft laptops and tablets will present their owners with problems by the end of the second year of ownership.

Microsoft is relatively new to the hardware business, and this is the first year CR has had enough data to estimate predicted reliability for the company’s laptops.

The four laptops losing their previous recommended status are the company’s

Surface Book (128GB and 512GB versions), which have detachable keyboards, and Surface Laptop (128GB and 256GB versions), with pure clamshell designs.

WHAT THE STATISTICS MEAN

The estimated breakage rates for Microsoft laptops and tablets are higher than most other brands’ in our analyses by a statistically significant margin.

That comparison—not any preset cutoff for breakage rates—is why Microsoft doesn’t meet CR’s standards for recommended products.

In an emailed statement, Microsoft defended its products. “Microsoft’s real-world return and support rates for past models differ significantly from Consumer Reports’ breakage predictability,” the company said. “We don’t believe these findings accurately reflect Surface owners’ true

experiences or capture the performance and reliability improvements made with every Surface generation.”

RELIABILITY VS. PERFORMANCE

Consumer Reports’ lab testing measures how well a laptop or tablet performs for a range of factors, including display quality, battery life, speed, and ergonomics.

Several Microsoft products have performed well in CR labs, including the new Microsoft Surface Pro, which earned Very Good or Excellent scores on multiple factors when we tested it as a tablet and then again with the keyboard attached.

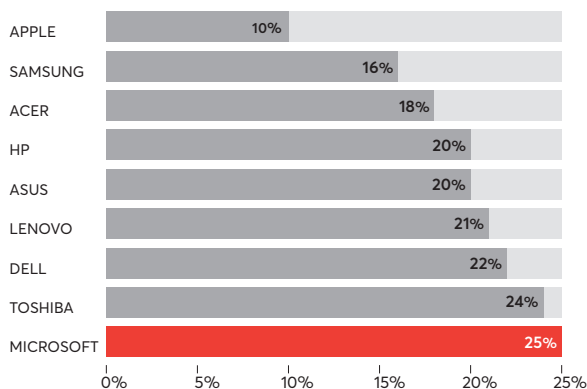
However, shoppers care about more than just things we can test in the lab.

“Consumers tell us that reliability is a major factor when they’re choosing a tablet or laptop,” says Simon Slater, a Consumer Reports survey manager. “And people can improve their chances of getting a more dependable device by considering our brand-reliability findings.”

Respondents told us about a variety of concerns with their Surface devices. Some reported problems during startup. A few said their machines froze or shut down unexpectedly, and others said the touch screens weren’t responsive enough.

The new studies of laptop and tablet reliability are based on more than 50,000 tablets and 41,000 laptops that subscribers bought new from 2014 to early 2017 (details at left). Predicted reliability is a projection of how new models from each brand will fare based on models already in users’ hands.

Estimated breakage rate of laptops by brand by the end of the second year of ownership



Conclusions are based on subscribers’ experiences with 41,304 laptops bought new between 2014 and the first quarter of 2017. Our statistical model holds for laptops not covered by a service contract. Models within a brand may vary, and changes in design or production may affect future reliability. Differences of fewer than 5 points aren’t statistically meaningful. In this case, Microsoft’s rate is at least 5 points worse than most other brands in our nine-brand pool, and therefore its products can’t be recommended. No other brand crosses that threshold.



RECALLS



2006 TO 2016 VOLKSWAGENS

Volkswagen is recalling 280,915 model year 2006 to 2010 Passats and Passat Wagons, and 2009 to 2016 CC vehicles. Interrupted electrical power to the fuel-pump control module can cause the pump to fail and the engine to stall, increasing the risk of a crash.

What to do: VW will replace the module free. Call 800-893-5298 for details.



PROPANE CYLINDERS

YSN Imports is recalling about 24,000 refillable propane cylinders because they can leak propane gas, posing fire and explosion hazards. They were sold at stores nationwide and online from November 2013 through September 2016 for \$10 to \$15.

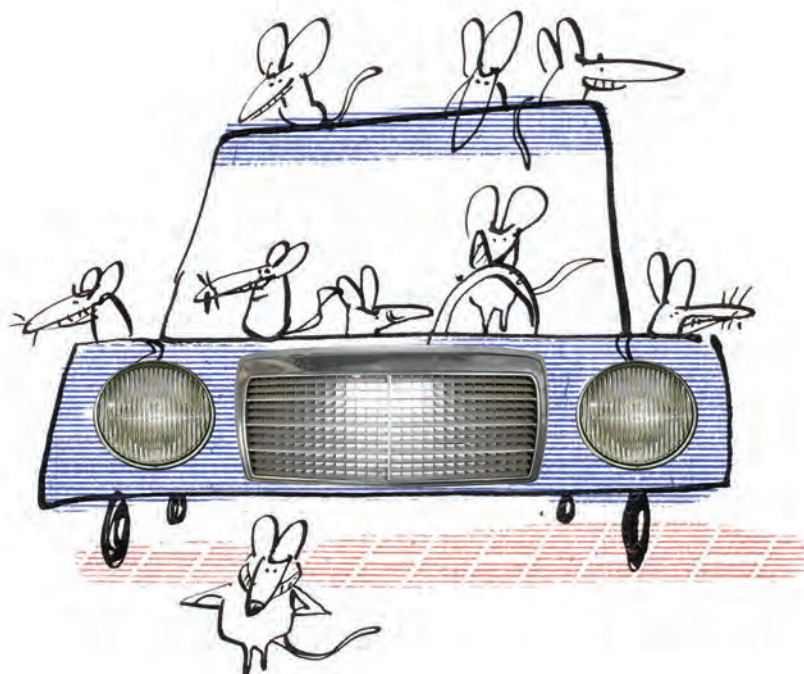
What to do: Stop using it and call YSN Imports at 855-215-4970 or go to flameking.com/recall for a full refund or a replacement cylinder.



BOTTLE AND DISH SOAP

Dr. Brown's is recalling about 23,000 bottle and dish soaps that may contain harmful bacteria, which could cause respiratory and other infections in those with compromised immune systems. The soaps were sold at stores nationwide and Amazon from September 2016 to June 2017 for \$3 to \$7.

What to do: Boil or sanitize anything cleaned with the soap. Call 877-962-2525 or go to drbrownsbaby.com to get a free replacement.



My neighbor said rodents chewed through the wiring in his car. How can I prevent this from happening to me?

When varmints get into your vehicle, it's no joke: They can chomp right through important wires running under the hood. And it happens more than you'd think, especially to idle cars in cold climates, when rodents may seek shelter in your engine bay.

"Though rodent-inflicted damage is an age-old problem, incidents have increased as automakers use more plant-based biodegradable materials to reduce waste—and costs," says John Ibbotson, chief mechanic for Consumer Reports at our auto test track in Connecticut. Although good for the environment, these

greener parts (likely to be in millions of cars) may be an extra lure for hungry critters.

Many dealers won't cover rodent-related repairs even when the car is under warranty. Some Honda and Toyota owners have filed class-action lawsuits that claim the automakers used soy-based wire coatings that appeal to rodents; those owners want restitution for the repairs.

There's not much you can do to prevent mice from getting into the engine bay in the first place. But if you see evidence of intruders, we found a smart fix in a Honda service bulletin: Ask a mechanic to cover important wires with rodent-deterrent tape, which is treated with super-spicy capsaicin. Honda says it's "the stuff that puts the fire in a bowl of five-alarm chili." The tape (part number 4019-2317) is sold online and at Honda dealers for about \$30 to \$34 for a 20-meter roll.

What's the best way to clean my smoothtop range?

While glass-ceramic smoothtop ranges are easier to clean than gas or electric coil ranges, they still need some TLC to sparkle. "Playing offense by catching messes early is the real key to keeping your cooktop pristine," says Tara Casaregola, the lead engineer in CR's oven and range lab. She suggests wiping away spills with a soft, damp sponge after each use, before gunk hardens. And take note of her tool: A soft sponge is best for mopping up, because an abrasive scrubber can etch fine lines into the glass. (For baked-on debris, Casaregola carefully uses a razor blade, at a 45-degree angle, to lift it.)

Once large spills and food bits are removed, use a dry paper towel and dedicated glass-ceramic cooktop cleaner, like Cerama Bryte or Weiman Glass Cook Top Cleaner & Polish. Wipe off excess with a fresh paper towel or a fine microfiber cloth. Never use a household glass cleaner—the ammonia can streak or stain.

"Also, lift heavy pans to move them between burners," Casaregola says. "Dragging them across can make hard-to-clean grooves in the glass."

Is there ever a downside to a credit card company increasing my credit limit?

A higher credit limit can be a good thing if the circumstances are right, says Tobie Stanger, a CR senior money editor. "It can raise your credit score—but only if you don't increase your monthly debt along with it."

Here's the deal: If your credit limit rises but your spending stays the same, you reduce your debt-to-credit utilization ratio. That ratio is the sum of all your credit card balances divided by the total limit on your cards—and it accounts for 30 percent of your FICO score (used most often by lenders). Ideally, your ratio shouldn't be more than 10 percent of the total limit, Stanger says.

But there's a key difference between a lender raising your credit limit of its own accord—which could be done to reward increased card use and a history of on-time payments—and your asking for an increase. The latter may trigger a credit check to prove that you can handle a higher limit. That "hard pull" can ding your score slightly.

Also keep in mind that having too many rarely used credit lines may make you less attractive for mortgage or auto loans. So how much credit should you hold? Add up all of your limits, then multiply by 0.03; that's the minimum monthly payment you'd probably owe if you maxed out all of your cards at once. If you couldn't afford that sum, decline the increase.



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



Eat Smarter, Eat Healthier

Confused about conflicting nutrition news on sugar, salt, fat, and gluten? CR's experts help you separate food fact from fiction and give you simple strategies to make healthy choices that still let you love every bite of what you eat.



FOOD STYLING: JAMIE KIM

PHOTOGRAPHS BY SAM KAPLAN

1

Sugar

The Gateway to Weight Gain

How Sweet It Is
Though it's easy to spot sugar here, you'll need to scan labels to detect it in breads and other packaged foods.



In the last year, we've learned of a food fraud that may have been perpetrated on the American public. A report published in JAMA Internal Medicine revealed that in the 1960s, scientific research—secretly bankrolled by the sugar industry—was released that downplayed the health effects of a sugar-laden diet and instead called out “saturated fat” as the real dietary demon responsible for heart disease. (See “Fat,” on page 27.) And media outlets, food manufacturers, and ordinary citizens ate it up.

That bit of nutritional subterfuge may have been at least partly responsible for 50 years of misleading public health advice. And the resulting flood of packaged foods that were low in fat but high in sugars and refined grains may have contributed to the current epidemic of obesity and its related diseases, such as type 2 diabetes and heart disease, in the U.S.

Today, the typical American diet is packed with huge amounts of added sugars: We're talking those used as ingredients in many packaged foods—not the ones naturally found in foods such as fruit and milk. According to the most recent data from the National Health and Nutrition Examination Survey, Americans eat about 17 teaspoons (73 grams) of added sugars per day, on average, with teenagers consuming the most, about 20 teaspoons (82 grams). That's significantly more than the American Heart Association's recommendation of 9 (or fewer) teaspoons (36 grams) a day for men and 6 teaspoons (24 grams) for

women and children. Children under the age of 2 should consume no added sugars at all, the AHA advises.

One thing there's little doubt about now: Added sugars are bad for you. “It's settled science that a high intake of sugary drinks, the No. 1 source of added sugars in the American diet, is associated with an increased risk of overweight and obesity—conditions that are directly linked to the development of type 2 diabetes,” says Rachel K. Johnson, Ph.D., R.D., a professor of nutrition at the University of Vermont. A 2015 study of more than 1,700 adults found that the odds of being overweight or obese were 54 percent greater among individuals with the highest intake of sugars compared with those with the lowest intake.

According to David Ludwig, M.D., Ph.D., director of the New Balance Foundation Obesity Prevention Center at Boston Children's Hospital, sugar has a specific metabolic effect on your body that contributes to weight gain. Most sugars are a combination of fructose and glucose. “Too much glucose raises blood sugar and insulin. And because insulin is a potent fat-storage hormone, too much insulin is linked to weight gain.” What's more, Ludwig adds, “an overload of fructose goes straight to the liver, overwhelming its ability to process it.” That excess may raise the risk of fatty liver disease and type 2 diabetes.

And even if your sweet tooth hasn't made you gain weight, it may still be putting you at increased risk of heart disease. A 2014 analysis of 40 studies published in the American Journal of

Is Sugar in Fruit Better?

THE TYPES OF sugar found naturally in fruit are processed by your body in the exact same ways as the white mound you spoon into your morning coffee. The difference is the “sugar delivery system,” if you will. For example, the sugars in an apple are encapsulated by the plant-cell walls, says David Ludwig, M.D., Ph.D., director of the New Balance Foundation Obesity Prevention Center at Boston Children's Hospital. It takes time for the body to break down the fruit, so the sugars get into your system slowly and don't cause a spike in blood sugar (glucose) levels that triggers the body to pump out large amounts of insulin. By contrast, added sugars that are not an intrinsic part of a food cause a blood sugar spike because they are digested quickly. This can raise the risk of type 2 diabetes and weight gain. (Fruit juice, by the way, is almost as bad. Though its sugars naturally come from the fruit, they are no longer “bound,” so they are digested quickly.)

What's more, you'd have to eat six navel oranges to get the amount of sugars (71 grams) in one 20-ounce bottle of orange Crush soda. And fruit provides antioxidants, fiber, vitamins, minerals, and other healthy compounds.

—Catherine Roberts

Clinical Nutrition found that a higher sugar intake also meant higher levels of total cholesterol, LDL (bad) cholesterol, and triglycerides no matter how much one weighed. Another study published in JAMA Internal Medicine found that people who got 17 to 21 percent of their calories from added sugars had a 38 percent higher risk of dying from heart disease than those who got 8 percent or less.

Perhaps the trickiest thing about cutting back on added sugars is that you can't always rely on food labels to guide you. (See "How Food Packaging Claims Can Fool You," on the facing page.) The Food and Drug Administration's plan for new food labels that call out these worrisome sugars has been postponed. Some food manufacturers, such as Campbell's and Mars, are using the new labels on at least some of their products anyway, but otherwise, consumers have to fend for themselves.

How to Reduce Sugar Intake

► Swap sugar-sweetened sodas, bottled ice teas, and sports drinks for seltzer

with a splash of no-sugar-added juice; reduce portion sizes of desserts and other sweets if you can't eliminate them altogether.

► Learn all of the sugar synonyms on ingredients labels. That will give you a rough idea of how much "added sugars" are present. Agave syrup, cane sugar or juice, coconut sugar, corn syrup, fruit juice concentrate, honey, and almost anything that ends in "-ose" (such as fructose) are all added sugars. Some of these sugars may sound healthier, but "once it's in your bloodstream, it has the same metabolic effect," Johnson says.

► Scan for hidden sugars in foods such as bread, granola, pasta sauce, frozen dinners, and salad dressings. About three-quarters of packaged foods on store shelves contain added sugars, and a few grams here and there can easily add up to more per day than you should be consuming.

► Add your own sugar. Buy unsweetened versions of foods like cereal, oatmeal, and yogurt, and sweeten them with a little honey or sugar yourself if you need to.

—Sally Wadyka

Fake Sugar Shock

DIET BEVERAGES are the top source of artificial sweeteners in consumers' diets. Some scientific evidence suggests that they don't help with weight loss and may actually lead to weight gain. It's possible that the sweeteners somehow stimulate the appetite so that people end up eating more. They may also alter the gut microbiome, which may affect how the body uses fat. More concerning, a small but growing pool of research has linked consumption of diet drinks to increased risk of diabetes, heart attack, and stroke. None of these studies proves that artificial sweeteners per se are to blame, says Ralph L. Sacco, M.D., professor and chairman of neurology at the University of Miami Miller School of Medicine. Diet soda aficionados may be at higher risk to begin with, he says. But until we know more, the American Heart Association advises that "people should use artificially sweetened drinks cautiously."

—Julia Calderone

3 Ways to Raise a Healthy Eater

Getting children to enjoy healthier foods may be as simple as putting a few key changes in place.

1. Eliminate stealth sugars.

Kids and teens should have less than 25 grams—or 6 teaspoons—of added sugars per day, according to the American Heart Association. (Children under age 2 shouldn't have any.) But that doesn't mean no dessert. "Limiting the added sugars your child gets from everyday staples (such as cereal and yogurt) and foods you don't normally think of as sweet (such as bread, condiments, pasta sauce, and peanut butter) leaves room for the occasional cookie or ice cream cone," says Amy Keating, R.D., a CR dietitian. And don't keep sugary drinks, such as fruit drinks and soda, in the house. Kids ages 2 to 19 get about of 7 percent of their daily calories from these beverages.

2. Eat together whenever possible.

If your child regularly sees you eating healthy foods, he or she is more likely to do so as well. Dining as a family has been linked with better academic performance, and lower risks of depression and substance abuse, as well as lower rates of obesity and eating disorders.

3. Include fruits and veggies at every single meal.

This is actually easier than it sounds with a little bit of clever camouflage. For example, serve salsa as a dip with a few low-sodium corn chips, add mashed banana to plain yogurt, and toss microwaved frozen riced cauliflower into mac and cheese. Less than 60 percent of toddlers get one serving each of fruits and vegetables on any given day, according to a recent study from the University of North Carolina. "Eating more produce is protective against cardiovascular disease and may help to prevent childhood obesity," says Jennette Palcic Moreno, Ph.D., a childhood nutrition researcher at Baylor College of Medicine in Houston. —Rachel Meltzer Warren

How Food Packaging Claims Can Fool You

"NO ARTIFICIAL COLORS." "Good source of fiber." "Contains sea salt." All these package claims and more might make you snatch a product off the supermarket shelf and feel virtuous about doing so.

"Food manufacturers use every possible word they can to magnify the desirability of a product," says Walter Willett, M.D., professor of epidemiology and nutrition at the Harvard T.H. Chan School of Public Health. And that language can lead you to believe you've picked something that's going to make you healthier—even though what's inside that box may not be all that good for you.

Companies have to carefully choose their marketing pitches because some terms are regulated by the Food and Drug Administration, such as low-sodium (meaning the food has 140 mg or less per serving) or "good source of" (meaning it provides 10 to 19 percent of the daily value for a nutrient).

Little wonder, then, that food marketers strive to come up with healthy-sounding slogans that fall outside FDA regulation. It unfairly falls to shoppers, says Willett, to sleuth out what truly makes a food healthy. "Turn the package around," he says, "and read the ingredients and nutrition facts label, paying attention to crucial things like sodium, sugar, whole grains, type of fat, and calories." And watch out for front-of-package tricks like these.

BEWARE WHEN

You see a nutrient claim, such as 'good source of calcium'

Calling out just one or two nutrients can mislead consumers to assume one product is healthier overall than another. For instance, highlighting the calcium content on plain yogurt is one thing because overall, plain yogurt is a healthy food and calcium is naturally present. But a calcium claim on a cookie? It might make you feel better about eating it, but there's probably little benefit. For example, Stella D'oro Breakfast Treats carry the claim "good source of calcium," and the product does supply 10 percent of the daily value for calcium from added calcium carbonate. But with 90 calories, 6 grams of sugars, and zero fiber, the cookie is far from a health food.

BEWARE WHEN

The name of the product itself sounds healthy

The nutrition count of Simply Lay's Sea Salted potato chips is practically identical to Lay's Classic potato chips, with just 10 fewer grams of sodium. Quaker Oats Select Starts Protein instant oatmeals have 10 grams of protein per packet (from added whey protein), but also 12 to 13 grams of sugars. Or consider Stoned Wheat Thins: The word "wheat" in this product name may be confusing, leading consumers to believe they're getting a

whole-wheat cracker. But this one is made with white flour plus a smattering of cracked wheat, and consequently has about a third of the fiber of a true whole-wheat cracker.

BEWARE WHEN

The package is plastered with healthy buzzwords

They can catch your attention, but you can't rely on buzzwords to be a shortcut to finding a healthy food. In some cases, the food may contain so little of the ingredient that it's irrelevant nutritionally. For example, the dehydrated vegetables in roasted vegetable Ritz crackers, which tout "made with real vegetables" on the package, don't change the nutritional makeup of the crackers much at all compared with regular Ritz. Refined wheat flour is the first ingredient listed in both, and each serving has 80 calories and no fiber. In fact, the veggie crackers have 150 mg of sodium per serving compared with 105 in the regular version. And candy labeled "made with real honey," as Brach's candy corn is, may be making a true claim. But honey is a form of added sugar and, in this case, the candy also has four other types of sugars (sugar, corn syrup, confectioner's glaze, and dextrose), for a total of 28 grams of sugars per serving. This warning applies when the package alerts you to what's not there, too. For example, Log Cabin pancake syrup proclaims

"no high-fructose corn syrup," but the top three ingredients are corn syrup, water, and sugars, meaning it's still full of added sugars.

BEWARE WHEN

The words 'simple,' 'natural,' or 'free from' are used

So-called clean labels are increasingly popular. "Consumers want simpler formulas, with ingredients that they can easily understand and fewer or no processed ingredients," says Francine Schoenwetter, director of content at New Hope Network, a research firm. "Label claims such as 'simple' and 'natural' don't have to be verified," says Charlotte Vallaeys, Consumer Reports' senior policy analyst and food labeling expert. You need to look closely to see whether the manufacturers' definition of the terms matches yours. Kozy Shack Simply Well chocolate pudding touts that it is made with simple, wholesome ingredients, but most people probably wouldn't consider inulin (a type of added fiber), sucralose (an artificial sweetener), and carrageenan (a thickener) "simple." "Free from" claims, such as no artificial colors, must be truthful. But the food can still be less than healthy. For example, Kraft Macaroni and Cheese proudly proclaims "no artificial flavors, preservatives or dyes" on the package. However, each cup prepared contains 720 mg of sodium.

—Sally Wadyka

2

Salt

How Too Much Taxes Your Heart

Top Ten
Pizza is a major contributor of sodium in our diets.



There's plenty of scientific evidence showing that too much sodium is bad for your heart. And yet, most Americans—including children—are consuming about 3,500 mg of sodium per day, according to the latest Dietary Guidelines for Americans. That's about 50 percent more than the maximum of 2,300 mg per day the guidelines recommend.

Experts say that sticking to that 2,300 mg is essential to lowering your risk of high blood pressure. "There is no question that going from very high sodium intake to moderate sodium intake improves cardiovascular health," says Andreas Kalogeropoulos, M.D., Ph.D., associate professor of cardiology at Stony Brook University School of Medicine.

Consuming too much sodium can overwhelm the kidneys' ability to process and excrete it. The excess then gets stored in the blood, which increases water retention and blood volume. All of that results in your heart having to work harder to pump blood, increasing the pressure on your arteries and causing them to stiffen. Research shows that following a DASH (Dietary Approaches to Stop Hypertension) diet—a plan lower in sodium, saturated fat, sugars, and processed food—that limits sodium to 2,300 mg a day can lower systolic blood pressure by about 7 points and diastolic by about 3.5 points.

You may have heard that the need to reduce sodium is controversial, but most experts agree that Americans eat too much salty stuff. What is in question is whether going below 2,300 mg daily is necessary, or realistic in our current food environment.

How to Reduce Salt Intake

► Cut back by inches. "Some studies show that if you gradually reduce salt, your taste buds adjust," says Maxine Siegel, R.D., who heads CR's food-testing lab. "And once you get used to less, you won't miss it."

► Don't blame the salt shaker. A 2017 study published in the journal *Circulation* found that only 11 percent of the sodium in our diets comes from the salt we add to food ourselves, and about 71 percent comes from packaged and restaurant food. You have to reduce the restaurant dishes and commercially processed and packaged food that you're eating—or consistently choose low- or no-sodium versions of the ones you buy often—to really make a dent. And sodium is lurking in some foods you wouldn't necessarily suspect. According to the Centers for Disease Control and Prevention, 10 categories of food (breads, pizza, sandwiches, cold cuts and cured meats, soups, burritos and tacos, savory snacks, chicken, cheese, eggs and omelets) account for 44 percent of our overall sodium intake.

► Cook at home. There's a shocking amount of sodium in restaurant foods. For example, the grilled chicken parmigiana at Olive Garden has 2,000 mg of sodium, and an Egg McMuffin at McDonald's has 750 mg. (And these aren't even the highest-sodium items on the menus.) A home-cooked meal allows you to control the salt shaker and to use whole foods—whole grains, fruit, vegetables, legumes—and stay below the 2,300 mg threshold.

—Sally Wadyka

Say So Long to Sodium

The blends below can really kick up the flavor of your food—minus the sodium. Suggestions are for 1 pound of each food.

Pasta

2 teaspoons lemon zest
1/3 cup basil, mint, chives, or parsley, or a combination

Pork

1 teaspoon fennel seed
3 tablespoons fresh rosemary or sage, or a combination

Potatoes

1 tablespoon fresh rosemary
1/4 cup fresh parsley or chives, or a combination

Poultry and Fish

1 teaspoon lemon zest
2 tablespoons fresh oregano or thyme, or a combination

Steak




Make a dry rub of
1/2 teaspoon each black pepper, cinnamon, chili powder, cumin, and oregano

Green Vegetables

1 teaspoon lemon zest
1 tablespoon fresh parsley or thyme, or a combination

Smart Sodium Swaps

PACKAGED FOODS may be a big source of sodium, but the amount varies widely among brands even in the same product category. "You can slash a lot of sodium from your diet simply by comparing sodium amounts on a few similar products side by side on the store shelf," says Maxine Siegel, R.D., who heads CR's food-testing lab.

0 mg sodium		180 mg sodium		390 mg sodium		790 mg sodium		0 mg sodium		250 mg sodium
	VS.				VS.				VS.	
Larabar Blueberry Muffin 1.6 oz.		Clif Bar Blueberry Crisp 2.4 oz.		Healthy Choice Chicken Noodle Soup 1 cup		Campbell's Homestyle Chicken Noodle 1 cup		Birds Eye Steamfresh Whole Green Beans 1 cup		Alexia French Herb Green Beans ⅔ cup

All values apply per package prep direction.

5 Nutrients You May Be Missing

IF YOU'RE EATING a typical American diet, chances are you're falling short on some important nutrients. Diet changes, not supplements, are the answer. "Food supplies the proper mix of nutrients that work synergistically to promote health," says Marvin M. Lipman, M.D., CR's chief medical adviser. "Plus it's too easy to get too much of a particular nutrient from a pill, and some supplements may be harmful. Some people may actually need supplements, but that decision should be made with your doctor." Below are five key vitamins and minerals that your diet may be lacking, and simple dietary fixes to up your intake.

Calcium. The mineral is important for bone health and blood pressure control; adults need 1,000 to 1,200 mg per day. A cup of milk, 6 ounces of yogurt, and 1½ ounces of hard cheeses (like cheddar) each supply about 300 mg. Calcium is also found in almonds, bok

choy, broccoli, broccoli rabe, kale, canned salmon with bones, tofu, and white beans.

Fiber. It helps control your weight, lower blood pressure and cholesterol, ease constipation, fight inflammation, and boost your immune system. Adding a regular rotation of whole grains, legumes, nuts and seeds, and fruits and vegetables to your diet will help you get the recommended 20 to 30 grams of fiber daily.

Magnesium. Nearly half of all Americans fail to get enough magnesium each day (experts recommend 320 mg for women and 420 mg for men), which could cause appetite loss, fatigue, weakness, nausea, vomiting, and in severe deficiencies, irregular heart rhythm, muscle cramps, personality changes, sensations of numbness and tingling, and seizures. Dark leafy greens, legumes, nuts, and whole grains are the best sources.

Potassium. Less than 2 percent of Americans get the recommended 4,700 mg per day. Too little potassium can cause abnormal heart rhythms, weak muscles, and a minor rise in blood pressure. Though most of us associate potassium with bananas, other foods such as leafy greens, potatoes, legumes, and salmon provide more. A meal that includes 1 cup of Swiss chard, 1 cup of acorn squash, and 5 ounces of salmon, for example, supplies more than half your daily recommendation.

Vitamin B12. Anemia, fatigue, weakness, constipation, loss of appetite, and weight loss are all signs of a B12 deficiency, which becomes more common as you age. Four ounces of fish and about 6 ounces of beef provide more than the daily recommended 2.4 micrograms (mcg), but eating dairy products such as cheese, eggs, milk, and yogurt will give your B12 levels a boost, too.
—Julia Calderone

3

Fat

Cutting Back Is Only Half the Battle

Meet in the Middle
You can still
eat steak—in
moderation, and
hold the butter.



Fat is a complicated topic, and well-intentioned efforts to simplify public health messages have only led to confusion.

In the 1980s and '90s, experts advised everyone to eat less fat, period. Cashews and olive oil were lumped into the same category as cheese and butter. But even back then, the research showed that different types of fats—monounsaturated, polyunsaturated, and saturated—had varied effects on health. The thought was that a one-note message—cut fat—would be easier for the public to grasp and would automatically hit the real target: reducing the amount of cholesterol-raising saturated fat people ate.

It did, but it also had unintended consequences. Low-fat became the healthy eater's battle cry, and to compensate, people downed more carbs, but not the "good" kind like whole grains. Instead, people traded steak for pasta, and food manufacturers used refined carbohydrates (white flour and sugars)

in place of fat in processed foods. Margarine—made from partially hydrogenated oils, a source of unhealthy trans fats—replaced butter on our morning toast. Trans fats were used in baked goods and other packaged products, and heart-healthy monos and polys got sidelined.

Now, the fat facts are being scrambled again, with highly publicized studies suggesting that saturated fat may not be so bad for us. And again, black-and-white thinking is poised to do some dietary damage.

According to Frank Hu, M.D., Ph.D., professor of nutrition and epidemiology at Harvard T.H. Chan School of Public Health, we should still pay attention to our saturated fat intake. The likely reason that some studies have not found an association between saturated fat and heart disease is that they did not take into account what was swapped in for the saturated fat. "When we replace saturated fats with refined carbohydrates and added sugars, it's a nutritional wash," Hu says. "Both

are bad." In other words, just because these studies couldn't make a clear condemnation of saturated fat, that doesn't mean you can safely reach for a brick of butter with your toast.

On the other hand, swapping in unsaturated fats (fish, nuts, olive oil) or healthy carbs (grains, legumes, produce) for saturated fats does, in fact, protect your heart. In a study that analyzed data from the large, long-running Nurses' Health and Health Professionals Follow-Up Studies, Hu and his colleagues found that replacing 5 percent of calories from saturated fats with polyunsaturated fats reduced heart disease risk by 25 percent. When monounsaturated fats were subbed in, the risk dropped by 15 percent, and with healthy carbs by 9 percent. There was no change in heart risk in people who cut saturated fat but ate refined carbs in their place.

How to Fine-Tune Your Fat Strategy

► Avoid trans fats. If there's a "bad" fat, this is it; it raises LDL (bad) cholesterol

Making Room for Meat

Being a part-time vegetarian may be best. Here's why and how.

MORE THAN 3 MILLION people in the U.S. are vegetarian (avoiding meat but still eating eggs or dairy) or vegan (avoiding all meat and animal products), according to a survey from market-research firm NPD Group. Compare that with the 26 million who identify as "flexitarian," or flexible vegetarians. These are people who eat a plant-centric diet most of the time but do include some fish, meat, poultry, dairy, and eggs in their meals.

Those who follow a healthy vegan or vegetarian diet have

a lower risk of heart disease, obesity, and type 2 diabetes than omnivores.

But even small decreases in a person's intake of animal foods are linked with a decreased likelihood of developing heart disease, as long as he or she is eating more healthy plant foods like beans and vegetables in their place, says Kim A. Williams, M.D., chief of cardiology at Rush University Medical Center. A recent Harvard University study in the *Journal of the American College of Cardiology* revealed that

those who ate nutritious plant foods, even when they included an average of three servings of meat and/or dairy a day, were 25 percent less likely to develop heart disease than those who ate twice that amount. Flexitarian diets may also lower your risk of diabetes.

Some experts believe that flexitarianism may be the best choice of all, because it's a more sustainable and realistic option for many. "Following a strict vegan or vegetarian diet can be daunting," says Amy Keating, R.D., a CR dietitian. "And many

and lowers HDL (good) cholesterol. Fortunately, this is an easy step. In 2015 the Food and Drug Administration removed partially hydrogenated oils (the biggest source of artificial trans fats) from the list of ingredients it calls “generally recognized as safe” (aka GRAS) and gave food manufacturers and restaurants three years to phase them out of their products. Many have already done so, and all will have to comply by the scheduled deadline of spring 2018.

► Eat more foods that contain unsaturated fat. Avocados, nuts, olive oil, and fatty fish should all appear regularly on your plate. The latest U.S. dietary guidelines don’t put limits on these healthy fats, as long as you keep an eye on calories.

► Follow a whole-foods, plant-based diet. Instead of trying to slash saturated fat, make whole grains, legumes, fruit, and vegetables the centerpiece of your meals. Minimize your intake of added sugars and refined carbohydrates. That way, you’ll naturally be getting less saturated fat in the healthiest way possible.

—Thomas Germain

people replace the meat with refined carbohydrates,” such as bread, pasta, or rice. Indeed, the same Harvard study found that following a not-so-healthy vegetarian diet actually raised heart disease risk by 32 percent.

Easy, Healthy Ways

to Go Flexitarian

► Eat meat at meals, but much less of it. Instead of building your meals around a steak or chicken breast, think of meat more as a side dish. For example, toss 2 ounces of chicken into a green salad with chickpeas, orange slices,

a whole grain, and vegetables. Make a meatloaf using mushrooms or lentils in place of some of the ground meat. Or include thin strips of steak in a stir-fry that’s much heavier on the vegetables and whole grains.

► Go pescatarian. Meaning, swap meat for fish.

► Make some meals meatless. Pick an entire day or two each week to forgo meat and dairy products. Or try the popular “eat vegan before 6,” introduced by food writer Mark Bittman.

—Rachel Meltzer Warren

Healthy or Not? Test Your Food IQ

Think you’re sure whether these foods are good for you—or not? Make an educated guess and check our answers on the next page.

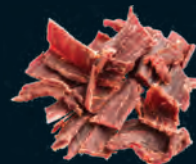
Eggs

● HEALTHY ● NOT HEALTHY



Jerky

● HEALTHY ● NOT HEALTHY



Pretzels

● HEALTHY ● NOT HEALTHY



Soy

● HEALTHY ● NOT HEALTHY



Veggie Sticks

● HEALTHY ● NOT HEALTHY



Honey

● HEALTHY ● NOT HEALTHY



Potatoes

● HEALTHY ● NOT HEALTHY



Red Wine

● HEALTHY ● NOT HEALTHY



Sushi

● HEALTHY ● NOT HEALTHY



TURN TO
PAGE 30
FOR
ANSWERS

Healthy or Not? Test Your Food IQ

Continued from previous page

Eggs



❖ **HEALTHY.** They're rich in nutrients that are good for your brain and eyes, and though they do contain dietary cholesterol, it doesn't appear to have much of an effect on blood cholesterol levels. Even so, most doctors say you shouldn't eat more than seven eggs per week.

Jerky



❖ **NOT HEALTHY.** Though it's a lean source of protein, it's also a high-sodium processed meat. Frequent consumption of processed meats has been linked to an increased risk of colon cancer, type 2 diabetes, and heart disease.

Pretzels



❖ **NOT HEALTHY.** Though they're low in fat, most are made with refined white flour; just five twists may contain 20 percent of the maximum amount of sodium you should have all day.

Soy



❖ **HEALTHY.** Edamame, tofu, and tempeh are associated with a lower risk of some cancers and heart disease. Stick with these whole forms, which are what have been used in the studies that show benefits.

Veggie Sticks



❖ **NOT HEALTHY.** Most are made with primarily potato starch or rice flour—not veggies—and have little fiber or other nutritional benefits. What's more, they can also have about 200 mg of sodium per ounce.

Honey



❖ **NOT HEALTHY.** Adding honey to foods is just like adding table sugar, as far as your body is concerned. When it's an ingredient in packaged foods, it's considered an added sugar—which you should try to avoid whenever possible.

Potatoes



❖ **HEALTHY.** They're a good source of fiber, potassium, and vitamin C. And unless they're fried or served with high-calorie toppings, they won't pack on the pounds.

Red Wine



❖ **HEALTHY.** The evidence is pretty clear that alcohol may protect your heart. But limit it to 5 ounces for women or 10 ounces for men per day. And if you don't drink, there's no reason to start.

Sushi



❖ **HEALTHY.** It can be a low-calorie source of lean protein and healthy omega-3 fatty acids. (Though eating raw fish may carry some food-safety risks.) Just lay off the high-sodium soy sauce. And avoid tuna because it's high in mercury.

Taking Antibiotics Off Your Fast Food Menu

IN AN EFFORT to help consumers know which restaurant chains are the most responsible when it comes to offering meat and poultry raised without the routine use of antibiotics, the Chain Reaction Report was launched by Consumers Union and five other health

and environmental groups.* It grades the country's top 25 fast food and casual chains on their policies and practices regarding antibiotic use in the meat and poultry they serve, and the implementation and transparency of those policies. In its first year, only five chains received a passing grade; in this—its third year—more than half do.

Panera Bread and Chipotle still lead the pack with A grades. Nearly all their meat and poultry are raised without antibiotics. Most other chains that scored in the B to D range have policies





Word on the Bird
'No-antibiotic' chicken is getting easier to find in the meat case, and in packaged foods, like soups and frozen dinners.

How to Choose 'No Antibiotic' Meat and Poultry in Your Supermarket

MORE THAN HALF of consumers are concerned about the biggest consequences of antibiotic use in animals raised for food, according to a 2016 CR nationally representative survey of more than 1,000 people. The consumer pressure is driving suppliers to give "food" animals fewer antibiotics, which in turn protects public health. "The Centers for Disease Control and Prevention and most medical experts agree that widespread use of these drugs to prevent disease in healthy animals or to promote growth contributes to the spread of drug-resistant bacteria," says Jean Halloran, director of food policy initiatives at Consumers Union, the policy and mobilization arm of Consumer Reports. "As antibiotic resistance grows, the medications used to treat infections in people become less effective."

Here are the definitions of the most common "no antibiotic" claims you'll find on supermarket labels:

Organic. Meat and poultry that carry this seal must be raised without antibiotics, with one exception: Chickens and turkeys can be given the drugs while the chick is still in the egg and on its first day of life.

Raised without antibiotics. This and related phrases, such as "no antibiotics ever" and "never given antibiotics," aren't required to be verified but are usually reliable. You know for certain if the claim is accompanied by either the USDA Process Verified Shield or Organic seal. Sick animals that need antibiotics would be removed from the "no antibiotic" line and sent for processing with animals raised conventionally.

No medically important antibiotics. This means that drugs used to treat people—such as amoxicillin, erythromycin, and tetracycline—aren't given to the animals. But this still allows for the use of antibiotics that aren't medically important, which can lead to antibiotic resistance to other drugs.


























No growth-promoting antibiotics. This is an indication that no antibiotics were fed to the animal to accelerate growth. According to guidelines from the Food and Drug Administration, medically important antibiotics can no longer be used for growth promotion, although drugs not used in people can be used, so this practice is only a slight improvement over the industry standard. And the drugs are still given to animals to prevent disease.
—Trisha Calvo

that restrict antibiotics use only in chicken. The biggest mover since last year is KFC: It went from an F to a B- because it announced that it would stop serving chicken raised with medically important antibiotics by the end of 2018.

Some smaller chains not represented on the scorecard are also making progress. For example, all of the chicken served at Dickey's BBQ is no-antibiotic, as is all of the beef, pork, and poultry served at

Cheesecake Factory.

"Fast food restaurants should help protect public health by moving away from serving meat and poultry from suppliers who misuse these vital drugs," says Jean Halloran, director of food policy initiatives at Consumers Union, the policy and mobilization arm of Consumer Reports. "The future effectiveness of antibiotics depends on making sure they are used only to treat sick animals, or stop a verified disease outbreak."

2017 Scorecard on Antibiotics Policies & Practices									
A	 								
B+			B			B-	 		
C+			C						
D+	 		D	   					
F	     								
	    								
Grade	A 91-100		B+ 77-83		C+ 52-59		D+ 29-35		F <19
Scale	A- 84-90		B 67-76		C 43-51		D 19-28		
			B- 60-66		C- 36-42				

Gluten

For Most People, Eating Less Gluten May Be Risky

Diet Damage
A gluten-free diet isn't necessarily a healthy diet.



For nearly a decade,

popular diet plans have proposed that gluten—a protein found in wheat, rye, and barley—is responsible for many common health problems, igniting an anti-gluten wildfire that just won't extinguish. About a third of Americans buy gluten-free foods, according to market research firm Mintel, believing that eliminating gluten is healthier, and that it helps with weight loss, skin conditions, inflammation, and attention deficit disorder.

It's not surprising then that sales of gluten-free foods have increased 178 percent from 2013 to 2016. The craze has been making food manufacturers fat and happy with profits to the tune of a new market that's worth almost \$14 billion.

The trouble is there's little evidence that a gluten-free diet has any health benefits for most people. Some people do need to avoid gluten: those with celiac disease, an autoimmune condition, for whom gluten causes intestinal inflammation and damage, and those who have a condition known as non-celiac gluten sensitivity (NCGS) that can cause gastrointestinal symptoms in response to gluten. But these two conditions combined affect

less than 7 percent of Americans.

For people without celiac or NCGS, there's not much to recommend gluten-free. A 2017 study in the *British Medical Journal* found no connection between eating gluten and an increased risk of heart disease in people without celiac disease. In fact, giving up gluten may actually be harmful. The same study showed that people who chose a gluten-free diet were more likely to eat fewer whole grains—and thereby deprive themselves of the health benefits of whole grains.

What's more, because gluten-free foods can be gummy and unpalatable, manufacturers often add sodium, sugar, and fat to overcome this—which also adds calories, points out Alice Lichtenstein, D.Sc., a professor of nutrition science and policy at Tufts University. The second downside is that it may increase your intake of arsenic and other heavy metals. A recent study published in the journal *Epidemiology* showed that people who were on a gluten-free diet had up to twice the amount of arsenic and 70 percent more mercury in their systems than people who were not. That's because gluten-free cereals, crackers, and pastas are often made with rice flour. Consumer

Reports' food-safety experts have found that rice and rice-based products can have worrying amounts of arsenic.

"The bottom line is that by eliminating gluten from your diet unnecessarily, you are missing out on some important aspects of nutrition," says Marvin M. Lipman, M.D., Consumer Reports' chief medical adviser.

Follow These Gluten Guidelines

► **Eat whole grains.** Some popular gluten-free diets (such as Wheat Belly and Grain Brain) are essentially low-grain diets. But everyone—including those with celiac or NCGS—should eat more whole grains (amaranth, millet, and quinoa are a few gluten-free grains). They've been shown again and again to help protect against cancer and heart disease. They're also high in fiber, which lowers your risk of type 2 diabetes and can help you lose weight by making you feel full.

► **Choose gluten-free foods carefully.** You're likely to eat some no-gluten foods, even if you aren't giving up gluten. Scrutinize the labels for high fat, sugars, or sodium levels. If you see any of them, seriously consider skipping the item.

—Catherine Roberts

5 Healthy Whole Grains

Whole-grain foods, such as whole-wheat bread, are those that contain the entire grain kernel—the bran, endosperm, and germ. Refined grains, such as white flour and white rice, contain only the endosperm. This distinction is important because the bran and germ are where most of the healthy stuff—antioxidants, B vitamins, fiber, magnesium, and other nutrients—is found. Though opting for whole-grain versions of bread and cereals is a good idea, the best way to get your whole grains is to eat them in their most natural state—meaning the grain itself (we're talking bulgur and oats). Also experiment with these less well-known but highly nutritious whole grains. —Catherine Roberts



Amaranth

Serve with fruits and nuts as a hot cereal, or with thyme or other herbs as a side dish.

251 Calories

9 Protein (g)

4 Fat (g)

46 Carbs (g)

5 Fiber (g)



Freekeh

This roasted, young, green wheat can be used in any recipe in place of rice.

173 Calories

8 Protein (g)

1 Fat (g)

37 Carbs (g)

5 Fiber (g)



Millet

To enhance flavor, toast in a skillet before boiling. Add to salads or soups. And millet flour can be used for baking.

207 Calories

6 Protein (g)

2 Fat (g)

41 Carbs (g)

2 Fiber (g)



Quinoa

Rinse before cooking. Use as a base for chili or soup, or serve with herbs and onion as a side dish.

222 Calories

8 Protein (g)

4 Fat (g)

39 Carbs (g)

5 Fiber (g)



Teff

This tiny grain can be used in place of rice in a pilaf or a porridge, or stirred into chili or soup.

255 Calories

10 Protein (g)

2 Fat (g)

50 Carbs (g)

7 Fiber (g)

Per 1 Cup, Cooked



Countertop Intelligence

The best of the new countertop appliances make fast work of fresh and healthy meals. We put them to the test to help you decide which deserve a place in your kitchen—and provide ratings on blenders, microwaves, toaster ovens, and more.

by **Kimberly Janeway**

When the going gets tough, the tough order takeout. Last year Americans spent about \$720 billion at restaurants, a 19 percent increase since 2012 and nearly half of what we spent on food overall. But restaurant meals—and the frozen ones we heat up when we're pressed for time—are often high in fat and sodium, which means that what we gain in convenience we often lose in terms of a healthy diet. “The only way to have complete control over ingredients and portion size is to cook at home,” says Maxine Siegel, a CR dietitian. “But finding time for that can

often be quite a challenge for people.”

One way home cooks are bucking the takeout trend and eating more healthy foods is with countertop appliances that reduce prep and cooking time and do more of the work. “Sales of multi-cookers, air fryers, pressure cookers, and toaster ovens are up,” says Joe Derochowski, an industry analyst at the market research firm NPD Group. “This is due in part to consumers’ desire to eat healthier.”

But in a field crowded with appliances that manufacturers claim can save the consumer time and effort (like the \$100 Instant Pot that

“speeds up cooking by 2 to 6 times” or the \$1,000 All-Clad Prep & Cook that’s supposed to act as “your very own sous chef”), it’s hard to tell what’s worth the investment—and the precious real estate on your counter.

To guide you, we’ve put a collection of trendy, time-saving specialty kitchen appliances to the test, along with the blenders, food processors, toaster ovens, and microwaves we evaluate throughout the year. Turn the page to learn which ones really will save you time, which ones provide convenience, and which ones will make a worthwhile addition to your countertop arsenal.

Pressure Cookers

How to Cook Faster With an Updated Classic

TIME-STARVED CHEFS are increasingly turning to pressure cookers to get meals on the table in short order. Sales are up more than 25 percent in the past 12 months, according to the market research firm NPDP Group.

Earlier versions had a reputation for exploding (cookers create intense internal pressure). But today's models have safety mechanisms that make it less likely you'll ever have to scrape stew off the ceiling. As

always, it's best to follow the manufacturer's instructions for the safest operation.

We tested five 6-quart models, cooking healthy and affordable staples such as brown rice, black beans, and chicken thighs. The food consistently turned out tender and delicious, and was ready considerably faster than when prepared by more conventional methods. Dried beans that might require at least 2 hours on the stovetop or 12 in a slow cooker (after a

12-hour soak) were ready in about an hour. The stovetop models are better at browning and are generally faster than the electric ones but require a bit more attention.

Some foods, such as rice and beans, need room to expand, so follow the instructions on how full the pot should be. When using an electric model, enhance the flavor of meat by browning it in a skillet before putting it in the cooker.



STOVETOP



FISSLER VITAQUICK
FISS-60030006079 F6
\$200

The stainless steel Fissler is pricey but works with all range types and cooks the fastest of all the tested models. Another time-saver? This cooker is dishwasher safe.

WARRANTY Limited lifetime



PHILIPPE RICHARD
ALUMINUM TTUI9554
\$30

This inexpensive aluminum cooker isn't as quick, in part because the bottom isn't perfectly flat, so it doesn't make complete contact with electric smoothtop and coil-top surfaces. The model does pick up speed, though, on a gas range.

WARRANTY Limited lifetime

FOOD-PREP FACE-OFF

Can Cutting-Edge Food Choppers Live Up to Their Pricey Promise?

ALL-CLAD VOWS that its \$1,000 **Prep & Cook** will become "your very own sous chef." Bellini claims that "there is no better assistant" than its \$550 **Kitchen Master**.

These appliances, best described as food choppers that also cook, are marketed as a way to make preparing a meal from scratch easier than ever. They can whip up soups, stews, and chocolate mousse—but at prices like these, we half expected them to also clean up and walk the dog. We decided to see whether they measure up to the hype. **CR's findings:** Both appliances have digital displays, are intuitive to

use, and are sold with the promise—among other things—to whip up risotto with the push of a few buttons and without any supervision.

The Bellini produced good-tasting fare, but its aggressive stirring changed the food's texture. "The Bolognese and caramelized onions were finer-textured than usual, and the rice broke down, making the risotto mushy," says Bernie Deitrick, a CR engineer. "And not all the steamed mussels, which typically take only a few minutes on the stovetop, were done after 15 minutes."

The All-Clad did a much better job with the risotto, and it

steamed the mussels faster, but it wasn't good at caramelizing onions. It prepared tasty Bolognese, garlic mashed potatoes, and other dishes, but none were a revelation. Prepping and cooking in a single bowl cuts down on dirty dishes, but the small size (both have a capacity under 3 quarts) means you can't feed a crowd.

The verdict: The All-Clad did better than the Bellini, but neither impressed us enough to earn precious counter space. A food chopper or food processor (see ratings on page 42) won't cook but can handle much of the same food prep at a fraction of the price.

**ALL-CLAD PREP &
COOK HP503152**
\$1,000





ELECTRIC



**FAGOR PREMIUM
PRESSURE & RICE COOKER**
670041930 \$100

Slightly faster than other comparable electric cookers, the Fagor offers more settings than most (such as risotto and rice). You can program it for up to 6 hours in advance, and the cooker switches to keep-warm mode for up to 12 hours.

WARRANTY Limited 1 year



CUISINART CPC-600
\$100

This Cuisinart comes with all the basic settings (browning, simmering, sautéing) and an automatic keep-warm feature. Like the other electric cookers shown here, it has a dishwasher-safe removable bowl with a nonstick interior.

WARRANTY Limited 3 years



**POWER PRESSURE
COOKER XL PPC**
\$97

The slowest in every test, this model took 50 percent longer than the Fagor to reach pressure. There's an automatic keep-warm mode and a 4-hour delay setting, but the shockingly short warranty suggests this cooker might not stand the test of time.

WARRANTY 60 days

**BELLINI KITCHEN
MASTER
BMKM510CL**
\$550



Air Fryers

How to Conquer Your Fear of Frying

THERE'S NOTHING quite like the crunchy, lip-smacking taste of fried food. Too bad much of that flavor comes from the fat the food is fried in, which has been linked to illnesses including obesity and heart disease.

Air fryers, which cook with very hot circulating air, are supposed to provide a healthier alternative to conventional frying because they use little or no oil. While they technically cook by convection roasting rather than frying, we found that an air fryer can, in fact, deliver results similar to the real thing.

We tried out the \$350 **Philips HD9230/26 Digital Airfryer**, which measures roughly 12 inches wide and weighs in at 15 pounds. It houses a food basket, an electric heating element, and a fan. A digital touch screen lets you set a timer and the temp (330° F, 360° F, or 390° F).

Our testers air-fried french fries (fresh and frozen), sweet-potato fries, and chicken tenders with fantastic results. They also loved how the air fryer cooked steak, sausage, toasted cheese sandwiches, and burgers.

"The sweet-potato fries were very crispy, the sausage was delicious, and the frozen fries tasted better than those cooked in regular and convection ovens," says Bernie Deitrick, a CR engineer. "Everything we made was as good as or better than when cooked in the oven."

Deitrick's main piece of advice for using an air fryer? Don't overload the basket. "It can slow down cooking and block the air from reaching all the food, so some pieces will turn out better than others," he says.

We're not claiming that foods cooked in an air fryer are the healthiest choices. But eating yummy versions cooked with less oil is certainly a good place to start.



Full of Hot Air
Air fryers like the Philips HD9230/26 can cook many foods to a satisfying crunch using little or no oil.

Multi-Cookers

These Multitaskers Are Big Time-Savers, Too

LIKE A SLOW COOKER on steroids, multi-cookers steam, slow-cook, brown, bake, and keep food warm without the constant temperature monitoring and other supervision that stovetop cooking entails.

We tried out the cookers at right, using them to prepare stir-fried Kung Pao chicken, slow-cooked beef stew, roasted chicken breasts, steamed broccoli, brown rice, white rice, risotto,

quinoa, and even yogurt. They free you up from time otherwise spent at the stove and come in handy when a recipe requires more than one form of cooking, such as a roast that calls for browning and then slow cooking. For best results with these, chop your veggies in uniform sizes to ensure even cooking when steaming or making soup, and don't crowd the pot when searing meat.



**KITCHENAID KMC4241
MULTI-COOKER**
\$250

CAPACITY 4 quarts
This multi-cooker made dishes as good as—or better than—those made on a rangetop, though not as quickly. It's also a bit noisier than other models we tested. The \$150 Stir Tower KST4054 accessory adds considerably to the cost, but it frees you from stirring risotto or caramelized onions.
WARRANTY 1 year



**CUISINART 3-IN-1 COOK
CENTRAL MSC-600**
\$159

CAPACITY 6 quarts
Though this model doesn't prepare rice, it fared better in cooking, generally, than the lower-priced Black+Decker, providing a better sear and a more uniform sauté. Its functions include simmering, slow cooking, steaming, and high-heat cooking (up to 400° F).
WARRANTY 3 years



**BLACK+DECKER
MC1100S**
\$100

CAPACITY 6.5 quarts
Less powerful than the Cuisinart, this cooker is slower to heat. Cooking temperatures range from 200° F to 450° F, but generally we found that food didn't turn out as well. The roast function was disappointing: The chicken we made wasn't well-browned and tasted steamed, not roasted.
WARRANTY 2 years

Instant Pot

A Closer Look at a Very Popular Pot



An Instant Hit

The Instant Pot's versatility has won it legions of fans.

THE ONE-OF-A-KIND Instant Pot, which pressure-cooks and does a number of other cooking tasks, has quite a following. Its official Facebook community page has more than 630,000 members, who swap recipes for roast chicken, Greek yogurt, 5-minute salmon and pilaf, and other fare.

Readers urged us to weigh in on it, so we bought the \$100 **Instant Pot DUO60 7-in-1**, which has seven functions (pressure cooking, rice cooking, slow cooking, steaming, sautéing, yogurt making, and warming). Preset programs eliminate guesswork for cooking chili, stew, and other popular, hearty dishes, and the inner stainless pot has a 6-quart capacity. (An 8-quart model is also available.) The warranty is for one year.

So how well did the Instant Pot live up to the promise to "cook healthy food fast"?

"The Instant Pot is what it claims to be," says Bernie Deitrick, a CR test engineer. "Combining

the speed of an electric pressure cooker with a variety of other functions, it offers hands-off cooking that frees you to do other things. It doesn't make better-tasting food, but it's faster and easier than cooking on a stovetop."

Two cups of brown rice took 43 minutes in pressure-cooker mode vs. 60 minutes on the stove. A pound of red beans—which we didn't soak first, to save time—turned out tender and delicious in an hour. Ditto dried pinto and black beans, both of which would take at least 2 hours on the stove after an overnight soak. (All our listed cooking times include the time the pot took to reach pressure and later release it.)

The Instant Pot lacks the power to sear meat, so while our Kung Pao chicken cooked nicely, it didn't brown. But that's all we found to complain about after putting this pot through its paces—and that's really saying something.

We Pit a High-End Blender Against a Low-Cost Copycat

IF IMITATION IS the sincerest form of flattery, then Vitamix, a maker of high-priced blenders, ought to be blushing.

When our testers unpacked the \$130 **Kalorik 1500 Series Pro** blender, they noticed that it bore a striking resemblance to the \$400 **Vitamix 5200**. We certainly understand the money-saving appeal of the Kalorik, but we think that performance and reliability also ought to factor into buying

decisions. Could this relatively inexpensive blender measure up to a similar-looking model that costs hundreds more? To find out, we put them through our series of blender tests.

CR's findings: Both blenders, which have similar dimensions and an 8-cup capacity, scored in the same neighborhood on several key tests. Although they are both rated Excellent for making icy drinks and puréeing soup, CR's

experts reported that the Vitamix performed those tasks better. The Vitamix is much better at crushing ice—and quieter while doing it.

After our performance tests, we ran a durability test to see how well the blenders might fare over time. That's where the disparity became clear. In the durability test, our engineers crush ice 45 times over a two-day period. Kalorik essentially cracked under the pressure: It simply

stopped working.

"Most blenders do well in our durability test; only six of the 86 we tested failed," says Cindy Fisher, who oversees CR's blender test program.

"The first Kalorik we tested failed at the 32nd cycle; the second one we tested passed." (The results are combined to create a durability score, which you can see below.) The Vitamix 5200 aced our durability test, which isn't surprising: Vitamix turned out to be a more

reliable full-sized blender brand than most in our survey of more than 29,000 readers. (Kalorik, a lesser-known brand in the U.S., wasn't included in that survey.)

The verdict: In this case, the higher price buys you not just better overall performance but probable longevity, too, which may be why the Vitamix motor is covered under warranty for seven years. The Kalorik's motor has a two-year warranty.

Face-Off

VITAMIX 5200		KALORIK 1500 SERIES PRO BL43310
79	OVERALL SCORE	59
\$400	PRICE	\$130
⬆	ICY DRINKS (SMOOTHIES)	⬆
⬆	CONVENIENCE	⬆
⬆	PURÉE	⬆
⬆	ICE CRUSH	⬇
⬇	NOISE	⬇
⬆	DURABILITY	⬇



Ratings ➤ **Countertop All-Stars** To make it even easier to outfit your kitchen with small appliances, we rounded up our top-scoring countertop microwaves, toaster ovens, food processors, and full-sized and immersion blenders.

COUNTERTOP MICROWAVES

		Brand & Model	Overall Score	Price	Test Results						Features		
Recommended	Rank				Heating evenness	Defrosting evenness	Speed of heating	Microwaving noise	Ease of use	Usable capacity (cu. ft.)	Sensor	Convection mode	Dimensions (HxWxD)
MIDSIZED COUNTERTOP MICROWAVES													
✓	1	LG LCS1112ST	72	\$140	↑	↑	↑	↑	↑	0.6			12x20x16
✓	2	Avanti MO1250TW	72	\$130	↑	↑	↑	↑	↑	0.8			12x22x17
	3	Summit SCM1000SS	71	\$250	↑	NA	↑	↑	↑	0.8			13x21x18
	4	Frigidaire FFCE1134L[S]	71	\$120	↑	↑	↓	↑	↑	0.5			12x21x16
	5	General GEW1000E	70	\$350	↑	NA	↓	↑	↑	0.8			12x20x16
	6	Panasonic Genius Prestige NN-SD681S	70	\$180	↑	↑	↑	↓	↑	0.7	•		12x21x16
	7	Panasonic Prestige NN-SD372S	68	\$140	↓	↑	↓	↑	↑	0.5			11x19x15
	8	Danby DMW111KBLDB	68	\$90	↑	↑	↓	↑	↑	0.6			12x21x16
	9	Samsung MC12J8035CT	67	\$500	↓	↑	↓	↑	↑	0.8		•	16x21x19
	10	Samsung MC11H6033CT	67	\$300	↑	↑	↓	↑	↑	0.8		•	12x21x20
	11	Sharp R331ZS	64	\$125	↑	↑	↓	↑	↑	0.7			12x20x16
	12	GE Profile PEM31SFSS	63	\$320	↓	↑	↓	↑	↑	0.6	•		12x24x13
	13	Magic Chef MCM1110ST	61	\$80	↓	↓	↓	↑	↑	0.6			12x20x17
LARGE COUNTERTOP MICROWAVES													
✓	1	Panasonic NN-SD945S	75	\$170	↓	↑	↑	↑	↑	1.4	•		14x24x20
✓	2	Oster OGG61403	74	\$120	↑	↑	↑	↑	↑	0.8			13x22x20
✓	3	LG LCRT2010[ST]	73	\$200	↑	↑	↑	↑	↑	1.2	•		14x24x20
	4	Panasonic NN-SN966S	72	\$250	↑	↑	↑	↑	↑	1.4	•		14x24x19
	5	GE Profile JES2251SJ[SS]	72	\$280	↑	↑	↑	↑	↑	1.5	•		14x24x19
	6	LG LCRT1513ST	71	\$150	↓	↑	↑	↑	↑	0.9	•		13x22x17
	7	Panasonic NN-SE785S	70	\$290	↑	↑	↑	↑	↑	0.9	•		12x22x19
	8	Sharp R551ZS	70	\$160	↑	↑	↓	↑	↑	1.1	•		14x23x19
	9	GE JES2051SN[SS]	70	\$250	↑	↑	↑	↑	↑	1.2	•		14x25x20
	10	Sharp R651ZS	69	\$180	↑	↑	↓	↑	↑	1.3	•		14x24x20
	11	Magic Chef MCD1611ST	68	\$140	↑	↑	↑	↓	↑	1.1			14x24x19
	12	LG LMC1575	68	\$200	↓	↑	↑	↑	↑	0.8	•		13x22x17
	13	KitchenAid KCMS2255BSS	68	\$540	↑	↓	↑	↑	↑	1.3	•		14x24x20
	14	Whirlpool WMC50522AWS	68	\$270	↑	↓	↑	↑	↑	1.3	•		14x24x20
	15	Kenmore Elite 79393	67	\$250	↓	↑	↑	↑	↑	1.4	•		15x25x21
	16	Danby DMW14SA1BDB	67	\$150	↓	↓	↓	↑	↑	0.7	•		13x21x17
	17	Frigidaire Gallery FGMO205K[F]	67	\$320	↑	↑	↑	↑	↑	1.2	•		14x24x19
	18	Hamilton Beach P10034AL-T4A	67	\$140	↓	↑	↓	↑	↑	0.8			12x21x19
	19	Frigidaire FFCE1439LB	67	\$150	↑	↑	↓	↑	↑	0.7	•		13x21x17

COUNTERTOP MICROWAVES

		Brand & Model	Overall Score	Price	Test Results						Features		
Recommended	Rank				Heating evenness	Defrosting evenness	Speed of heating	Microwaving noise	Ease of use	Usable capacity (cu. ft.)	Sensor	Convection mode	Dimensions (HxWxD)
	20	Panasonic NN-SD745S	66	\$195	↓	↑	↑	↑	↑	0.9	•		12x22x20
	21	Panasonic NN-SN736B	66	\$135	↓	↑	↑	↑	↑	0.9	•		12x22x20
	22	Magic Chef MCD1811ST	65	\$140	↓	↑	↑	↑	↑	1.1			14x24x19
	23	GE Profile PEB7226SFSS	65	\$330	↑	↑	↓	↑	↑	1.3	•		14x24x20
	24	GE Café CEB1599SJSS	65	\$620	↓	↑	↓	↑	↑	0.8	•	•	13x22x20
	25	GE Profile PEB9159SJSS	63	\$610	↓	↑	↓	↑	↑	0.8	•	•	13x22x21
	26	Frigidaire FFCE2278L[S]	62	\$190	↑	↑	↑	↓	↓	1.3	•		14x25x21
	27	Oster OGYZ1602B	62	\$110	↑	↑	↓	↑	↑	0.9			13x22x19
	28	Electrolux EI24MO45IB	62	\$470	↑	↓	↓	↓	↑	1.2	•		14x25x20

LARGE COUNTERTOP MICROWAVES *Continued*

> Online subscribers can go to [CR.org/microwaves](https://www.consumerreports.org/microwaves) for complete up-to-date ratings.

TOASTER OVENS

		Brand & Model	Overall Score	Price	Test Results							Features	
Recommended	Rank				Baking	Broiling	Ease of use	Ease of cleaning	Color range	Full batch	One slice	Convection oven	Dimensions (HxWxD)
👍	1	Breville Smart Oven Pro BOV845BSS	76	\$270	👍	👍	👍	👍	👍	👍	👍	●	11x19x16
👍	2	Wolf Gourmet Countertop WGO100S Oven	74	\$550	👍	👍	👍	👍	👎	👍	👍	●	13x23x17
👍	3	Cuisinart Chef's Toaster Convection TOB-260N	74	\$260	👍	👍	👍	👍	👎	👍	👍	●	11x21x17
👍	4	Krups DeLuxe Convection OK710D51	72	\$120	👍	👍	👍	👍	👎	👍	👍	●	12x20x17
👍	5	Breville Smart Oven BOV800XL	72	\$250	👍	👍	👍	👍	👍	👍	👍	●	19x11x16
👍	6	DeLonghi Livenza Stainless EO 241250M	70	\$269	👍	👍	👍	👍	👎	👍	👍	●	12x19x18
	7	Cuisinart TOB-260 Oven	69	\$260	👍	👍	👍	👍	👎	👍	👍	●	11x21x18
	8	Breville Smart Oven Air Convection BOV900BSSUSC	69	\$400	👍	👍	👍	👍	👎	👍	👍	●	13x21x18
	9	Panasonic FlashXpress NB-G110P Oven	68	\$125	👍	NA	👍	👎	👍	👍	👍		10x13x12
	10	Breville BOV650XL Oven	67	\$180	👍	👍	👍	👍	👍	👍	👍		9x17x15
	11	Black+Decker Dining In Digital TO3280SSD Oven	65	\$90	👍	👍	👍	👍	👎	👍	👎	●	12x18x15
	12	Oster TSSTTVMNDG Oven	64	\$80	👍	👍	👎	👎	👎	👍	👍	●	12x20x16
	13	Frigidaire FPCO06D7MS Oven	64	\$120	👍	👍	👍	👎	👎	👍	👍	●	12x18x16
	14	Hamilton Beach Toaststation 22720	63	\$50	👎	NA	👍	👎	👍	👍	👍		8x16x9
	15	KitchenAid Digital Convection Countertop KCO273SS	63	\$250	👎	👍	👍	👍	👍	👎	👍	●	12x18x14

> Online subscribers can go to [CR.org/toasters](https://www.consumerreports.org/toasters) for complete up-to-date ratings.

IMMERSION BLENDERS

Rec.	Rank	Brand & Model	Overall Score	Price	Test Results	
					Yogurt blend	Soup puree
✓	1	Breville Control Grip BSB510XL	92	\$100	⬆	⬆
	2	Cuisinart Smart Stick CSB-75	76	\$35	⬆	⬆
	3	Electrolux Masterpiece ELHB10B9PS	69	\$230	⬆	⬇
	4	Oxo Bright Digital Immersion Blender	65	\$90	⬆	⬆
	5	Bodum Bistro Blenderstick	64	\$60	⬇	⬆

> Online subscribers can go to [CR.org/blenders](https://cr.org/blenders) for complete up-to-date ratings.

FOOD PROCESSORS

Rec.	Rank	Brand & Model	Overall Score	Price	Test Results						Features	
					Chopping	Slicing	Shredding	Pureeing	Grating	Noise	Weight (lb.)	Claimed capacity (cups)
✓	1	Breville Sous Chef BFP800XL/A	81	\$400	⬆	⬆	⬆	⬆	⬆	⬆	19	16
✓	2	Cuisinart Elite Collection 2.0 FP-12BCN	67	\$200	⬆	⬆	⬆	⬇	⬇	⬆	16	12
✓	3	Oster Pro 1200 Plus Food Processor Attachment BLSTMB-CBF-000	67	\$90	⬆	⬆	⬆	⬆	⬆	⬇	6	5
✓	4	Cuisinart Custom 14 DFP-14BCNY	66	\$180	⬆	⬆	⬆	⬇	⬆	⬆	15	14
	5	Breville Sous Chef 12 BFP660 SIL	64	\$300	⬆	⬆	⬆	⬇	⬇	⬆	16	9
	6	Oster Versa 1100 Series Performance	64	\$150	⬆	⬆	⬆	⬇	⬇	⬇	7	5
	7	Electrolux Masterpiece PowerTilt ELFP15D9PS	64	\$500	⬆	⬇	⬆	⬇	⬆	⬆	20	18
	8	Cuisinart Elite Die-Cast 16-Cup	63	\$300	⬆	⬆	⬆	⬇	⬇	⬆	19	16
	9	Cuisinart Prep 11 Plus DLC-2011CHBY	63	\$180	⬆	⬇	⬆	⬇	⬆	⬆	13	11

> Online subscribers can go to [CR.org/foodprocessors](https://cr.org/foodprocessors) for complete up-to-date ratings.

⚠ | RECALL UPDATE: CUISINART'S FOOD PROCESSOR BLADES

A FOOD PROCESSOR without a blade is useless. Yet some consumers say that Cuisinart still hasn't sent their free replacement blade after the company recalled a record 8 million food processors in December 2016. The models, sold between July 1996 and December 2015, were recalled following 30 reports of mouth lacerations or tooth injuries caused by

pieces of broken blades that wound up in food.

A Cuisinart rep told CR last February that customers would receive replacements in the order they registered online or called in.

In mid-August, a Cuisinart spokesperson told us the company had shipped about 90 percent of the requested blades. But we've heard from consumers who



haven't received theirs. "Still waiting, with no updates," commented one reader on CR.org. "Same old song and dance," wrote another.

When a CR staffer called

Cuisinart customer service in early September for an update on the blade she had requested in late March, she was told the company was shipping orders placed in early March.

You can call Cuisinart at 877-339-2534 for an update on your blade, or join other consumers and make your voice heard on the company's Facebook page.

FULL-SIZED BLENDERS

		Brand & Model	Overall Score	Price	Test Results						Features		
Rec.	Rank				Icy drinks (smoothies)	Convenience	Purée	Ice crush	Noise	Durability	Weight (lb.)	Height (in.)	Claimed capacity (cups)
	1	Vitamix Professional Series 750	85	\$650							13	18	8
	2	Blendtec Designer 725	84	\$650							11	16	5
	3	Cuisinart Hurricane Pro CBT-2000	80	\$300							11	18	8
	4	Vitamix 5200	79	\$400							11	20	8
	5	Dash Chef Series Digital	78	\$200							11	22	8
	6	Ninja Professional NJ600	78	\$100							7	18	9
	7	Ninja with Auto-iQ BL642-30	77	\$200							17	18	9
	8	L'Equip RPM Professional	77	\$380							9	19	7
	9	Tribest Dynablend Horsepower Plus High Power DB-850GA	75	\$160							10	17	7
	10	Blendtec Designer 625	74	\$500							9	15	5
	11	Wolf Gourmet High Performance WGBL100S	73	\$600							13	17	8
	12	Breville The Boss BBL910XL	71	\$400							13	18	8
	13	Dash Chef Series Power Blender	70	\$180							11	21	9
	14	Braun PureMix JB7172BK	69	\$160							10	16	7
	15	Breville Hemisphere Control BBL605XL	69	\$200							9	17	6
	16	Oster Versa 1100 Series Performance	68	\$150							7	17	8
	17	Ninja BL770 [†]	68	\$200							9	18	9
	18	Hamilton Beach Commercial Tempest HBH650	68	\$450							12	18	8
	19	Ninja BlendMax Duo with Auto-iQ Boost BL2013	68	\$220							11	18	11
	20	Cuisinart Hurricane 2.25Peak HP CBT-1500	68	\$200							8	17	8
	21	Electrolux Masterpiece ELJB74D9PS	68	\$350							9	16	6

> Online subscribers can go to [CR.org/blenders](https://www.consumerreports.org/blenders) for complete up-to-date ratings.

HOW WE TEST: The Overall Score for microwaves combines results from our tests for heating and defrosting evenness, in which we reheat a dish of cold mashed potatoes and defrost a pound of ground chuck; the speed of heating water; the noise level on high

power; and ease of use. For toaster ovens, we bake muffins and pizza, check to see how well the appliances broil, evaluate them for ease of use and ease of cleaning, and put them through three separate toasting tests to determine which excel at making

light, medium, and dark toast. The Overall Score for full-sized blenders takes into account how well they make icy drinks and smoothies, and how well they purée soup and crush ice. We factor in convenience and noise levels on maximum speed. We also test for

durability, crushing ice 45 times over two days. To test food processors, we evaluate how well they chop almonds and onions, slice celery and onions, shred carrots and cheddar cheese, purée peas and carrots, and more. Prices are approximate retail.

Welcome to *'Wow!'* TV



BEHIND THE
SCENES AT
CR'S LABS

True Colors

Expert ratings from our labs cut through the marketing mumbo-jumbo you'll encounter in a showroom.



Wondering if all the fuss about 4K TVs with HDR—or high dynamic range—is warranted? We now have enough testing data to give the new technologies a thumbs-up—and to recommend the best models for every budget.

by James K. Willcox

IF YOU'RE BUYING a television for the first time in a few years, get ready for the brave new world of even higher tech TVs.

Almost all TVs—especially the bigger ones that you might want for a living room or home theater—now come with a collection of advanced features.

For one, most are now “smart,” meaning they let you stream shows from services such as Netflix without plugging in extra equipment.

They're also 4K—aka ultra-high definition, or UHD—with four times as many pixels as regular HDTVs. The extra pixels, or tiny dots that make up the picture, allow the sets to display sharper, more detailed images, especially on TVs with bigger screens.

Newest—and best of all, say our TV testers—many of today's TVs can show images with “high dynamic range,” or HDR. When done right, HDR boosts a TV's brightness, contrast, and color, making the pictures on the screen look more like real life.

But all those features and acronyms can also make buying a TV more daunting than it deserves to be. And not all of the new TVs perform equally well.

Here's what you need to know to make a good choice.

What Makes HDR So Special?

When HDR is at work, you'll see details that might not otherwise be obvious, from the texture of the brick on a shady walkway to nuances in the white clouds in a daytime sky.

You'll also see brighter, more realistic

“specular highlights,” which are glints of light, such as the sun's reflection off a car's chrome bumper or an airplane wing. With HDR, those highlights pop; without it, they wouldn't stand out against other bright objects.

HDR does all that by increasing the contrast between the brightest whites and the darkest blacks a TV can produce. That's where the “dynamic range” in the name comes from.

“When done well, HDR presents more natural illumination of image content,” says Claudio Ciacci, who heads Consumer Reports' TV testing program. “HDR can flex its dynamic-range muscles in strong sunlit scenes that push the TV's contrast to the limits,” he adds, “but you'll also see HDR's subtler benefits on more simply lit scenes.”

Typically, HDR TVs also produce more vibrant, varied colors than other sets. That's because HDR is often paired with “wide color gamut,” or WCG, capability.

Standard HDTVs can display about 17 million colors, while those with WCG can display up to a billion. That's like giving your TV a larger box of crayons to play with.

But you won't see all that fantastic contrast and color every time you turn on the TV. You have to be playing a movie or TV show that's been mastered to take advantage of HDR and WCG. Those offerings are a bit thin right now, but a lot of new content is expected later this year and in 2018. (See “What You Can Watch on Your New TV,” on page 46.)

Are All HDR TVs Created Equal?

No. Our tests show that not every TV with HDR written on the box produces equally rich, lifelike images.

First of all, TVs range all over the map when it comes to picture quality, HDR or no HDR. But there are also challenges specific to this technology.

Most notably, a TV might not be bright enough to deliver on HDR. To understand why, you need to know your “nits,” the unit used to measure brightness.

Better-performing HDR TVs typically generate at least 600 nits of peak brightness, with top performers hitting 1,000 nits or more. But many HDR TVs produce only 100 to 300 nits.

With an underpowered TV, the fire of a rocket launch becomes a single massive white flare. With a brighter television, you’d see tongues of fire and

smoke, as if you were really there.

“The benefits of HDR are often lost with mediocre displays,” Ciacchi says.

There’s one more difference between HDR sets that you may hear about. While all these TVs support a standard called HDR10, sets from some companies also work with a kind of HDR called Dolby Vision.

That format lets the TV fine-tune the brightness of each scene, rather than establish one brightness level for the whole movie. To make things more confusing, another version, called HDR10+, is coming soon that will make HDR10 more like Dolby Vision.

It’s not yet clear whether one of these will prove to be best for most consumers. But in the lab we’ve seen that top-performing TVs can do a great job with either HDR10 or Dolby Vision.

How Can I Tell a Great HDR TV From a Bad One?

Not by just looking at the box—or even how the picture looks in the store.

While some TVs carry an “Ultra HD Premium” logo, indicating they’ve been certified as high-performance sets by an industry group called the UHD Alliance, not all companies are going along. For example, LG and Samsung participate in the program; Sony and Vizio don’t.

What to do instead? Check our TV ratings, on page 49.

As you’ll see, the TVs with the best HDR tend to be the priciest. But there are good choices for people who want to spend less. And if you’re buying a smaller set, or just want to wait on 4K and HDR, there are several good—and inexpensive—options. (See “Budget-Friendly Models That Dazzle,” on page 47.)

What You Can Watch on Your New TV

You’ve got a set that rocks 4K with HDR. But which movies and TV series really take advantage of the technology?

THERE ARE NOW lots of 4K TVs with HDR chops available—but not as much to watch on those TVs. While 4K content has expanded quickly, fewer shows and movies also use HDR. Here’s a quick guide to what is available, or will be soon.



Amazon Prime

Many of Amazon’s original shows are now shot with HDR10, including “The Grand Tour” with Jeremy Clarkson. Amazon

also supports Dolby Vision, with content that includes season two of “Bosch” and movies from Sony Pictures that can be bought from Amazon Video. The company doesn’t charge extra for 4K/HDR content.

FandangoNow

This service (formerly M-Go) has a growing collection of movies in HDR10, including “Wonder Woman” and “The Fate of the Furious.” You need to buy most titles—typically for \$20 to \$30—but some can be rented.

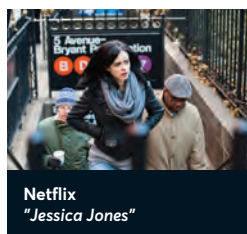
4K Ultra HD Blu-ray

If you want premium picture and sound quality, 4K Blu-ray is your

best choice. Plenty of HDR content is on the way. And you can get a good player for \$200.

YouTube

You can find a decent amount of 4K content with HDR here, mostly user-generated videos and movie trailers. Search “HDR Launch.”



Netflix

Many new Netflix original series and movies are shot in HDR. That includes Marvel titles

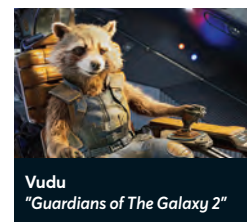
such as “The Defenders” and “Jessica Jones,” along with lots of other shows, including the macabre comedy “Santa Clarita Diet.” But to see this programming, you will need to spring for the company’s pricier \$12-per-month Netflix 4-Screen plan.

Cable and Satellite

Generally, cable services don’t yet offer 4K with HDR, but the DirecTV and Dish satellite services both have some 4K content.

Apple

Expect to see a new Apple TV with 4K HDR soon, plus HDR content available through iTunes.



Vudu

This pay-per-view service was among the first to support Dolby Vision. Recent titles include “Guardians of the Galaxy 2” and “Ghost in the Shell.” HDR10 titles are planned. You’ll typically pay about \$30 to purchase a movie with Dolby Vision, and as much as \$10 to rent one.

Get Smart About Smart TV

If you don't like how your TV streams online shows, there's an easy fix.

MOST TVs, ESPECIALLY bigger sets, are now "smart," letting you stream movies and TV shows without adding hardware. Not all are equally easy to use, but you don't need to focus too much on a TV's built-in system. Why? Because if you don't like it, you can add an Apple TV, Chromecast, Roku, or similar player later. They cost as little as \$35 and can be simpler and more versatile—in a word, smarter—than the TV's own system. Still, it is worth knowing the basics before you go shopping for a TV.

► **LG's WebOS 3.5** has an easy-to-use layout, with a row of app cards across the bottom of the home screen. You can customize the screen to highlight favorites. And its remote control lets you point-and-click, scroll, or use voice commands.

► **Samsung's Tizen** system is similar, with customizable apps at the bottom of the screen. Like LG's WebOS, it offers voice control via a microphone in the remote.

► **Sony and Vizio** sets use versions of Google's Android TV. We find Sony's platform, which requires a Google account, too complicated. But we like the voice control and search functions. Vizio's version, SmartCast, initially required you to use your own mobile device to stream, but the newest version moves some functionality to the TV and a remote.

► **Roku TV** is built into sets from Hisense, Hitachi, and TCL. We like the interface, choice of content, and search capability, but few of the sets have done well in our testing.

► **Amazon Fire TV** comes in some Element TVs, which have not done well in CR testing.

Budget-Friendly Models That Dazzle

The best HDR TVs can cost \$2,000 or more. Here are 3 options that cost less but still have good HDR—plus 3 sets for anyone looking for a really low price.

4K TVs With Good HDR—\$1,100 or Less

SAMSUNG
UN49MU800D
\$880

77 OVERALL
SCORE

Don't need a jumbo-sized TV? This 49-inch set from Samsung, found mainly in Costco warehouse clubs, has excellent HD and UHD performance, plus very good sound. We've recently seen this model for less than \$800.

LG
55UJ6540
\$600

74 OVERALL
SCORE

This 55-inch TV from LG, sold only at Walmart and Sam's Club, offers very good HD picture quality and UHD performance. It has a fairly wide viewing angle. And the excellent sound means you don't need to buy a separate sound bar.

LG
60UJ7700
\$1,100

73 OVERALL
SCORE

It's not easy finding a really big 4K TV with satisfying HDR for close to \$1,000, but that's what you get with this 60-inch set. It has very good HD picture quality and UHD performance, a fairly wide viewing angle, and very good sound.

Regular HDTVs With Great Performance—\$600 or Less*

SAMSUNG
UN50J6200
\$600

68 OVERALL
SCORE

This 50-inch Samsung set proves you can get excellent high-definition picture quality without paying a fortune. It's a smart model that offers access to several online streaming services.

SAMSUNG
UN43J5200
\$380

67 OVERALL
SCORE

If you don't want or need a huge TV, this 43-inch smart TV from Samsung delivers the goods, with excellent high-definition picture quality, plus very good sound. And we've recently seen this model for only \$400 or so.

LG
55LJ5500
\$500

66 OVERALL
SCORE

Offering a nice balance of price, performance, and screen size, this 55-inch 1080p smart TV from LG serves up very good high-definition picture quality and a wider-than-average viewing angle.

Terms You Need to Know

HDTVs These are the regular high-definition TVs many people own. They typically have a screen resolution of 1920x1080. (The numbers tell you how many pixels the screen has, horizontally and vertically.) HDTVs are also called 1080p TVs.

4K and UHD TVs These sets have four times as many

pixels as HDTVs—about 8 million rather than an HD set's 2 million. The terms 4K and ultra-high definition, or UHD, are usually used interchangeably.

HDR This acronym stands for high dynamic range. Most new, large-screen TVs have HDR. It means there's a greater range between the blackest

blacks and whitest whites they can show, compared with other TVs. Note that there are now two versions of HDR: HDR10, which works on all HDR TVs; and Dolby Vision, which is available on some TVs and fine-tunes the brightness scene by scene. And other versions, such as

HDR10+, are on the way.

WCG Wide color gamut is a capability often included with HDR. It lets TVs display more gradations of color than other TVs—a lot more.

Nits This is a measure of brightness. Top HDR TVs can get very bright, generally hitting 600 to 1,000 nits or even more.



BEHIND THE
SCENES AT
CR'S LABS

In Living Color

A CR tester uses a pattern that challenges a TV's ability to produce a range of colors.

CR Experts Put the New TV Tech to the Test

IN A SEMI-LIT room with multiple TVs lined up along the walls, a small group of black-lab-coated technicians take turns peering into what looks like an old video camera—but is actually a \$35,000 state-of-the-art meter that measures a TV's brightness and color accuracy.

That is just one of the

many tests our TV experts use to assess the performance of the newest trend in TVs: HDR, or high dynamic range.

Another tool the techs use, the circular color pattern shown above, helps them judge how well each TV can reproduce colors as the display's brightness increases.

Still more tests reveal

whether a TV can preserve the nuanced shadow gradations across the full range of a display's brightness and color capability.

But TV testing also relies on our experts' experienced eyes when they view real-world videos. "Test patterns are certainly important and revealing," says Claudio Ciacci, head of TV testing

at CR, "but you also want to watch real movies and videos to get a practical sense of how well a TV will do for normal viewing."

That means our testers spend hours in the darkened lab, watching clips from 4K Blu-ray movies shot in HDR—for example, "X-Men: Apocalypse"—just like you would at home.

How to Shop With Confidence

Tips for getting a great TV at a super price

When to Shop

You're in luck—it's just a few weeks until that bacchanal of bargains, Black Friday, one of the best times of the year to buy a TV.

We took a deep dive into TV pricing using data from the marketing firm Gap Intelligence, and found that many sets sell for as little as 50 percent of their original price during Black Friday sales.

Not ready to buy right now? You'll also find deals on 2017 sets just before the Super Bowl in early February, and then again in late February through March, when retailers will be clearing TV inventory to make way for 2018 models.

Where to Go

You've got lots of good choices—including websites.

In our most recent survey on electronics shopping by Consumer Reports readers, people using online retailers reported being more satisfied than walk-in customers with their overall experience. However, most respondents have good experiences in walk-in stores, too.

In our survey, among the retailers that sell TVs, both B&H Photo and Abt earned high marks from online and walk-in customers alike.

How to Own the Aisles

Ignore what a TV's picture looks like when it's on display in the store—special retail settings make it impossible to tell how the image will appear when you set it up at home. Instead, rely on CR's ratings.

You should also ignore the following tech terms—

when these specs are provided by the manufacturer, they're largely meaningless.

► **Viewing angle.** How well a TV maintains its picture quality when viewed from an angle is important. But almost all TVs claim they have wide viewing angles. They don't. Our ratings rely on our expert testers, who carefully view each TV from multiple angles.

► **Refresh rate.** How frequently a screen redraws the picture can affect how well it handles motion. But TV makers often provide misleading numbers. Again, our ratings are based on expert judgment of how well a set shows blur-free images during motion.

► **Contrast ratio.** Like HDR, this ratio has to do with the difference between the bright and dark parts of a display. But it's a meaningless spec, because there's no standard way to measure it.

How to Save

► **Buy cheap cables.** Expensive ones don't work better. On sites such as Amazon and Monoprice, 6-foot HDMI cables go for around \$10.

► **Skip the extended warranty.** Our recent reliability survey shows that major-brand TVs tend to be reliable. But do pay with a credit card or choose a retailer such as Costco that automatically extends a manufacturer's warranty.

► **Ask for a 30-day price-match guarantee.** Then watch for cheaper prices and, if you see one, contact the seller to refund the difference.


	Brand & Model	Overall Score	Price		Test Results			
Recommended				Screen size (in.)	HD picture quality	UHD performance	Viewing angle	Sound quality
60-INCH AND LARGER TVs								
VERY EFFECTIVE HDR								
✓	LG OLED65W7P	89	\$8,000	65	⬆	⬆	⬆	⬆
✓	LG OLED65C7P	88	\$4,000	65	⬆	⬆	⬆	⬆
✓	LG OLED65B7P	88	\$3,950	65	⬆	⬆	⬆	⬆
✓	LG OLED65G7P	87	\$6,500	65	⬆	⬆	⬆	⬆
✓	LG OLED65E7P	86	\$5,000	65	⬆	⬆	⬆	⬆
✓	Sony XBR-65X930E	82	\$3,000	65	⬆	⬆	⬆	⬆
✓	Samsung QN65Q9F	79	\$6,000	65	⬆	⬆	⬆	⬆
EFFECTIVE HDR								
✓	Sony Bravia XBR-65A1E	88	\$5,500	65	⬆	⬆	⬆	⬆
✓	LG 65SJ9500	81	\$4,000	65	⬆	⬆	⬆	⬆
✓	Samsung QN65Q7C	80	\$3,900	65	⬆	⬆	⬆	⬆
✓	Samsung QN65Q8C	80	\$4,800	65	⬆	⬆	⬆	⬆
✓	Samsung UN75MU800D	80	\$4,000	75	⬆	⬆	⬆	⬆
✓	Samsung QN65Q7F	79	\$3,600	65	⬆	⬆	⬆	⬆
\$	LG 65SJ8000	79	\$1,900	65	⬆	⬆	⬆	⬆
\$	Samsung UN65MU850D	79	\$2,380	65	⬆	⬆	⬆	⬆
\$	Samsung UN65MU8500	79	\$2,200	65	⬆	⬆	⬆	⬆
✓	Samsung UN65LS003	78	\$2,800	65	⬆	⬆	⬆	⬆
\$	Samsung UN65MU800D	78	\$2,180	65	⬆	⬆	⬆	⬆
\$	Samsung UN65MU8000	77	\$2,200	65	⬆	⬆	⬆	⬆
✓	LG 65SJ8500	77	\$2,800	65	⬆	⬆	⬆	⬆
\$	Sony XBR-65X900E	76	\$2,000	65	⬆	⬆	⬆	⬆
✓	LG 75SJ8570	76	\$3,300	75	⬆	⬆	⬆	⬆
✓	Samsung UN65MU9000	74	\$2,600	65	⬆	⬆	⬆	⬆
\$	LG 60UJ7700	73	\$1,400	60	⬆	⬆	⬆	⬆
\$	LG 65UJ7700	73	\$1,500	65	⬆	⬆	⬆	⬆
\$	Samsung UN65MU700D	72	\$1,700	65	⬆	⬆	⬆	⬆
\$	Sony XBR-65X850E	71	\$1,800	65	⬆	⬆	⬆	⬆
\$	Samsung UN65MU7000	71	\$1,500	65	⬆	⬆	⬆	⬆

Ratings ➤ **Bright Futures** TVs are organized by HDR performance within screen size categories.

	Brand & Model	Overall Score	Price		Test Results			
Recommended				Screen size (in.)	HD picture quality	UHD performance	Viewing angle	Sound quality
60-INCH AND LARGER TVs <i>Continued</i>								
	EFFECTIVE HDR							
💰	Samsung UN65MU7500	71	\$1,700	65	⬆️	⬆️	⬇️	⬇️
💰	Vizio P65-E1	67	\$1,700	65	⬆️	⬆️	⬇️	⬇️
	LG 65UJ6300	64	\$1,400	65	⬆️	⬆️	⬆️	⬇️
LIMITED HDR EFFECTIVENESS								
💰	Samsung UN65MU6300	74	\$1,400	65	⬆️	⬆️	⬇️	⬆️
💰	Samsung UN65MU650D	72	\$1,500	65	⬆️	⬆️	⬇️	⬆️
✓	Sony XBR-75X850E	71	\$3,000	75	⬆️	⬆️	⬆️	⬇️
💰	Samsung UN65MU6500	71	\$1,500	65	⬆️	⬆️	⬇️	⬇️
	Hisense 65H6D	63	\$830	65	⬆️	⬆️	⬇️	⬇️
HDR NOT EFFECTIVE								
	Vizio E80-E3	62	\$3,400	80	⬆️	⬆️	⬇️	⬇️
	Vizio E75-E3	62	\$2,000	65	⬆️	⬆️	⬇️	⬇️
	Vizio E65-E1	59	\$850	65	⬆️	⬆️	⬇️	⬇️
	Vizio E65-E0	59	\$780	65	⬆️	⬇️	⬇️	⬇️
	Philips 65PFL5602	56	\$850	65	⬆️	⬆️	⬇️	⬇️
HDR NOT SUPPORTED								
💰	Vizio D65-E0	65	\$890	65	⬆️	⬇️	⬇️	⬇️
55- TO 59-INCH TVs								
VERY EFFECTIVE HDR								
✓	LG OLED55C7P	88	\$2,800	55	⬆️	⬆️	⬆️	⬆️
✓	LG OLED55B7P	88	\$2,750	55	⬆️	⬆️	⬆️	⬆️
✓	Sony XBR-55X930E	81	\$2,000	55	⬆️	⬆️	⬇️	⬆️
✓	Samsung QN55Q7C	78	\$2,800	55	⬆️	⬆️	⬇️	⬆️
EFFECTIVE HDR								
✓	Sony Bravia XBR-55A1E	88	\$4,000	55	⬆️	⬆️	⬆️	⬆️
✓	LG OLED55E7P	86	\$4,000	55	⬆️	⬆️	⬆️	⬆️
✓	Samsung UN55MU9000	78	\$1,800	55	⬆️	⬆️	⬇️	⬆️
✓	Samsung QN55Q7F	78	\$2,600	55	⬆️	⬆️	⬇️	⬆️
✓	Samsung QN55Q8C	78	\$3,500	55	⬆️	⬆️	⬇️	⬆️

	Brand & Model		Overall Score	Price		Test Results			
Recommended					Screen size (in.)	HD picture quality	UHD performance	Viewing angle	Sound quality
55- TO 59-INCH TVs <i>Continued</i>									
	EFFECTIVE HDR								
✓	Samsung UN55MU800D	78		\$1,480	55	⬆️	⬆️	⬇️	⬆️
✓	Samsung UN55MU8500	77		\$1,500	55	⬆️	⬆️	⬇️	⬆️
✓	LG 55SJ8500	77		\$2,000	55	⬆️	⬆️	⬆️	⬆️
✓	Samsung UN55MU8000	77		\$1,500	55	⬆️	⬆️	⬇️	⬆️
✓	Sony XBR-55X900E	76		\$1,500	55	⬆️	⬆️	⬇️	⬇️
💰	LG 55UJ7700	76		\$1,000	55	⬆️	⬆️	⬆️	⬆️
💰	LG 55UJ6540	74		\$600	55	⬆️	⬆️	⬆️	⬆️
	Hisense 55H9D	62		\$900	55	⬆️	⬆️	⬇️	⬇️
	Hisense 55DU6070	62		\$400	55	⬆️	⬆️	⬇️	⬇️
	TCL 55P605	58		\$600	55	⬆️	⬆️	⬇️	⬇️
LIMITED HDR EFFECTIVENESS									
💰	Samsung UN55MU6300	74		\$800	55	⬆️	⬆️	⬇️	⬆️
💰	Samsung UN55MU6500	73		\$1,000	55	⬆️	⬆️	⬇️	⬆️
💰	Samsung UN55MU630D	73		\$800	55	⬆️	⬆️	⬇️	⬆️
💰	Samsung UN55MU7000	73		\$900	55	⬆️	⬆️	⬇️	⬆️
💰	Samsung UN55MU700D	73		\$1,100	55	⬆️	⬆️	⬇️	⬆️
💰	Samsung UN55MU7500	73		\$1,100	55	⬆️	⬆️	⬇️	⬆️
💰	Samsung UN55MU650D	70		\$1,000	55	⬆️	⬆️	⬇️	⬇️
✓	Sony XBR-55X800E	68		\$1,200	55	⬆️	⬆️	⬆️	⬇️
💰	Vizio P55-E1	67		\$1,000	55	⬆️	⬆️	⬆️	⬇️
	LG 55UJ6300	62		\$800	55	⬇️	⬆️	⬆️	⬇️
	Vizio M55-E0	62		\$700	55	⬆️	⬆️	⬇️	⬇️
	Hisense 55H6D	59		\$470	55	⬆️	⬆️	⬇️	⬇️
HDR NOT EFFECTIVE									
	LeEco Super4 X55	59		\$800	55	⬆️	⬆️	⬇️	⬇️
	Vizio E55-E2	58		\$515	55	⬆️	⬇️	⬇️	⬇️
	TCL 55S405	53		\$450	55	⬇️	⬆️	⬇️	⬇️
	TCL 55S403	52		\$420	55	⬇️	⬆️	⬇️	⬇️

	Brand & Model	Overall Score	Price		Test Results				
Recommended					Screen size (in.)	HD picture quality	UHD performance	Viewing angle	Sound quality
55- TO 59-INCH TVs <i>Continued</i>									
	HDR NOT SUPPORTED								
	Philips 55PFL5602	53	\$500	55					
	Element EL4KAMZ5517	52	\$650	55					
	RCA RTU5540	47	\$330	55					
46- TO 52-INCH TVs									
	EFFECTIVE HDR								
	Samsung UN49MU800D	77	\$880	49					
	Samsung UN49MU8000	75	\$1,200	49					
	Sony XBR-49X900E	73	\$1,200	49					
	Samsung UN49MU7500	70	\$900	49					
	LIMITED HDR EFFECTIVENESS								
	LG 49UJ7700	73	\$800	49					
	Samsung UN50MU6300	72	\$700	50					
	Samsung UN49MU650D	72	\$730	49					
	Samsung UN49MU7000	69	\$800	49					
	LG 49UJ6500	68	\$630	49					
	Sony XBR-49X800E	68	\$850	49					
	LG 49UJ6300	65	\$600	49					
	Insignia NS-50DR620NA18	61	\$400	50					
	Hisense 50H6D	60	\$400	50					
	HDR NOT EFFECTIVE								
	TCL 49S403	53	\$380	49					
	TCL 49S405	53	\$380	49					

	Brand & Model	Overall Score	Price		Test Results				
Recommended					Screen size (in.)	HD picture quality	UHD performance	Viewing angle	Sound quality
46- TO 52-INCH TVs <i>Continued</i>									
	HDR NOT SUPPORTED								
	Vizio E50x-E1	58	\$525	50					
	Vizio D50-E1	56	\$500	50					
	Element E4SFC5017	51	\$400	50					
	RCA RTU4921	45	\$280	49					
39- TO 43-INCH TVs									
	EFFECTIVE HDR								
	Sony XBR-43X800E	68	\$750	43					
	LIMITED HDR EFFECTIVENESS								
	Samsung UN43MU6300	74	\$600	43					
	Samsung UN40MU6300	71	\$550	40					
	Samsung UN43MU630D	70	\$500	43					
	Samsung UN40MU7000	70	\$700	40					
	LG 43UJ6300	63	\$500	43					
	Hisense 43H6D	61	\$350	43					
	HDR NOT EFFECTIVE								
	TCL 43S405	53	\$400	43					
	Philips 43PFL5602	52	\$380	43					
	HDR NOT SUPPORTED								
	Vizio D43-E2	59	\$420	43					
	Online subscribers can go to CR.org/TVs for complete up-to-date ratings.								

HOW WE TEST: The Overall Score is based on HD picture quality, UHD performance, sound quality, viewing angle, motion-blur performance, ease of use, versatility, and power consumption. The displayed score is out of a total of 100 points.

HD picture quality is based on objective tests and subjective evaluations by expert testers after a TV is adjusted using standard picture controls to achieve the highest-fidelity image possible. Tested image attributes include detail color accuracy, and contrast using signals from a Blu-ray

player, a cable box, and professional broadcast equipment and meters.

Ultra HD performance ratings represents a composite of observations related to the TV's ability to reproduce full UHD image detail when presented with 4K content. For those with HDR capability, it includes the effectiveness of this feature's performance, how well a TV can upconvert HD source material to the TV's higher native UHD resolution, and whether it's capable of playing 4K UHD content from its HDMI input, streaming online video, or a file

stored on a USB flash drive.

Viewing angle is an evaluation of picture quality for clarity and color accuracy at various horizontal and vertical viewing angles. Excellent means unlimited, Very Good means wide, Good equals moderate, Fair means narrow, and Poor indicates very narrow.

The motion blur score is an evaluation of how well the TV can present a blur-free image during motion scenes. TVs with a native 120Hz frame rate generally perform better than 60Hz sets. But if the blur-reduction feature

also invokes a "smooth motion" effect, the feature is turned off for our test.

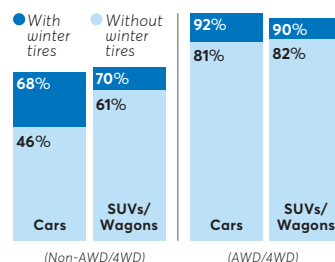
Sound quality is measured from the set's built-in speakers using audio test equipment with additional subjective testing by a listening panel. We listen for overall clarity of sound, depth of bass, effective volume level, and audible distortion for dialog, music, and movie soundtrack content.

Energy cost is evaluated after the TV is optimized for best picture quality, not using any energy-saving modes or technology included in the set.

Road Report

Ratings from our test track plus expert car advice

Percentage of vehicles rated Very Good in snow driving



Winter Driving: Your Survival Guide

We rate the best and worst tires for all vehicles and steer you to the best retailers. Plus, heed our expert driving tips for icy roads, and check out cold-weather upgrades worth springing for.

by **Mike Monticello**

Slippery Slopes
The right car choice and tire type can make the difference between a sketchy drive and a secure one.

IT HAS BEEN 40 YEARS since Goodyear introduced the very first all-season tire with its Tiempo line. Before the launch of all-seasons, mainstream tires were designed for most wet and dry conditions, but if you wanted to travel on snow and icy roads, you'd need something more aggressive: either snow tires or chains wrapped around your daily tires to provide winter traction.

These days most vehicles are outfitted with all-season tires from the factory. All-season tires feature extra slits (called sipes) and a tread designed to give them better gripping ability on snow and ice. They can handle most weather situations, but they don't deliver the best performance when conditions get really bad. That's because no one tire can perform perfectly in every situation.

"Even though all-season tires offer good traction in most weather conditions, they are a compromise," says Gene Petersen, CR tire program manager. "They neither perform as well in the dry and wet as summer tires nor give as much traction in snow as winter/snow tires." Consumer Reports' tests show that when roads get nasty, winter/snow tires easily outperform most all-season tires.

Winter/snow tires tend to have a deeper tread to grip snow, plus rubber compounds designed to remain pliable in the cold.

If you regularly drive on snow-covered roads or if you have to be at work regardless of the weather conditions, we recommend getting four winter/snow tires for balanced traction and handling. On the other hand, if you rarely get snow—or if it's gone quickly—stick with all-seasons, preferably a set that is rated highly for snow traction and ice braking. (See our ratings, on page 56.)

Expert Tips for the Safest Trips

Patience, preparation, and anticipation will help keep you safe in snow and ice.

DRIVING IN WINTER will test even the most attentive, skillful driver. Heavy snowfall can reduce visibility, and slippery road conditions can send your car sliding off in unexpected directions with no notice. CR's engineers routinely test tires and vehicles in snowy, icy conditions. These tips from our track experts can help you make it to spring unscathed.

Clear the snow and ice off your vehicle's hood, roof, and windows before you drive.

Be sure to use a brush with soft bristles, so you don't scratch the car's paint. "Your visibility will improve dramatically, and other drivers won't have to dodge clumps of snow or ice that can become airborne as you speed down the highway," says Jake Fisher, director of auto testing at CR. Plus, ignoring your car's snow load could cost you. Several states, including Connecticut and New Jersey, can fine you if you don't clear the snow off before driving. Don't forget to check your headlamps and taillights; they could be covered in snow, ice, or road salt.

Smooth out your driving style. On slippery roads, tires lose their grip more easily.

"The key is to drive as smoothly as possible, avoiding sudden actions or rapid movements of any kind," says Gene Petersen, program manager for tires at Consumer Reports. "Drive as if you have a full cup of coffee on the dashboard and don't want to spill any."

Steer into a slide.

When your car's rear begins to slide during a turn, gently let up on the accelerator and turn the steering wheel in the direction that the car is sliding. This will help straighten it out. If your car is sliding straight ahead when you're trying to make a turn, your initial reaction might be to keep turning the wheel. That could hurt more than help. Instead, lift gently off either the accelerator or the brake and straighten the wheel—which gives your tires a chance to regain grip.

All-wheel drive isn't all-wheel stop.

"Despite what many drivers think, vehicles with four- or all-wheel drive can slide on slick surfaces," says Shawn Sinclair, automotive engineer at CR.

"Four-wheel-drive and AWD systems provide extra traction only when accelerating. They provide no advantage when braking."

Don't pass the snow plows.

"Let the trucks do their job," says John Ibbotson, chief mechanic at Consumer Reports. "The road is likely more treacherous in front of those trucks, and you run the risk of sliding as you accelerate to pass them. Don't follow too closely—you might wind up with a cracked windshield from flying pebbles."

Use winter-grade windshield cleaner.

It is specially formulated to stay fluid, even in the coldest weather. Slick roads are often treated with a salty solution, salt crystals, and/or sand to provide traction. This "wintry mix" can really hurt your visibility when it's splashed onto your windshield, especially when you're driving into the sun. Keep an extra bottle of wiper fluid in the trunk in case you run out at an inconvenient moment.

7 Car Features That Take the Sting Out of Winter Driving

MORE CARS ARE OFFERING winter-friendly features than ever before. Though some of these are rare, others are showing up even in less expensive models. Often, several of these features are bundled in a cold-weather package, so they can be difficult to order à la carte. Some of them are just for convenience, but many will keep you safer, too.

Remote start. Like a remote control for your car, these devices let you start your car's engine from inside your home or office to warm up the cabin in advance. Certain newer vehicles, including Mercedes-Benz and Volvo models, can remote start via smartphone.

Heated seats. Seating surfaces can warm you faster than your car's heater can warm the cabin air. Certain luxury cars, such as the BMW 5 and 7 Series and Mercedes-Benz S- and E-Class, have heated armrests and door trims as well. A few years ago you had to spring for leather upholstery to get heated seats, but many automakers, such as Hyundai, Jeep, and Subaru, now offer

the option with cloth upholstery.

Heated steering wheel. An electric heating element runs along the outside of the wheel to warm it, giving drivers a comfortable, mitten-free grip. Some wheels—in select BMW, Fiat Chrysler, and Volkswagen models—can be set to turn on when the temperature drops below a set point.

Heated side mirrors. Heating elements like the ones used to defrost your back window can clear ice and frost from mirrors without the need for scraping.

Windshield wiper de-icers and washer jets. Ice and slush can cake up

in your wiper blades and block your washer jets, so some cars have electric heating elements underneath the resting position of wiper blades and in the jets to melt icy obstructions away. Some luxury vehicles from carmakers such as Audi, BMW, Mercedes-Benz, Porsche, and Volvo also have washer jets for the headlights to keep them clear—and you safer. That will get the grime off the headlights, but if they're caked in snow or ice, you should clear your headlights off before driving.

Heated windshield. These are still rare (seen on certain Jaguar, Land Rover, and Volvo models), but they can make clearing ice easier. One downside: The heating elements are made up of wavy lines across the windshield that can be distracting. Plus, we've found that these elements can block the signal of toll transponders such as E-ZPass.

Snow-friendly 'beam' windshield wipers. These one-piece wiper blades have spring steel incorporated into the rubber. As a result, they can provide a more uniform pressure on windshields and a better wiping performance. But our testing has shown that cheap beam replacements can hurt performance. Good ones cost \$20 to \$60 for a pair at Amazon.com; a pair of conventional wipers can cost \$15 to \$50.



Get a Grip
The blocky tread pattern helps winter/snow tires bite into snow.

Know Your Snow

No single tire handles every type of winter weather. Here's how each type deals with snow, slush, and everything in between.

Deep, packed snow.

This is where winter/snow tires shine. They're engineered to provide optimum traction here, with rubber that stays soft and pliable in bitter temperatures (which improves grip). These tires also have slits that act as biting edges to help maintain control.

Slick, icy roads. Stud-able and studless winter/snow tires work well here. Stud-able ones have holes in the tread to hold metal studs; the studs claw the ice, improving grip. Studless tires have rubber that has been formulated to enhance grip on snow and ice, and therefore don't need studs. They work like a squeegee

on ice; you can actually hear that sound when you stop.

Melted snow and dry pavement. In these conditions winter/snow tires generally do not grip as well as all-season tires, and their tread wears faster. You'll want to swap them for your regular tires when spring rolls around.

Is All-Wheel Drive All You Need—or Not?

IT'S GENERALLY BETTER to have four wheels pulling your car forward than just two when conditions are slippery. Vehicles with all- and four-wheel-drive systems feed power to each tire to provide maximum traction when you're going forward. But these systems aren't foolproof—they do nothing to improve braking on slick surfaces. If you're shopping for a

new car and live in an area where roadways are regularly covered with ice or snow, consider these top-ranked models from our 2016 Annual Auto Survey. We asked subscribers to rate their vehicle's performance in snowy conditions. The results, based on 36,000 vehicles between model years 2013 and 2016, show that some AWD and 4WD models are

better than others. All respondents had driven their vehicles without changing to winter/snow tires and had faced at least six snowy days during the winter of 2015 to 2016. The rankings are based on the percentage of vehicles that were rated Very Good in snow performance. Winter tires will make these cars and SUVs perform even better.

Best SUVs and Wagons in Snow

Subaru Outback
Subaru Forester
Chevrolet Suburban/GMC Yukon XL
Subaru Crosstrek
Toyota 4Runner
Jeep Grand Cherokee
Buick Enclave
Volvo XC60
Chevrolet Tahoe/GMC Yukon
Jeep Wrangler

Best Cars in Snow

Audi A4
Subaru Legacy
Audi A6
Mercedes-Benz C-Class
Mercedes-Benz E-Class

Worst Vehicles Overall in Snow*

Ford Focus
Hyundai Elantra
Kia Optima
Chevrolet Volt
Ford C-Max

The Care and Feeding of Your Winter Tires

Spare wheels. If you live in a snowy climate, it's prudent to buy a set of steel wheels for your dedicated winter/snow tires. Although there is some initial cost, you can usually get at least two to three seasons of use out of your winter tires. Then the same wheels can be used again for a new set of tires. Steel wheels generally cost \$50 to \$75 apiece, but if they aren't available for your model, you'll be forced to buy more expensive aluminum wheels.

Tire-pressure monitors. These have been standard equipment on all new cars since the 2008 model year. Many systems use a sensor in each wheel to communicate with an onboard computer via radio frequency. We recommend installing these sensors on your replacement wheels if your car came with the system. The sensors vary in cost, but expect to pay around \$30 per wheel.

Storage. Store the wheels and tires inside, out of direct sunlight, to maintain their longevity.

Don't Leave Home Without These

Emergencies on the road can be extra-dangerous and stressful in frigid weather. Here's what to include in your wintertime car safety kit.

Cell phone.

Also pack a car charger because areas with weak reception can kill your battery quickly.

First-aid kit.

Many new cars have one; if your car doesn't, make your own with bandages, gauze pads, medical tape, and antiseptic wipes.

Warning light, hazard triangle, or flares.

Make sure that flares are kept dry and out of the reach of children and that they have not expired.

Water and foods with a long shelf life.

Think granola and protein bars, which can last through the winter months.

Tire jack and lug wrench, tire sealant, or portable compressor.

Whether you have a spare or not (many new cars don't), know how to fix or change a flat before it happens.

Flashlight.

Check it monthly to make sure it's still working, and pack an extra set of batteries.

Tubes of sand. You can find these at hardware stores in the winter. Spread the sand around your tires for extra grip if you are stuck in the snow.

Jumper cables or a portable battery booster.

Make sure to top off and check the charge on battery booster packs every so often.

Foil-lined safety blanket and extra layers of clothing. The blanket's foil helps reflect body heat, keeping you warmer. Also pack winter boots and socks.

Make sure your kit is safely secured in your vehicle. Store it in the trunk, or pack it safely in the very back of an SUV.

All-Season and All-Terrain

All-season truck tires handle most conditions, including wet and dry pavement and light snow, reasonably well. All-terrain tires have a more aggressive tread pattern for better off-road grip, but the emphasis is still on on-road use. Crossover SUV tires deliver the ride comfort, quietness, and long tread life of a car all-season tire, but in the sizes to fit the wheels used on SUVs.

		Brand & Model	Overall Score	Price	Three-Season Driving				Winter Driving		Comfort		Ownership Factors	
Recommended	Rank				Dry braking	Wet braking	Handling	Hydroplaning	Snow traction	Ice braking	Ride	Noise	Rolling resistance	Tread life (miles)
		ALL-SEASON TRUCK TIRES												
✓	1	Continental CrossContact LX20 EcoPlus	<div><div>74</div></div>	\$153	↑	↓	↓	↑	↑	↓	↑	↑	↑	65,000
✓	2	Michelin Premier LTX	<div><div>74</div></div>	\$181	↑	↓	↓	↑	↓	↑	↓	↑	↑	40,000
✓	3	Firestone Destination LE 2	<div><div>72</div></div>	\$148	↓	↓	↓	↑	↑	↑	↓	↑	↑	65,000
✓	4	Pirelli Scorpion Verde All Season Plus	<div><div>72</div></div>	\$177	↑	↓	↓	↑	↑	↓	↓	↑	↑	65,000
✓	5	Michelin Defender LTX M/S	<div><div>72</div></div>	\$170	↓	↓	↓	↑	↑	↑	↓	↑	↑	85,000
	6	Cooper Discoverer SRX	<div><div>70</div></div>	\$163	↓	↓	↓	↑	↑	↓	↑	↑	↑	55,000
	7	General Grabber HTS60	<div><div>70</div></div>	\$136	↑	↓	↓	↑	↓	↓	↑	↑	↓	65,000
	8	Kumho Crugen HT51	<div><div>68</div></div>	\$107	↓	↓	↓	↑	↑	↑	↓	↑	↑	60,000
	9	Hankook Dynapro HT	<div><div>68</div></div>	\$127	↓	↓	↓	↑	↓	↑	↓	↑	↑	70,000
	10	Nexen Roadian HTX RH5	<div><div>68</div></div>	\$122	↑	↓	↓	↑	↓	↓	↓	↑	↑	70,000
	11	Laufenn X Fit HT	<div><div>68</div></div>	\$120	↑	↓	↓	↑	↓	↑	↑	↑	↑	70,000
	12	Bridgestone Dueler LTH	<div><div>66</div></div>	\$175	↓	↓	↓	↑	↓	↓	↓	↑	↓	75,000
	13	Nokian WR G3 SUV	<div><div>66</div></div>	\$124	↓	↓	↓	↑	↑	↑	↓	↓	↑	55,000
	14	Bridgestone Dueler H/L Alenza Plus	<div><div>66</div></div>	\$160	↓	↓	↓	↑	↓	↓	↓	↑	↑	65,000
	15	GT Radial Savero HT2	<div><div>66</div></div>	\$105	↑	↓	↓	↑	↓	↓	↓	↑	↑	65,000
	16	Uniroyal Laredo Cross Country Tour	<div><div>64</div></div>	\$115	↓	↓	↓	↑	↑	↑	↓	↑	↓	65,000
	17	Maxxis 770 Bravo H/T	<div><div>64</div></div>	\$143	↑	↓	↓	↑	↓	↓	↓	↑	↑	60,000
	18	Falken WildPeak H/T HT01	<div><div>64</div></div>	\$129	↑	↓	↓	↑	↓	↓	↓	↑	↑	80,000
	19	Yokohama Geolandar H/T G056	<div><div>64</div></div>	\$125	↑	↓	↓	↑	↓	↓	↓	↑	↓	70,000
	20	Nitto Dura Grappler Highway Terrain	<div><div>62</div></div>	\$135	↓	↓	↓	↑	↓	↓	↓	↑	↓	70,000
	21	Fuzion SUV	<div><div>62</div></div>	\$117	↑	↓	↓	↑	↓	↓	↓	↑	↑	70,000
	22	Sumitomo Encounter HT	<div><div>62</div></div>	\$121	↓	↓	↓	↑	↓	↑	↓	↑	↓	75,000
	23	Toyo Open Country H/T	<div><div>56</div></div>	\$147	↓	↓	↓	↑	↓	↓	↓	↑	↓	65,000

Recommended	Rank	Brand & Model	Overall Score	Price	Three-Season Driving				Winter Driving		Comfort		Ownership Factors	
					Dry braking	Wet braking	Handling	Hydroplaning	Snow traction	Ice braking	Ride	Noise	Rolling resistance	Tread life (miles)

ALL-TERRAIN TRUCK TIRES

	1	Continental TerrainContact A/T	72	\$159										65,000
	2	Michelin LTX A/T 2	72	\$199										85,000
	3	Goodyear Wrangler TrailRunner AT	68	\$157										50,000
	4	Yokohama Geolandar A/T G015	68	\$128										60,000
	5	Nexen Roadian AT Pro RA8	68	\$124										75,000
	6	Falken WildPeak A/T AT3W	68	\$126										70,000
	7	Nokian Rotiiva AT	66	\$133										60,000
	8	Laufenn X Fit AT	66	\$126										75,000
	9	Hankook Dynapro AT-M	66	\$139										85,000
	10	Pirelli Scorpion ATR	66	\$159										60,000
	11	Cooper Discoverer A/T3	64	\$124										60,000
	12	Cooper Discoverer A/TW	64	\$136										55,000
	13	Firestone Destination A/T	64	\$147										55,000
	14	Toyo Open Country A/T II	62	\$144										75,000
	15	GT Radial Adventuro AT3	62	\$118										55,000
	16	Maxxis 771 Bravo A/T	60	\$141										65,000
	17	Kumho Road Venture AT51	58	\$126										45,000

ALL-SEASON CROSSOVER/SUV TIRES

	1	Goodyear Assurance CS Fuel Max	70	\$133										40,000
	2	Kumho Crugen Premium	68	\$101										60,000
	3	Bridgestone Dueler H/L 422 Ecopia	68	\$139										65,000
	4	Sumitomo HTR Enhance C/X	68	\$89										60,000
	5	Hankook Dynapro HP2	66	\$116										75,000
	6	Nitto NT 421Q	66	\$124										65,000
	7	Toyo Open Country Q/T	66	\$127										65,000
	8	Yokohama Geolandar G055	64	\$119										75,000
	9	Toyo Celsius CUV	64	\$121										75,000

All-Season

These are designed to handle most conditions—including wet and dry pavement and light snow—reasonably well. They're designed for a comfortable and quiet ride, predictable handling, and long wear. That makes them a sound choice for most drivers, except where winters are severe. Performance and ultra-high-performance versions provide additional grip in high-speed turning maneuvers and are available in the larger sizes often found on sports cars.

Recommended	Rank	Brand & Model	Overall Score	Price	Three-Season Driving				Winter Driving		Comfort		Ownership Factors	
					Dry braking	Wet braking	Handling	Hydroplaning	Snow traction	Ice braking	Ride	Noise	Rolling resistance	Tread life (miles)

ALL-SEASON CAR TIRES

✓	1	Michelin Defender	70	\$120	↑	↓	↑	↑	↑	↓	↓	↑	↑	90,000
✓	2	Continental TrueContact	68	\$106	↑	↓	↑	↑	↑	↓	↑	↑	↑	60,000
✓	3	General Altimax RT43	66	\$90	↑	↓	↓	↑	↑	↓	↑	↑	↑	65,000
✓	4	Pirelli P4 Four Seasons Plus	66	\$100	↑	↓	↓	↑	↑	↓	↑	↑	↑	100,000
	5	Nexen Aria AH7	64	\$119	↑	↓	↓	↓	↑	↓	↓	↑	↑	75,000
	6	Goodyear Assurance TripleTred All-Season	62	\$121	↑	↓	↑	↑	↓	↓	↓	↑	↓	80,000
	7	Kumho Solus TA11	62	\$108	↑	↓	↓	↑	↑	↓	↓	↑	↑	55,000
	8	Cooper CS5 Grand Touring	62	\$91	↑	↓	↓	↑	↑	↓	↑	↑	↑	70,000

PERFORMANCE ALL-SEASON H-SPEED-RATED CAR TIRES

✓	1	Continental PureContact	70	\$112	↑	↑	↑	↑	↑	↓	↑	↑	↑	55,000
✓	2	Pirelli Cinturato P7 All Season Plus	70	\$105	↑	↓	↓	↑	↑	↓	↑	↑	↑	70,000
✓	3	Michelin Premier A/S	70	\$135	↑	↑	↓	↑	↑	↓	↑	↑	↑	85,000
	4	Goodyear Assurance Fuel Max	68	\$97	↑	↑	↑	↑	↓	↓	↓	↑	↑	60,000
	5	General Altimax RT43	68	\$91	↑	↓	↑	↑	↓	↓	↑	↑	↑	65,000
	6	Nokian Entyre 2.0	68	\$139	↑	↑	↑	↑	↓	↓	↑	↑	↑	35,000
	7	Nexen N5000 Plus	66	\$131	↑	↓	↑	↑	↑	↓	↑	↑	↑	75,000
	8	Cooper CS5 Ultra Touring	64	\$89	↑	↓	↑	↑	↓	↓	↑	↑	↓	60,000
	9	Dunlop SP Sport 7000 A/S	64	\$105	↑	↓	↓	↑	↓	↓	↓	↑	↓	65,000
	10	Kumho Solus TA31	64	\$115	↑	↓	↑	↑	↓	↓	↓	↓	↑	55,000

PERFORMANCE ALL-SEASON, V-SPEED-RATED CAR TIRES

✓	1	Continental PureContact	70	\$111	↑	↑	↑	↑	↑	↓	↑	↑	↑	55,000
✓	2	Michelin Premier A/S	70	\$140	↑	↑	↑	↑	↑	↓	↑	↑	↓	80,000
✓	3	Pirelli Cinturato P7 All Season Plus	70	\$109	↑	↓	↓	↑	↑	↓	↑	↑	↑	65,000

		Brand & Model	Overall Score	Price	Three-Season Driving				Winter Driving		Comfort		Ownership Factors	
Recommended	Rank				Dry braking	Wet braking	Handling	Hydroplaning	Snow traction	Ice braking	Ride	Noise	Rolling resistance	Tread life (miles)

PERFORMANCE ALL-SEASON, V-SPEED-RATED CAR TIRES *Continued*

	4	General Altimax RT43	68	\$93	↑	↓	↑	↑	↓	↓	↑	↑	↑	55,000
	5	Goodyear Eagle Sport All-Season	64	\$115	↑	↓	↑	↑	↓	↓	↓	↓	↑	70,000
	6	Goodyear Assurance ComforTred Touring	62	\$117	↑	↓	↓	↑	↑	↓	↑	↑	↑	75,000
	7	Yokohama Avid Ascend	62	\$97	↑	↓	↓	↑	↓	↓	↑	↑	↓	85,000

ULTRA-HIGH-PERFORMANCE ALL-SEASON CAR TIRES

✓	1	Michelin Pilot Sport A/S 3+	78	\$152	↑	↑	↑	↑	↓	↓	↓	↑	↓	55,000
✓	2	Pirelli P Zero All Season Plus	76	\$126	↑	↑	↑	↑	↓	↓	↓	↑	↓	50,000
✓	3	Continental ExtremeContact DWS06	76	\$141	↑	↑	↑	↑	↓	↓	↓	↑	↓	45,000
✓	4	BFGoodrich g-Force Comp-2 A/S	74	\$116	↑	↑	↑	↑	↑	↑	↓	↓	↓	60,000
	5	Goodyear Eagle Sport All-Season	72	\$144	↑	↓	↑	↑	↓	↓	↓	↑	↓	70,000
	6	Yokohama Advan Sport A/S	72	\$118	↑	↑	↑	↑	↓	↓	↓	↑	↓	60,000
	7	Goodyear Eagle F1 Asymmetric All-Season	72	\$147	↑	↑	↑	↑	↓	↓	↓	↓	↓	50,000
	8	Hankook Ventus S1 noble 2	72	\$128	↑	↓	↑	↑	↓	↓	↓	↑	↑	45,000
	9	Dunlop Signature HP	72	\$122	↑	↑	↑	↑	↓	↓	↓	↓	↓	40,000
	10	General G-Max AS-03	70	\$111	↑	↓	↑	↑	↓	↓	↓	↓	↓	50,000
	11	Falken Azenis FK450 A/S	68	\$129	↑	↑	↑	↑	↓	↓	↓	↑	↓	40,000
	12	Kumho Ecsta 4X II	68	\$131	↑	↑	↑	↑	↓	↓	↓	↓	↓	40,000
	13	Cooper Zeon RS-3G1	68	\$140	↑	↑	↑	↑	↓	↓	↓	↑	↓	35,000
	14	Bridgestone Potenza RE970 AS Pole Position	68	\$144	↑	↑	↑	↑	↓	↓	↓	↑	↓	45,000
	15	Laufenn S Fit AS	68	\$84	↑	↓	↑	↑	↓	↓	↓	↑	↓	60,000
	16	Nitto Motivo	66	\$112	↑	↓	↑	↑	↓	↓	↓	↑	↓	50,000
	17	Fuzion UHP Sport A/S	64	\$79	↑	↓	↑	↑	↓	↓	↓	↑	↓	55,000
	18	Toyo Proxes 4 Plus	62	\$127	↑	↓	↑	↑	↓	↓	↓	↑	↓	50,000

HOW WE TEST: Overall Score is based on more than a dozen tests, with braking, handling, and hydroplaning resistance more heavily weighted for all but winter/snow tires. Braking tests on ice are from 10 mph; on dry and wet pavement, from 60 mph. Handling is based on some combination of

how well a tire did in wet and dry cornering grip, steering feel, an emergency handling maneuver, and performance on our wet handling circuit, depending on the type of tire. Hydroplaning denotes a tire's ability to resist skimming along the surface of standing water. Snow traction tests

denote how far a vehicle has to travel to accelerate from 5 to 20 mph on flat, moderately packed snow. Ride comfort and noise are evaluated subjectively, on rough and smooth roads. Rolling resistance, as measured on a dynamometer, is a factor in fuel economy. Tread life indicates

wear potential from our 16,000- or 20,000-mile mixed-vehicle driving test. Recommended notes high-scoring tires and tires that typically reflect well-rounded performance. Price is what we paid per tire. For more on tires, go to [CR.org/tires](https://www.consumerreports.org/tires).

Winter/Snow

Distinguished by a three-peak mountain snowflake symbol on the sidewall, these are designed for maximum grip on snowy and icy roads. Their deep tread and many slits act as biting edges, and the softer tread compound stays pliable in cold temperatures. They have potentially shorter tread life and some reduced grip on cleared roads. Performance winter/snow tires come in larger sizes to fit sports cars.

		Brand & Model	Overall Score	Price	Three-Season Driving				Winter Driving		Comfort		
Recommended	Rank				Dry braking	Wet braking	Handling	Hydroplaning	Snow traction	Ice braking	Ride	Noise	Rolling resistance

WINTER/SNOW CAR TIRES

✓	1	Michelin X-Ice XI3	70	\$117	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	2	Nokian Hakkapeliitta R2	70	\$135	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	3	Bridgestone Blizzak WS80	66	\$112	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	Cooper Weather-Master WSC	64	\$92	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	Toyo Observe G3-ICE	64	\$173	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	6	Continental WinterContact SI	64	\$136	✓	✓	✓	✓	✓	✓	✓	✓	✓
	7	General Altimax Arctic	64	\$90	✓	✓	✓	✓	✓	✓	✓	✓	✓
	8	Dunlop Winter Maxx	64	\$103	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	9	Nokian WR G3	64	\$116	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	10	Toyo Celsius	64	\$108	✓	✓	✓	✓	✓	✓	✓	✓	✓
	11	Vredestein WinTrac Xtreme S	62	\$149	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12	Hankook Winter i*Pike RS	62	\$120	✓	✓	✓	✓	✓	✓	✓	✓	✓

PERFORMANCE WINTER/SNOW CAR TIRES

✓	1	Yokohama W.drive V905	70	\$180	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	2	Michelin Pilot Alpin PA4	66	\$200	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3	Bridgestone Blizzak LM-32	62	\$190	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	Hankook Winter i*Cept Evo2	62	\$156	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	Falken Espia EZP II	50	\$109	✓	✓	✓	✓	✓	✓	✓	✓	✓

WINTER/SNOW TRUCK TIRES

✓	1	Michelin Latitude X-Ice XI2	74	\$181	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	2	Nokian Hakkapeliitta R2 SUV	68	\$166	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	3	Bridgestone Blizzak DM-V2	68	\$141	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	General Grabber Arctic	66	\$111	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	Dunlop Winter Maxx SJ8	66	\$161	✓	✓	✓	✓	✓	✓	✓	✓	✓
	6	Yokohama IceGuard iG51v	66	\$132	✓	✓	✓	✓	✓	✓	✓	✓	✓
	7	Nexen WinGuard WinSpike	62	\$122	✓	✓	✓	✓	✓	✓	✓	✓	✓
	8	Goodyear Ultra Grip Ice WRT SUV	62	\$169	✓	✓	✓	✓	✓	✓	✓	✓	✓
	9	Toyo Observe GSi-5	60	\$122	✓	✓	✓	✓	✓	✓	✓	✓	✓
	10	Hankook i*Pike RW11	56	\$132	✓	✓	✓	✓	✓	✓	✓	✓	✓
	11	Firestone Winterforce UV	56	\$110	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12	Cooper Discoverer M+S	54	\$117	✓	✓	✓	✓	✓	✓	✓	✓	✓

Ratings ➤ **The Most (and Least) Satisfying Tire Retailers** Choosing a tire is just part of the replacement process. Our survey of almost 50,000 subscribers shows that where you buy matters.



	Retailer	Reader Score	Median Price	Survey Results								
				Price paid	Selection	Sales service	Free perks	Quality of installation	Time for installation	Waiting area	Checkout ease	Returns and exchanges
1	Costco Wholesale	90	\$166	⬆	⬇	⬆	⬆	⬆	⬇	⬇	⬆	⬆
2	Tirerack.com	90	\$177	⬆	⬆	—	—	—	—	—	⬆	⬆
3	Les Schwab Tire Centers	90	\$187	⬇	⬇	⬆	⬆	⬆	⬆	⬆	⬆	⬆
4	Discount Tire	90	\$173	⬆	⬆	⬆	⬇	⬆	⬆	⬆	⬆	⬆
5	Independent Retailers	90	\$167	⬆	⬆	⬆	⬇	⬆	⬆	⬇	⬆	⬆
6	Fountain Tire	89	—	⬇	⬇	⬆	⬇	⬆	⬆	⬆	⬆	—
7	Amazon.com	89	\$124	⬆	⬆	—	—	—	—	—	⬆	—
8	Tire Barn	89	\$183	⬇	⬆	⬆	⬆	⬆	⬇	⬇	⬆	—
9	Tirebuyer.com	88	\$147	⬆	⬆	—	—	—	—	—	⬆	—
10	Belle Tire Distributors	88	\$168	⬇	⬆	⬆	⬆	⬆	⬇	⬆	⬆	⬇
11	BJ's Wholesale Club	88	\$154	⬆	⬇	⬇	⬆	⬆	⬇	⬇	⬆	⬇
12	Kal Tire	88	\$259	⬇	⬆	⬆	⬇	⬆	⬇	⬆	⬆	⬇
13	Kauffman Tire	87	\$166	⬆	⬆	⬆	⬇	⬆	⬇	⬆	⬆	—
14	Dunn Tire	87	\$155	⬇	⬆	⬆	⬆	⬆	⬇	⬆	⬆	—
15	Sullivan Tire	86	\$179	⬇	⬆	⬆	⬇	⬆	⬇	⬆	⬆	—
16	Sam's Club	86	\$148	⬆	⬇	⬇	⬇	⬆	⬇	⬇	⬆	⬆
17	Just Tires	86	—	⬇	⬇	⬆	⬇	⬆	⬇	⬇	⬆	—
18	Car Dealerships	86	\$194	⬇	⬇	⬆	⬇	⬆	⬇	⬆	⬆	⬆
19	Big O Tires	86	\$168	⬇	⬇	⬆	⬆	⬆	⬇	⬇	⬆	⬇
20	Tire Discounters	85	\$183	⬇	⬆	⬆	⬆	⬆	⬇	⬆	⬆	—
21	Goodyear Auto Service	85	\$166	⬇	⬇	⬆	⬇	⬆	⬇	⬇	⬆	⬇
22	Firestone Complete Auto Care	84	\$152	⬇	⬇	⬆	⬇	⬆	⬇	⬆	⬆	⬇
23	Tire Warehouse	84	\$161	⬆	⬆	⬆	⬇	⬆	⬇	⬇	⬆	—
24	Tires Plus	83	\$158	⬇	⬇	⬆	⬇	⬆	⬇	⬇	⬆	⬇
25	Town Fair Tire Centers	82	\$171	⬇	⬆	⬇	⬆	⬆	⬇	⬇	⬆	⬇
26	Monro Muffler Brake	82	—	⬇	—	⬆	—	⬆	⬇	⬇	⬆	—
27	American Tire Depot	82	—	⬇	⬆	⬇	⬇	⬇	⬇	⬇	⬆	—
28	Mr. Tire	81	\$175	⬇	⬇	⬇	⬆	⬇	⬇	⬇	⬆	—
29	Walmart	81	\$118	⬆	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
30	Merchant's	81	—	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	—
31	Sears	80	\$164	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
32	NTB	80	\$162	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
33	Pep Boys	80	\$145	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
34	Tire Kingdom	79	\$172	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬆	—
35	Mavis Discount Tire	78	\$159	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇

HOW WE SURVEY: Ratings are based on the feedback of 48,525 Consumer Reports subscribers reporting on 50,125 tire-buying experiences in 2016. Reader Score reflects overall satisfaction with the tire purchase and

installation experience. For online-only retailers, Reader Score represents an average of consumers' satisfaction with their tire purchase from these retailers and their satisfaction with the installation process performed by

separate walk-in retailers. Differences of fewer than 5 points are not meaningful. Median Price reflects the amount paid for each tire, including installation and balancing fees, when purchasing four tires, controlling for

car type. A dash (—) indicates that a sample size was too small to calculate an accurate rating or a rating was not applicable to a particular retailer. For more on tires, go to [CR.org/tires](https://www.consumerreports.org/tires).

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.



Overpromised, Underdelivered

*The **Jaguar XE** is fun to drive but trails its competitors when it comes to luxury and refinement.*

IT'S NOT EASY to take on the small-sports-sedan masters—the BMW 3 Series and Audi A4—but the new XE makes an admirable attempt with mixed results. The XE has sporty and athletic handling characteristics, but it misses with an interior that feels cheaper than it should. We expect more from a nearly \$50,000 car.

On the road, the XE is a delight to drive as it carves winding roads with ease. Press down on the gas pedal and the four-cylinder turbo engine responds quickly, although at 7.7 seconds in the 0-to-60 mph

sprint, the XE trails competitors by about a second. The AWD model we bought registered 25 mpg overall, a middling number for its class. The eight-speed automatic transmission is smooth and responsive. But in urban settings, drivers and passengers will be annoyed with the stop/start system as it restarts with a shudder.

Overall, the ride is steady and controlled, with some bounce and jiggles only evident over the roughest pavement.

While the interior looks good, wide panel gaps and flimsy-feeling materials detract from the experience. The controls range from odd to frustrating.

The standard front seats can accommodate most, but they lack adjustable lumbar support. And the cabin is super snug. The rear seat is cramped even by the modest standards of the class.

CR wishes that a host of optional advanced safety and driver assistance features were standard across all trims.

LUXURY COMPACT CARS

Jaguar XE

OVERALL SCORE **54**

ROAD-TEST SCORE 69

HIGHS

Handling, agility, steering

LOWS

Tight quarters, seat comfort, controls, interior is short on luxury

POWERTRAIN

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

FUEL

25 mpg

PRICE AS TESTED

\$47,378



Frugal and Fun, But Flawed

*Defined by style and heritage, the new **Alfa Romeo Giulia** is rewarding to drive but hamstrung by ergonomic flaws and reliability concerns.*

MANY HAVE WELCOMED the new Giulia and its fresh styling with a hearty “Ciao!” And on the road and test track, CR testers found the car nimble and kicky to drive.

Still, we think this Italian luxury compact sedan falls short on interior quality and ergonomics and is full of little everyday annoyances.

The Giulia has the handling chops to qualify as a driver's car, but the eight-speed automatic stumbles at low speeds before it gets going. Its turbo four-cylinder engine churns out robust acceleration with a deep roar of an exhaust

note some people may find too loud. Despite its sporty track performance, the Giulia still returned 27 mpg overall, making it among the most frugal in its segment.

The Giulia's firm ride soaks up the impact from most bumps and ruts, but the road and wind noise are intrusive for this class.

This Alfa has more than its share of infuriating design quirks. For instance, the engine start button is awkwardly located on the steering wheel, the shifter annoyingly requires drivers to press a button to go from Reverse to Drive, and the infotainment system is cumbersome to use.

The driver's seat has a short bottom cushion that can't be tilted up to improve thigh support, compromising the driving position.

Key safety systems, such as forward-collision warning and automatic emergency braking, aren't standard—a notable omission for a new, upscale car.

LUXURY COMPACT CARS

Alfa Romeo Giulia

OVERALL SCORE **52**

ROAD-TEST SCORE 70

HIGHS

Agile handling, fuel economy

LOWS

Controls, tight rear seat, limited driver's-seat adjustments

POWERTRAIN

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

FUEL

27 mpg

PRICE AS TESTED

\$48,890



Is Beauty Only Skin-Deep?

The Land Rover Discovery enjoys unparalleled cachet. But the SUV's lumbering handling, thirst for fuel, and uncertain reliability keep it from being a truly class act.

POPULAR WITH ROYALTY, sports stars, and jet-setters, few brands can boast Land Rover's brand swagger. Land Rovers have traditionally been robust off-roaders, but recent models focus less on dirt trails and more on modern creature comforts. Though the new Discovery has a more curvaceous look and rides smoothly, it's still a thirsty, lumbering SUV.

The Discovery mates a powerful 3.0-liter, supercharged V6 engine to a smooth eight-speed transmission. Drivers get

power on demand, but the price is a trucklike 17 mpg overall.

On the road, the Discovery is more hippo in a tutu than dancing queen: It has lots of body roll when it turns. Its overly light steering and hefty 5,400 pounds detract from a sense of precision. The optional air suspension not only steadies the Discovery but also absorbs all but the nastiest potholes.

The plush cabin is as quiet as Wimbledon's Centre Court before a serve, and it features firm, thronelike seats. But the low second-row seat lacks thigh support and forces adults to sit with their knees high in the air.

In addition, Land Rover's confusing controls result in simple tasks, such as changing audio settings, becoming multi-step processes.

Despite a \$56,950 base price, forward-collision warning and automatic emergency braking aren't standard on the HSE-trim Discovery that CR tested.

LUXURY MIDSIZED SUVs

Land Rover Discovery

OVERALL SCORE

51

ROAD-TEST SCORE 71

HIGHS

Acceleration, ride, quietness, front-seat comfort, fit and finish

LOWS

Agility, fuel economy, controls, low rear seat, third-row access

POWERTRAIN

340-hp, 3.0-liter supercharged V6 engine; 8-speed automatic transmission; all-wheel drive

FUEL

17 mpg

PRICE AS TESTED

\$69,260



Understated Status Symbol

More gusto, better efficiency, and a smoother ride help make the redesigned Audi Q5 a well-rounded choice.

THE NEW Q5's subtle redesign barely hints at the many improvements made compared with the previous generation. Even though the ride is firm, the Q5's suspension very effectively absorbs each bump. The engine is also quieter, and the appealing interior is brimming with high-tech features. To top it off, the Q5 is quicker even while the fuel economy is better.

Audi's new 2.0-liter turbo four-cylinder engine is smooth and energetic, powering the Q5 to 60 mph in a scant 6.8 seconds. More impressive, it managed 24 mpg overall, a gain

of 3 mpg relative to the previous Q5. Though the new seven-speed dual-clutch automatic has a slight delay during rolling stops, it delivers brisk, smooth shifts after that. But it's counterintuitive to push the shifter forward for Reverse, and you must press a separate button for Park.

The Q5 ranks at the top of the class in cabin tranquility, with a premium-looking interior that's clean and uncluttered. The MMI infotainment system is filled with features and proves logical once mastered. Android Auto and Apple CarPlay are standard.

There's more passenger space inside the Q5 than its shape suggests. The driver has plenty of space, and the supportive front seats are firm and well-padded, with a range of power adjustments. The rear seat is surprisingly roomy for this class.

And last, we applaud Audi for making forward-collision warning and low-speed automatic emergency braking standard on all 2018 Q5s.

LUXURY COMPACT SUVs

Audi Q5

OVERALL SCORE

78

ROAD-TEST SCORE 83

HIGHS

Quietness, seat comfort, fuel economy

LOWS

Unintuitive gear selector, controls require a learning curve

POWERTRAIN

252-hp, 2.0-liter four-cylinder turbo engine; 7-speed dual-clutch automatic transmission; all-wheel drive

FUEL

24 mpg

PRICE AS TESTED

\$51,570

Ratings > **Three Levels of Luxury** These cars and SUVs can get you from A to B like any other vehicle. But they do it with greater levels of comfort and performance, and have more amenities.



	Make & Model	Overall Score	Price	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-manuever speed, mph	Routine handling	Ride	Noise	Seat comfort front/rear	Controls	Luggage, suitcases+duffels/cargo volume, cu. ft.

LUXURY COMPACT CARS

✓	Audi A4 Premium Plus	81	\$48,890	✓	✓	Std./✓	88	27	6.3	135	53.5	✓	✓	✓	✓/✓	✓	2+2
✓	BMW 330i xDrive	76	\$51,745	✓	✓	Opt.	86	26	6.9	129	55.0	✓	✓	✓	✓/✓	✓	2+2
✓	Volvo S60 T5	73	\$39,925	✓	✓	Std./✓	80	25	7.9	128	54.0	✓	✓	✓	✓/✓	✓	3+0
	Infiniti Q50 3.0t Premium (AWD)	71	\$48,775	✓	✓	Opt.	85	22	5.7	126	56.0	✓	✓	✓	✓/✓	✓	2+1
	Mercedes-Benz C300 (4MATIC) ⚠	67	\$47,560	✓	✓	Std./✓	85	26	6.8	136	55.5	✓	✓	✓	✓/✓	✓	2+1
	Lexus IS300 (AWD)	66	\$48,149	✓	✓	Std./✓	56	20	6.5	139	53.0	✓	✓	✓	✓/✓	✓	2+1
	Cadillac ATS Luxury (2.0T)	60	\$43,295	✓	✓	Opt.	79	23	6.5	125	57.5	✓	✓	✓	✓/✓	✓	2+1
	Acura TLX SH-AWD	59	\$42,345	✓	✓	Std./✓	75	25	6.5	129	55.0	✓	✓	✓	✓/✓	✓	2+2
	Jaguar XE Premium 25t (AWD)	54	\$47,378	✓	✓	Opt.	69	25	7.7	133	53.0	✓	✓	✓	✓/✓	✓	1+2
	Alfa Romeo Giulia Ti (AWD)	52	\$48,890	✓	✓	Opt.	70	27	6.7	136	53.0	✓	✓	✓	✓/✓	✓	1+2

LUXURY COMPACT SUVs

✓	Mercedes-Benz GLC 300 ⚠	79	\$49,105	✓	✓	Std./✓	81	22	6.8	132	50.0	✓	✓	✓	✓/✓	✓	28.0
✓	Audi Q5 Premium Plus	78	\$51,570	✓	✓	Std./✓	83	24	6.8	130	52.5	✓	✓	✓	✓/✓	✓	27.0
✓	Lexus NX 200t	76	\$43,284	✓	✓	Opt.	74	24	7.5	132	49.5	✓	✓	✓	✓/✓	✓	28.5
✓	Porsche Macan S	74	\$63,290	✓	✓	Opt.	85	19	6.4	130	51.0	✓	✓	✓	✓/✓	✓	29.0
✓	Acura RDX	72	\$38,990	✓	✓	Opt.	75	22	6.6	132	51.0	✓	✓	✓	✓/✓	✓	31.5
	Cadillac XT5 Luxury	67	\$51,025	✓	✓	Opt.	76	20	7.1	132	53.5	✓	✓	✓	✓/✓	✓	33.0
	Buick Envision Premium	66	\$45,380	✓	✓	Opt.	67	21	7.9	128	55.0	✓	✓	✓	✓/✓	✓	32.5
	Jaguar F-Pace Prestige	56	\$53,895	✓	✓	Opt.	72	20	6.0	129	50.5	✓	✓	✓	✓/✓	✓	28.5
	Lincoln MKC Reserve	54	\$46,485	✓	✓	Opt.	72	19	7.8	125	54.0	✓	✓	✓	✓/✓	✓	30.5
	Land Rover Discovery Sport HSE	43	\$49,895	✓	✓	Opt.	58	21	8.6	136	50.5	✓	✓	✓	✓/✓	✓	33.0

LUXURY MIDSIZED 3-ROW SUVs

✓	Audi Q7 Premium Plus	90	\$68,695	✓	✓	Std./✓	96	20	6.7	127	50.0	✓	✓	✓	✓/✓	✓	35.5
✓	GMC Acadia Denali	76	\$51,585	✓	✓	Opt.	83	19	6.8	130	53.5	✓	✓	✓	✓/✓	✓	40.5
✓	Lexus GX 460	75	\$58,428	✓	✓	Opt.	70	17	7.5	136	48.0	✓	✓	✓	✓/✓	✓	36.5
✓	Acura MDX Tech	73	\$51,410	✓	✓	Std./✓	79	21	6.8	135	52.0	✓	✓	✓	✓/✓	✓	34.0
✓	BMW X5 xDrive35i	72	\$70,050	✓	✓	Opt.	84	21	7.4	137	52.0	✓	✓	✓	✓/✓	✓	34.5
	Infiniti QX60 (3.5L)	65	\$51,920	✓	✓	Opt.	79	19	8.3	137	47.0	✓	✓	✓	✓/✓	✓	39.0
	Volvo XC90 T6 Momentum ⚠	65	\$56,805	✓	✓	Std./✓	84	20	7.7	126	52.5	✓	✓	✓	✓/✓	✓	35.0
	Land Rover Discovery HSE	51	\$69,260	✓	✓	Opt.	71	17	7.3	138	47.5	✓	✓	✓	✓/✓	✓	42.5

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.consumerreports.org/cars).

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Mashed Potatoes & Minced Words

All the fixings for a Thanksgiving dinner—with a few misgivings, too



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

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

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

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

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

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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.

Air Purifiers

Twenty-one of the tested air purifiers are available, including 3 of the recommended models. **Report and ratings, pages 8-15**

		Brand & Model	Overall Score	Price
Rec.	Rank			
LARGE ROOM (350-650 SQ. FT.)				
	1	Blueair Blue Pure 211	89	\$330
	2	Blueair Classic 605	88	\$940
	3	Honeywell HPA300	76	\$330
	10	Winix FresHome WACP450	64	\$450
	12	Winix 5300-2	59	\$255
	13	Airmega 300	59	\$700
	15	Blueair 403 (Costco Exclusive)	58	\$550
	16	Honeywell HPA250BC	58	\$300
MEDIUM ROOM (250-400 SQ. FT.)				
	1	Honeywell Air Genius HFD310CV2	59	\$250
	4	Fellowes AP-300PH	52	\$455
	5	Oreck AIR108	52	\$600

		Brand & Model	Overall Score	Price
Rec.	Rank			
MEDIUM ROOM (250-400 SQ. FT.) <i>Continued</i>				
	6	GermGuardian AC9200WCA	52	\$500
	7	Febreze FHT190WC	51	\$130
	9	Fellowes AeraMax 300	49	\$350
	11	Vornado PCO300	47	\$500
	13	Therapure TPP240	46	\$330
	14	Friedrich AP260	46	\$380
	15	Rowenta PU6020	45	\$490
	16	Allergy Pro AP200	45	\$210
	19	GermGuardian AC5000CA [†]	41	\$200
SMALL ROOM (100-300 SQ. FT.)				
	2	Dyson Pure Cool Link	26	\$700

[†] Not Energy Star certified.

Microwaves

Five of the tested microwaves are available.

Report and ratings, pages 34-43

		Brand & Model	Overall Score	Price
Rec.	Rank			
MIDSIZED COUNTERTOP				
	4	Frigidaire CFCM1134LS	71	\$150
	7	Panasonic Prestige NN-SD382	68	\$180
LARGE COUNTERTOP				
	8	Panasonic NN-SE795S	70	\$500
	13	LG LMC1575ST	68	\$250
	21	Panasonic NN-SD755S	66	\$270

Food Processors

Five of the tested food processors are available, including 3 of the recommended models. **Report and ratings, pages 34-43**

		Brand & Model	Overall Score	Price
Rec.	Rank			
✓	1	Breville Sous Chef BFP800BAL1BCA1	81	\$570
✓	2	Cuisinart Elite Collection 2.0 FP-12DCNC	67	NA
✓	4	Cuisinart Custom 14 DFP-14BCNY	66	\$300
	5	Breville Sous Chef 12 BFP660 SIL1BCA1	64	\$400
	7	Electrolux Masterpiece PowerTilt ELFP15D9PS	64	NA

Immersion Blenders

Four of the tested immersion blenders are available, including 1 recommended model. **Report and ratings, pages 34-43**

		Brand & Model	Overall Score	Price
Rec.	Rank			
✓	1	Breville Control Grip BSB510XL	92	\$120
	2	Cuisinart Smart Stick CSB-75	76	\$60
	3	Electrolux Masterpiece ELHB10B9PS	69	\$270
	5	Bodum Bistro Blenderstick	64	\$65

Full-Sized Blenders

Sixteen of the tested blenders are available, including 2 of the recommended models. **Report and ratings, pages 34-43**

		Brand & Model	Overall Score	Price
Rec.	Rank			
✓	1	Vitamix Professional Series 750	85	\$750
✓	2	Blendtec Designer 725	84	\$940
	3	Cuisinart Hurricane Pro CBT-2000C	80	\$770*
	4	Vitamix 5200	79	NA
	6	Ninja Professional NJ600WMC	78	\$110
	7	Ninja with Auto-iQ BL642-30	77	\$280
	10	Blendtec Designer 625	74	\$650
	11	Wolf Gourmet High Performance ICBWGBL100S-C	73	\$700
	12	Breville The Boss BBL910XL	71	\$600
	14	Braun PureMix JB7172BK	69	\$200
	15	Breville Hemisphere Control BBL605XL	69	\$250
	16	Oster Versa 1100 Series Performance	68	\$150
	17	Ninja BL770 ⓘ	68	\$300
	19	Ninja BlendMax Duo with Auto-iQ Boost BL2013	68	\$260
	20	Cuisinart Hurricane 2.25Peak HP CBT-1500C	68	\$385
	21	Electrolux Masterpiece ELJB74D9PS	68	\$400

ⓘ Blender/food processor/mixer.

Toaster Ovens

Nine of the tested toaster ovens are available, including 3 of the recommended models. **Report and ratings, pages 34-43**

		Brand & Model	Overall Score	Price
Rec.	Rank			
✓	1	Breville Smart Oven Pro BOV845BSS1BCA1	76	\$370
✓	3	Cuisinart Chefs Toaster Convection TOB-260N	74	\$350
✓	6	DeLonghi Livenza Stainless EO 241250M	70	\$390
	8	Breville Smart Oven Air Convection BOV900BSS1BCA1	69	\$500
	9	Panasonic FlashXpress NB-G110PW Oven	68	\$190
	10	Breville BOV650BSS1BCA1 Oven	67	\$300
	11	Black+Decker Dining In Digital TO3280SSD Oven	65	\$130
	14	Hamilton Beach Toaststation 22720	63	\$70
	15	KitchenAid Digital Convection Countertop KCO273SS	63	\$320

TVs

Sixty of the tested TVs are available, including 49 of the recommended models. **Report and ratings, pages 44-51**

	Brand & Model	Overall Score	Price
Rec.			
60-INCH AND LARGER			
	VERY EFFECTIVE HDR		
✓	LG OLED65W7P	89	\$10,000
✓	LG OLED65C7P	88	\$4,500
✓	LG OLED65B7P	88	\$4,500
✓	LG OLED65G7P	87	\$10,000
✓	LG OLED65E7P	86	\$7,000
✓	Sony XBR-65X930E	82	\$4,000
	EFFECTIVE HDR		
✓	Sony Bravia XBR-65A1E	88	\$6,000
✓	LG 65SJ9500	81	\$4,000
✓	Samsung QN65Q8C	80	\$5,300
\$	LG 65SJ8000	79	\$2,200
\$	Samsung UN65MU8500	79	\$2,700
\$	Samsung UN65LS003	78	\$3,800
\$	Samsung UN65MU8000	77	\$2,500
✓	LG 65SJ8500	77	\$2,500
\$	Sony XBR-65X900E	76	\$3,700
✓	LG 75SJ8570	76	\$5,000
\$	LG 65UJ7700	73	\$1,900
✓	Sony XBR-65X850E	71	\$2,600
\$	Samsung UN65MU7000	71	\$2,000
	EFFECTIVE HDR		
\$	Vizio P65-E1	67	\$3,000
	LG 65UJ6300	64	\$1,500
	LIMITED HDR EFFECTIVENESS		
\$	Samsung UN65MU6300	74	\$1,600
✓	Sony XBR-75X850E	71	\$4,600
\$	Samsung UN65MU6500	71	\$1,900
	HDR NOT EFFECTIVE		
	Vizio E80-E3	62	\$4,870
	Vizio E75-E3	62	\$3,000
	Vizio E65-E1	59	\$1,200
	Vizio E65-E0	59	\$1,425
	HDR NOT SUPPORTED		
\$	Vizio D65-E0	65	\$1,250
55- TO 59-INCH			
	VERY EFFECTIVE HDR		
✓	LG OLED55B7P	88	\$2,650
✓	Sony XBR-55X930E	81	\$3,600

	Brand & Model	Overall Score	Price
Rec.			
55- TO 59-INCH <i>Continued</i>			
	EFFECTIVE HDR		
✓	Sony Bravia XBR-55A1E	88	\$4,500
✓	LG OLED55E7P	86	\$5,000
	EFFECTIVE HDR		
✓	Samsung UN55MU8500	77	\$2,000
✓	LG 55SJ8500	77	\$1,900
✓	Sony XBR-55X900E	76	\$2,650
\$	LG 55UJ7700	76	\$1,400
\$	LG 55UJ6540	74	\$1,050
	LIMITED HDR EFFECTIVENESS		
\$	Samsung UN55MU6300	74	\$1,100
\$	Samsung UN55MU6500	73	\$1,300
\$	Samsung UN55MU7000	73	\$1,400
✓	Sony XBR-55X800E	68	\$1,400
✓	Vizio P55-E1	67	\$1,500
	LG 55UJ6300	62	\$950
	HDR NOT SUPPORTED		
	RCA RTU5540	47	\$500
46- TO 52-INCH			
	EFFECTIVE HDR		
✓	Samsung UN49MU8000	75	\$1,600
✓	Sony XBR-49X900E	73	\$1,500
✓	Samsung UN49MU7500	70	\$1,400
	LIMITED HDR EFFECTIVENESS		
✓	Samsung UN50MU6300	72	\$850
✓	Samsung UN49MU7000	69	\$1,200
✓	LG 49UJ6500	68	\$1,000
✓	Sony XBR-49X800E	68	\$1,100
✓	LG 49UJ6300	65	\$900
	Insignia NS-50DR620CA	61	\$700
	HDR NOT SUPPORTED		
	Vizio D50-E1	56	\$780
39- TO 43-INCH			
	EFFECTIVE HDR		
✓	Sony XBR-43X800E	68	\$1,000
	LIMITED HDR EFFECTIVENESS		
✓	Samsung UN40MU6300	71	\$700
✓	Samsung UN40MU7000	70	\$1,000
	LG 43UJ6300	63	\$900
	HDR NOT SUPPORTED		
	Vizio D43-E2	59	\$600

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

LUXURY COMPACT CARS

Jaguar XE	\$43,900–\$63,900	3.2	8.1	3.6	18.2	14.2	6.5	9.4
Alfa Romeo Giulia	\$48,995–\$87,995	3.2	7.1	3.2	17.3	13.2	6.1	8.7

LUXURY COMPACT SUV

Audi Q5	\$44,950–\$65,900	2.8	7.2	3.3	17.6	14.0	7.0	9.6
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LUXURY MIDSIZED 3-ROW SUV

Land Rover Discovery	\$61,500–\$82,500	3.0	7.7	3.6	17.9	20.2	10.0	13.8
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JAGUAR XE
PRICE AS TESTED
\$47,378 (U.S.)

54
OVERALL
SCORE



ALFA ROMEO GIULIA
PRICE AS TESTED
\$48,890 (U.S.)

52
OVERALL
SCORE



AUDI Q5
PRICE AS TESTED
\$51,570 (U.S.)

78
OVERALL
SCORE



LAND ROVER DISCOVERY
PRICE AS TESTED
\$69,260 (U.S.)

51
OVERALL
SCORE

Contact
Info

How to reach
manufacturers
in Canada.

Airmega
airmega.com

Allergy Pro
envionproducts.com

Black+Decker
blackanddecker.ca

Blendtec
blendtec.com

Blueair
blueair.ca

Bodum
bodum.ca

Braun
braun.com

Breville
breville.ca

Cuisinart
cuisinart.ca

DeLonghi
delonghi.ca

Dyson
dysoncanada.ca

Electrolux
electrolux.ca

Febreze
honeywellpluggedin.com

Fellowes
fellowes.com

Friedrich
friedrich.com

Frigidaire
frigidaire.ca

GermGuardian
guardiantechologies.com

Hamilton Beach
hamiltonbeach.ca

Honeywell
honeywellpluggedin.com

Insignia
bestbuy.ca

KitchenAid
kitchenaid.ca

LG
lg.com/ca

Ninja
ninja-kitchen.com

Oreck
oreck.com

Oster
oster.com

Panasonic
panasonic.ca

RCA
rcatelecanada.com

Rowenta
rowenta.com

Samsung
samsung.com/ca

Sony
sony.ca

Therapure
envionproducts.com

Vitamix
vitamix.com

Vizio
vizio.com/en-ca

Vornado
vornado.com

Winix
winix.com

Wolf
subzero-wolf.com