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- ▶ **How to stay safe on Facebook**

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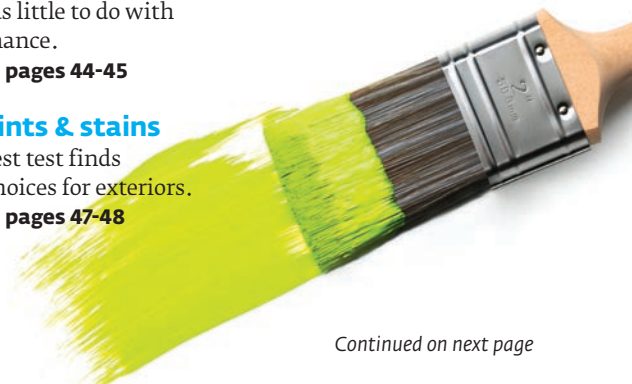
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This issue by the numbers

Best & worst scores

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What you'll save

\$5,715

Buy a Mercedes-Benz ML350 SUV instead of a BMW X5 to save this much and get a better ride.

\$600

Negotiate for your bundled **phone, TV, and Internet** and save up to this much annually on your bills.

\$330

Buy a set of EarthPan nonstick **cookware** and save this much over a Scanpan set.

Coming in July

Annual kitchen issue, with Ratings of ranges, refrigerators, microwave ovens, dishwashers, countertops, flooring, and appliance retailers. Plus hotels and gas-miser cars.

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Distracted driving: Danger in the next lane.

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Face-offs of the Honda CR-V and Mazda CX-5, the Kia Soul and Subaru Impreza hatchback, and the BMW X5 and Mercedes-Benz ML350.

PLUS A look at the Volvo XC90.

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Who we are

Consumer Reports

is the world's largest independent consumer-product-testing organization. We also survey millions of consumers about their experiences with products and services. We're based in Yonkers, N.Y., and are a nonprofit organization.

What we do We buy all the products we rate.

What we don't do We don't accept paid advertising; we get our money mainly through subscriptions and donations. We don't accept free test samples from manufacturers. And we don't allow our name or content to be used for any promotional purposes.

How to reach us Write to us at Consumer Reports, 101 Truman Ave., Yonkers, NY 10703-1057, attn: Customer Service.

- To send a letter to the editor, go to ConsumerReports.org/lettertoeditor.
- For news tips and story ideas, go to ConsumerReports.org/tips.
- E-mail submissions for Selling It to SellingIt@cro.consumer.org.
- For subscription information, go to ConsumerReports.org/magazine or call 800-666-5261. See page 61 for more details.

Ratings We rate products using these symbols:

● Excellent ● Very good ○ Good ● Fair ● Poor

CR Best Buy Products with this icon offer the best combination of performance and price.

Recommended product Models with this designation perform well and stand out for reasons we note.

Recommended car These tested well, are reliable, and performed adequately if crash-tested or included in a federal rollover test.

Don't Buy We label products with this icon when we judge them to be safety risks or to have serious performance problems.

ON YOUR MIND

Annual Auto Issue

On page 5 of your April 2012 automobile issue, you say the Volt gets 35 miles on battery and then 32 mpg, costing more per mile than many hybrids. Then on page 10 you say it gets a composite of 61 mpg. Please explain the math.

—Art Morris Sherwood, OR

Editor's note The composite assumes a trip of 50 miles, 35 miles of which are in electric mode, with an energy equivalent of 99 mpg. In gas mode, the Volt gets 32 mpg.

In "Stopping Crashes With Smarter Cars" you cite experts who say the past 50 years have been about surviving crashes and the next 50 will be about preventing them. I've been



teaching safe driving since 1965, and I've always taught how to prevent crashes.

—Al Cinamon Yonkers, NY

"Top Tires" says your Ratings are based on vehicle and tire type. I've been told that I

should use specific tires that generate less road friction in support of the electric engine of my two hybrids. Do such tires work as well for mileage and all-wheel-drive purposes?

—Mike Hahl Delray Beach, FL

Editor's note All cars will get the best fuel economy using tires with low rolling resistance. Our tests have shown that the Continental ProContact EcoPlus+ and Michelin Energy Saver A/S are excellent all-season tires with

very low rolling resistance and good tread life. Both are offered in sizes that fit most hybrids.

Some cars you profiled require premium gas. Is 91 octane enough, or is 93 necessary?

—Jack Castina Port Jefferson, NY

Editor's note Premium gas is usually 91 octane or above. Use whatever your owner's manual specifies.

In your car issue you use the term "fit and finish" a lot. What does that mean?

—Tom Neirinckx Huntley, IL

Editor's note It refers to the quality of interior materials and how well they fit together.

SEND YOUR LETTERS TO
ConsumerReports.org/lettertooeditor.

Ask our experts

Q Many businesses that accept credit cards set a minimum charge, and my city hall charges an additional fee if you pay by credit card. Is this legal?

—Kristen Davidson Waynesboro, VA

The Dodd-Frank Wall Street Reform and Consumer Protection Act, in effect since July 2010, allows merchants to set a minimum credit-card purchase of up to \$10 as long as they don't differentiate among card issuers or payment-card networks. They can also charge a processing fee if you pay by credit card.

Q Are there standards for the statement "clinically proven" in ads for cosmetics and health products?

—David Farquhar Norwich, NY

The Federal Trade Commission requires the claim "clinically proven" to have one or more clinical studies backing it up, and they're supposed to be of sufficient quality that an expert in the field would consider them adequate proof. But the studies don't have to be submitted to the FTC before advertising; the burden is on the agency to request and review them if it suspects a claim is misleading.

Q Travel insurance seems very expensive, and you don't get much for it. Is it really worth it?

—Carl Vinas Huntington, NY

It can make sense if you fear having to cancel a pricey trip because of illness, for example. But the coverage is often unnecessary if you have protection through homeowners, auto, life, or health insurance; a credit card; or consumer protection laws. If those don't cover you, try a multi-insurer site such as InsureMyTrip.com, and talk to a representative to ensure that your fear is covered. Don't buy from a tour operator or cruise line because you probably

PLAY BALL
A 1080p TV usually does a decent job upconverting content such as sports and news shot in 1080i.



won't get your money back if it goes bankrupt. And don't buy from a travel agent; he or she might offer only the insurer that pays the highest sales commissions rather than the best plan for you.

Q What good are the 1080p and 120/240 Hz features in a TV when most of the cable and satellite broadcasts are in 1080i and 60 Hz?

—Maria Bensimon Van Nuys, CA

A 1080p TV will derive true 1080p performance from 1080i film content from cable. (That's the "film mode" performance we note on our model pages at ConsumerReports.org.) But there's no true 1080p video content from cable or Blu-ray. Video, including sports and the evening news, is shot in 1080i, which most 1080p TVs do a decent job "upconverting."

Q I just got a smart phone and downloaded an app. There was an ominous list of privacy warnings, and the phrase across most of them was "malicious apps can" How do I know which apps are malicious, and what does that mean?

—Bob Kip San Diego

Google issues those standard warnings because it can't guarantee that an app doesn't contain malicious code. (Malicious means specifically intended to do something the user would not want it to do, such as take personal information for purposes other than what the software is claimed to do.) You should examine the vendor's information and user reviews to gain confidence that the app is legitimate.

SEND YOUR QUESTIONS TO
ConsumerReports.org/askourexperts.

This page highlights efforts of Consumers Union, the policy and action arm of Consumer Reports, to improve the marketplace.

WHERE WE STAND

Log off and drive

THE ISSUE Some 450,000 injuries and 5,500 deaths a year are related to distracted driving. New government guidelines for carmakers are intended to limit distractions from built-in GPS navigators, and onboard texting and Web-surfing technology.

OUR TAKE People want to stay connected, but doing it while driving is a bad call. Punching an address into a GPS device, sending a text message, or browsing the Web on your dashboard at 65 mph can be deadly. The National Highway Traffic Safety Administration's new guidelines for automakers are an important start to helping drivers keep their full attention on the road. Because of their potential to reduce the risk of tragedy, we believe they should be made mandatory. NHTSA is also looking at ways to reduce distractions from cell phones and other portable electronics. The sooner, the better, we believe.



Did you know?

Until recently, the National Highway Traffic Safety Administration used only “male” dummies in its five-star crash tests. But because of women’s smaller size, they are generally at greater risk in an accident. So small-adult “female” dummies hopped onboard—as the driver or passenger, depending on the test—starting with model year 2011. Results now give a better idea of what might happen in a crash to a smaller, lighter person.

QUOTABLE

‘The snake oil salesman is still alive.’

—GARY COODY, R.P.H., national health-fraud coordinator at the Food and Drug Administration, on the aggressive marketing of “miracle cures” that are worthless or harmful. Go to www.fda.gov/healthfraud for more.

Web watch

Have a money question?

Get a plain-language answer at consumerfinance.gov/askcfpb.

At “Ask CFPB,” the Consumer Financial Protection Bureau’s experts help with questions such as, “Can they charge me interest on a charge I told them I did not make?” (Answer: Not while the charge is being investigated.) Credit-card and mortgage Q&As are up now; student and auto loans and bank accounts are coming.



FROM OUR PRESIDENT

Wanna buy a doctor?

A physician with Kaiser Permanente told us recently how that nonprofit health-care provider deals with gifts from makers of drugs and medical devices: “None of our surgeons can receive anything of any significant benefit from any company, so nothing more than \$25 a year per vendor. You can’t accept meals or trips or honorariums or consulting fees. If you go to dinner with a rep to learn about new products, you just have to pay for it.”



Score one for the patient. Physicians who are not influenced by industry reps are more likely to prescribe the best treatment rather than the drug on the mug they were given last week. The Institute of Medicine believes that gifts and payments create conflicts of interest that “may jeopardize the integrity of scientific investigations, the objectivity of medical education, the quality of patient care, and the public’s trust in medicine.”

Other hospital systems are joining Kaiser Permanente in restricting gifts, including the Department of Veterans Affairs and several dozen academic medical centers. But influence peddling by the makers of medical products—and the willingness of physicians to participate—is still far too prevalent.

Restrict, report, or both

Vermont is one of the few states that have set their own protections. Bans on most gifts and required public disclosure of allowable expenditures have led to a 50 percent drop in pharmaceutical marketing dollars in that state, from some \$4 million in 2004 to around \$2 million in 2010.

Thanks to recent health-care-reform laws, transparency is about to go national. Starting in 2013, drug and medical-device manufacturers must publicly report gifts and payments to physicians and teaching hospitals. Companies can hold off publishing (but not reporting to the government) legitimate payments if revealing them could hurt their business. It would be far better if such payments didn’t happen.

If you want to see whether your doctor or hospital has been paid by any of 12 drug companies, go to propublica.org and click on “Dollars for Docs.”

Jim Guest
JIM GUEST
President

Up front

Tips, trends, everyday products

Pick of the pickles

We gave **Peter Piper** a rest and asked five trained tasters to spend three days sampling 10 brands of dill pickles, whole or in spears (we cut the whole ones into spears to level the playing field). The winner: Whole Foods 365 Everyday Value, with its pleasing balance of garlic, salt, sourness, and spices. Whole Foods and runner-up Trader Joe's are whole pickles and have desirably crispy skins with crunchy insides.

The rest of the tested pickles are spears, and most are very good. The Ba-Tampte were lowest-rated yet cost more than most.

A pickle spear has only about 4 calories but about 300 milligrams of sodium, roughly 13 percent of the recommended daily limit for most people.

Bottom line. Whole Foods 365 Everyday Value dills are tastiest; runners-up Trader Joe's and Walmart's Great Value cost less.

DID YOU KNOW?

Pickle primer

Dill sometimes means that pickles have had dill weed added to their brine. Other times it just refers to large size.

Kosher doesn't necessarily indicate that pickles were prepared under a rabbi's supervision, just that garlic was added to the brine.



365 Everyday Value



Trader Joe's



Great Value

Ratings

All tested products In taste order.

☒ Recommended

	Product	Per jar		Comments
Rec.		Size (oz.)	Price	
EXCELLENT				
<input checked="" type="checkbox"/>	365 Everyday Value Organic Kosher Dill (Whole Foods)	24	\$3.69	Small, crunchy; balanced flavor of garlic, salt, sourness, spices.
VERY GOOD				
	Trader Joe's Kosher Dill	24	2.29	Small, crunchy; less dill than most; somewhat salty.
	Great Value Kosher Dill Spears (Walmart)	24	1.98	Large, bright color; zesty; mustardy flavor; thick skin; crisp outside, soft inside.
	Vlasic Kosher Dill Spears	24	2.66	Large, bright color; zesty; balanced flavor of garlic, salt, sourness, spices.
	Market Pantry Kosher Dill Spears (Target)	24	3.14	Large, bright color; zesty; crisp outside, soft inside.
	Mt. Olive Kosher Dill Spears	24	2.35	Large, bright color; zesty; touch of caraway; thick skin; crisp outside, soft inside.
	B&G Kosher Dill Spears	32	2.70	Large, bright color; mustardy flavor; thick, slightly tough skin; crisp outside, soft inside; big seeds.
	Boar's Head Kosher Dill Spears	26	3.60	Garlicky, touch of caraway, slight heat, a bit bitter; thick skin; crisp outside, soft inside.
	Claussen Kosher Dill Spears	24	3.32	Crunchy; touch of caraway, very salty, unbalanced flavor.
GOOD				
	Ba-Tampte Kosher Dill Deli Spears	32	3.22	Large; caraway flavor, slight heat, a bit bitter; thick skin; soft, watery inside; big seeds.

CLAIM CHECK

Flex Seal: Handyman in a can?

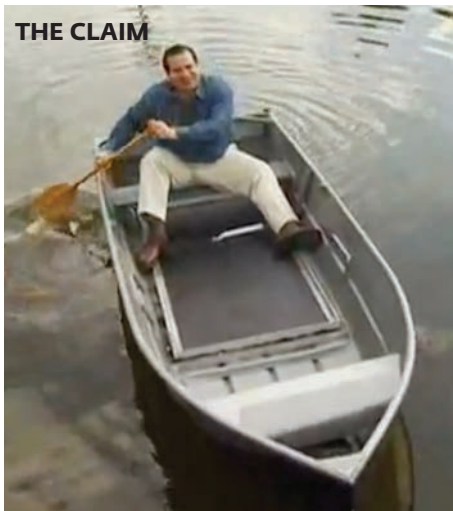
The claim. Flex Seal “stops leaks fast and is the easy way to coat, seal and protect almost anything,” the manufacturer says. In a promo video, pitchman Phil Swift applies Flex Seal to a screen door inserted in the bottom of a rowboat, then launches the boat with himself as skipper. It floats, of course. A 14-ounce can of the liquid is supposed to treat 2 to 12 square feet.

The check. See the photo caption. We also used Flex Seal on a copper pipe with drilled holes of different sizes, on an unsealed gutter, and on a cracked flowerpot. And we checked claims that the product is flexible and can be painted.

Bottom line. All aboard. Flex Seal floated our boat, and Teddy stayed dry. But with other uses, we hit rough seas. It took three coats of Flex Seal to plug the pipe holes, and larger holes blew out under water pressure. Even three coats didn't seal



THE CLAIM



THE CHECK



AHOY!, TEDDY Imitating the product's video, at left, we made our own tiny rowboat with a screen bottom, sealed the screen, and launched the boat in our lab "pond."

vertical sections of our gutter's end caps and joints: The product dripped down. Flex Seal was flexible but tore when bent too far. And although it sealed the crack in our flowerpot, we had to use two coats of spray paint to conceal our handiwork.

WATCH OUR VIDEO

Using your smart phone, download the ShopSavvy or the RedLaser app, then scan the code at right.



Pricey prepaid debit cards

In this era of rising bank fees, a new type of plastic is gaining ground: prepaid debit cards, bought online or in stores and requiring no bank account. They're used for purchases or to get cash at an ATM. The cards usually bear logos such as Visa, MasterCard, or Discover and often have "debit" on the front, so they look much like traditional debit or credit cards.

They're not. Prepaid cards don't provide guaranteed protections if they're lost, stolen, or used for unauthorized transactions, or if the bank behind them fails.

What's more, prepaid cards are often loaded with fees, many of which aren't disclosed at the point of sale. Consumers Union, the advocacy arm of Consumer Reports, recently looked at 16 of these cards and found charges for activation or initiation, monthly use, point-of-sale trans-

actions, balance inquiry, cash withdrawal, receiving a paper statement, calling customer service, paying bills, and not using your card.

And that's just for starters. Take the AccountNow Gold Visa Prepaid card, for example. Fine print on its website reveals myriad charges, including a monthly fee of \$9.95 unless you load \$2,500 onto the card. The AccountNow card also charges \$2.50 to use an ATM. And if you want to close your account and your balance is more than a penny? You'll pay \$15.95.

Bottom line. Until prepaid debit cards gain guaranteed protections and lose fees, regular debit or credit cards from a bank or credit union may be a better deal. Read the terms and conditions before choosing one.



Most cards charged \$2 to \$2.50 to take cash from an ATM—beyond the ATM operator's fee.

Sunscreens for safe fun in the sun

Choose the wrong sunscreen and you or your kids could get burned. Although most of the 18 top-selling products we tested protected very well against UVB rays, the tested Banana Boat Kids product was poor against UVA. UVB radiation causes sunburn; UVA radiation penetrates deeper, tanning and aging skin. UV radiation may promote skin cancer in two ways: by damaging the DNA in skin cells and by weakening the body's natural defenses against cancer cells.

The tested sunscreens have an SPF between 30 and 75+. Most claim "broad spectrum" protection, against both UVA and UVB. All things being equal, if you sunburn after 20 minutes without sunscreen, an SPF 30 product would protect you for about 10 hours (20 minutes x 30). But in reality, sun intensity, geographic location, skin type, and other factors come into play, so SPF is simply a relative measure of protection.

We tested the sunscreens on people—before and after immersion in freshwater—and on clear plastic plates, for a new test mandated by the Food and Drug Administration requiring that products claiming broad-spectrum protection have a minimum "critical wavelength." We also checked whether each product stained cotton, polyester, rayon/spandex, and nylon/spandex.

What we found. Seven products were very good against UVA, were excellent against UVB even after water immersion for 80 minutes, and passed the critical wavelength test.

But Aveeno and Neutrogena Sensitive Skin were just OK for UVB protection, and some others were effective when dry but less so after a dunking. Two that claim broad-spectrum protection, Alba Botanica and Banana Boat Kids, failed the wavelength test.

No one type protected best, and price had nothing to do with performance. La Roche-Posey, \$20.59 per ounce, rated below No-Ad, 59 cents. All but one sunscreen, Neutrogena Sensitive Skin, stained one or more fabrics.

To stay safe in the sun, wear a hat and protective clothing. When using any sunscreen:

Check ingredients. Oxybenzone may interfere with hormones in the body, and nanoscale zinc and titanium oxides have been linked to potential reproductive and

developmental effects. In skin, retinyl palmitate converts readily to retinoids, associated with a risk of birth defects in people using retinoid-containing acne medications.

Pregnant women may want to avoid products with retinyl palmitate, noted in the Ratings.

Spray carefully. The FDA has said it's exploring the risks of inhaling spray sunscreens. Avoid using sprays on kids, and spray sunscreen onto your hands to apply it to your face.

Use enough. Use 2 to 3 tablespoons of lotion on most of your body, or spray as much as can be rubbed in, then repeat. Reapply every 2 hours and after swimming or sweating.

Bottom line. No-Ad and Walgreens are CR Best Buys. Both have a classic beachy aroma. Any sunscreen you use should be water resistant, with an SPF of at least 30. Above 30, you get little extra protection.



RUB IT IN These and several others earned high marks. Labels may be changing soon.

Ratings

All tested products

In performance order, within types.

☒ CR Best Buy
 ☒ Recommended
☒ Excellent
 ☒ Very good
 ☐ Good
 ☐ Fair
 ☐ Poor

Rec.	Product	Cost (oz.)	Type	Overall score	UVA	UVB	UVB after water	Staining
				0 100 P F G V E				

SPF 30 Blocks 97 percent of UV rays.

<input checked="" type="checkbox"/>	All Terrain AquaSport	\$ 4.00	lotion	88				
<input checked="" type="checkbox"/>	Banana Boat Clear UltraMist Sport Performance Active Dry Protect ¹	1.63	spray	87				
<input checked="" type="checkbox"/>	Coppertone Sport High Performance Ultra Sweatproof ¹	1.67	spray	87				
<input checked="" type="checkbox"/>	Eco All Natural Sunscreen Body	4.72	lotion	87				
	Blue Lizard Australian Sunscreen Regular	3.40	lotion	76				
	Hawaiian Tropic Island Sport Clear ¹	1.62	spray	70				
	Dermatone The Ultimate Sunscreen for Fishermen	3.12	lotion	57				
	Aveeno Active Naturals Natural Protection MineralBlock	3.67	lotion	52				

SPF 40-50 Blocks 97 to 98 percent of UV rays.

<input checked="" type="checkbox"/>	No-Ad with Aloe & Vitamin E SPF 45	0.59	lotion	88				
<input checked="" type="checkbox"/>	Walgreens Continuous Spray Sport SPF 50	1.30	spray	87				
	Coppertone Water Babies SPF 50	1.38	lotion	82				
	La Roche-Posey Anthelios 40 with Mexoryl SX SPF 40	20.59	lotion	78				
	Neutrogena Ultra Sheer Body Mist with Helioplex SPF 45 ¹	1.90	spray	78				
	Alba Botanica Natural Very Emollient Sunblock Sport SPF 45	2.75	lotion	49				

SPF 50 PLUS Blocks up to 99 percent of UV rays.

<input checked="" type="checkbox"/>	Coppertone Oil Free Foaming SPF 75+ ¹	1.67	spray foam	87				
	Coppertone UltraGuard Continuous Spray SPF 70+	1.67	spray	73				
	Neutrogena Sensitive Skin SPF 60+ ¹	3.50	lotion	59				
	Banana Boat Kids Tear-Free Sting-Free SPF 50+ ¹	1.19	lotion	37				

¹ Contains retinyl palmitate, which pregnant women may want to avoid. ² Products labeled "waterproof," "very water resistant," or "resistant for 80 minutes" were tested for 80 minutes; Alba, labeled "water resistant," was tested for 40 minutes; La Roche-Posey doesn't claim water resistance. ³ Doesn't make a UVA or broad-spectrum claim.

BY THE NUMBERS

13,782

Total minutes test subjects sat in front of sunshine simulators.



HEAVY LIFTING For one of our tests, project leader Bob Karpel put each bag in wastebaskets, then tossed in cans of Vienna sausages and weights until the bags broke when lifted. Most ripped just below his grip, leaving him holding a white flag of surrender.

Trash talk: Which bags hold a heavy load?

If you're left holding the bag, you want the bag to be holding the trash, not spilling it onto the kitchen floor. But in tests of 10 tall kitchen bags, the top-selling type, we found big differences in performance.

Best of all were Glad Drawstring Stronger with Less Plastic and Hefty The Gripper. Hoisted aloft by a pulley apparatus, they and other high-rated bags held about 50 pounds of barbells before stretching like taffy and dropping their load. The lowest-rated bag, Member's Mark (Sam's Club), failed with about 35 pounds. The top two have other advantages. The Glad bag is advertised as using less plastic, based on thickness: Its maker says the

top section is 0.95 mils thick; the rest, 0.78 mils thick. Most other bags are about 0.9 mils throughout. The Hefty bag has a stretchable drawstring to help hold it to a wastebasket rim.

Don't buy only by brand: Although Glad ForceFlex was almost as good as its brand-mate, Hefty CinchSak did a bit worse than Hefty The Gripper. Paying more doesn't get you a better bag: A 7-cent Kirkland Signature bag outscored a 23-cent Ultra Tuf.

Bottom line. For heavy use, try one of the Recommended products, for 14 to 16 cents apiece. If you use bags for light trash, as in a bathroom, consider the less-pricey Kirkland Signature.



Ratings

☒ Recommended

All tested products In performance order.

	Product	Cost	Overall score
Rec.		Per bag	0 100 P F G V E
<input checked="" type="checkbox"/>	Glad Drawstring Stronger with Less Plastic	15¢	84
<input checked="" type="checkbox"/>	Hefty The Gripper with Unscented Odor Block Drawstring	16	84
<input checked="" type="checkbox"/>	Glad ForceFlex Tear Resistant Drawstring	14	81
	CVS Odor Control Drawstring	14	76
	Kirkland Signature Drawstring Trash 50787 (Costco)	7	74
	Hefty CinchSak with Unscented Odor Block Drawstring	16	74
	Great Value Drawstring (Walmart)	12	71
	Ultra Tuf Odor Neutralizing Drawstring (Walgreens)	23	69
	Up & Up Flex Fit Drawstring with Odor Control (Target)	12	66
	Member's Mark Simple Fit Drawstring (Sam's Club)	7	51

WATCH OUR VIDEO

Using your smart phone, download the ShopSavvy or the RedLaser app, then scan the code at right.



CLAIM CHECK

Putting Match Light charcoal to the test

The claim. "Easy lighting," says the manufacturer of Kingsford Match Light Instant Charcoal Briquets, which are sold already infused with lighter fluid. "Ready to cook in about 10 minutes." But Match Light's website has plenty of gripes from users for whom the claims proved wrong. Among the kinder complaints: "ruined my dinner" and "did not light!!!"

The check. We followed the bag's instructions: Stack briquettes, light with match, spread briquettes, and cook. We also lit standard charcoal briquettes after squirting them with lighter fluid.

Bottom line. We saw the light, using three

matches to start the coals at three different points. Although we tested outside in cold weather, the coals were almost ready to cook in 10 minutes. (So were the other coals we squirted with lighter fluid.) So why the complaints? Could be because some people don't follow the bag's fourth instruction: Close tightly after use. When we warmed some briquettes, letting their lighter fluid evaporate, they no longer lit with just a match. It would be helpful if the product bore a use-by date, letting buyers know how long coals stay effective in an opened bag.

Fast-food egg sandwiches

When you order a breakfast sandwich, can you “start your morning off right” (as Dunkin’ Donuts claims) and “wake up to deliciousness” (as McDonald’s says)?

Looking at calories, fats, sodium, sugars, and fiber, we graded the nutrition of 106 egg sandwiches from Burger King, Dunkin’ Donuts, McDonald’s, Starbucks, Subway, and Wendy’s. Then we had four tasters try one or two of the more nutritious choices from five of those chains, omitting Wendy’s because its breakfast sandwiches aren’t to be offered nationally until later this year. Tasters visited at least three locations per chain. Prices are from stores in the New York area.

What we found. Of the 106 choices, just six rated Very Good for nutrition, and all of those came from Subway. No breakfast sandwiches from Burger King, McDonald’s, or Wendy’s rated better than fair. (See “By the Numbers.”)

When it came to taste, only one of the sandwiches we tried rated Very Good: Subway’s Egg White and Cheese on Mornin’ Flatbread. Its components blended well, its flatbread was tender, its egg whites were flavorful. The rest had one or more drawbacks. Cheese in both Starbucks sandwiches was saucelike; egg in McDonald’s Egg McMuffin was slightly rubbery. Others had mediocre muffins or flavorless



GOOD MORNING The Subway Egg White and Cheese was very tasty and had decent nutrition.

eggs. Sandwich quality often varied from one location to another within a chain. The BK’s eggs were fluffy in two restaurants and wet in a third.

Bottom line. It’s hard to find a nutritious, tasty breakfast sandwich at a fast-food joint. Based on their experience, our tasters have three suggestions: Ask for any of these sandwiches well toasted; toasting blended the flavors and made the bread taste better. If you’re looking for good nutrition, skip cheese or meat, substitute egg whites for whole eggs, or avoid a foot-long. And eat right away, because quality fell as the sandwiches cooled off.

Ratings

All tested products In taste order.

☒ Recommended

● Excellent ● Very good ○ Good ● Fair ● Poor

	Product			Per serving				Comments
Rec.		Price	Nutrition	Calories	Fat (g)	Sodium (mg)	Fiber (g)	
	VERY GOOD							
<input checked="" type="checkbox"/>	Subway Egg White and Cheese on Mornin' Flatbread (3 in.)	\$2.00	○	170	5	540	1	Components blended well. Tender toasted flatbread, flavorful egg whites, tasty cheese.
	GOOD The first four were noticeably better than the last two.							
	Burger King BK Egg & Cheese Muffin	1.82	●	290	14	650	1	Fluffy, fresh eggs in two stores; untoasted muffin in one; wet eggs in third store.
	McDonald's Egg McMuffin	1.50	●	300	12	820	2	Tasty muffin and Canadian bacon, cheese less flavorful than elsewhere, slightly rubbery egg.
	Starbucks Chicken Sausage Wrap	3.25	○	300	10	700	5	Tasty bell peppers, saucelike cheese, eggs lacked flavor.
	Subway Egg White and Cheese Muffin Melt	2.00	●	150	3.5	480	5	Flavorful egg whites; tasty, well-melted cheese; muffins sometimes tasted stale, cardboardy.
	Dunkin' Donuts Egg White Turkey Sausage Wrap	1.42	○	150	5	400	1	Lots of tasty cheese; eggs lacked flavor; sparse sausage bits.
	Starbucks Turkey Bacon & White Cheddar Classic	2.95	○	320	7	700	3	Saucelike cheese; paper-thin smoky bacon with no meat flavor; variable muffin texture.

BY THE NUMBERS

Most nutritious of 106 sandwiches

To mix food images, breakfast sandwiches are not peas in a pod. Choose the least-healthy option and you’ll make a big dent in—or even exceed—the generally recommended daily limits for calories (2,000), fat (65 grams), and sodium (2,300 milligrams). The toll for Subway’s Footlong Sausage & Cheese: 1,210 calories, 71 grams fat, and 2,820 milligrams sodium. Nutrition numbers are from restaurant websites.

NUTRITION RANGE

Calories: 150 to 1,210

Fat: 3.5 to 71 grams

Sodium: 340 to 3,270 milligrams

Fiber: 0 to 11 grams

NUTRITION RATINGS

VERY GOOD

Subway Muffin Melts:

Egg White & Cheese (with or without Bacon, Ham, or Steak); Egg & Cheese (with or without Ham)



GOOD

Dunkin’ Donuts Wraps:

Egg White Turkey Sausage, Veggie, or Western; Egg & Cheese



Starbucks Sandwich:

Turkey Bacon & White Cheddar Classic



Starbucks Wraps:

Chicken Sausage; Spinach, Feta & Egg White

Subway Muffin Melts:

Steak or Bacon, Egg, and Cheese; Breakfast BMT with Egg or Egg White

Subway Mornin’ Flatbreads:

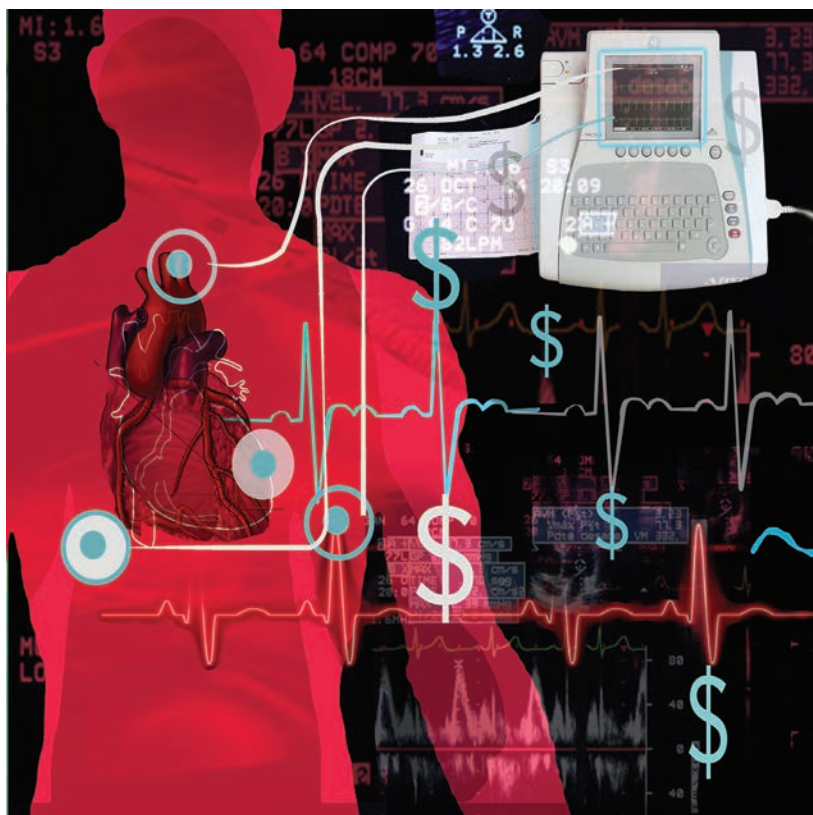
Egg or Egg White & Cheese (with or without Bacon, Ham, or Steak)

Subway Subs: Sunrise Melt with Egg or Egg White

Common tests and treatments you probably don't need

The problem has become so serious that such groups as the American College of Physicians, the National Physicians Alliance, and a coalition of medical societies in a project called Choosing Wisely have compiled lists of tests and treatment doctors themselves say are done too often. Below are our top five examples culled from those lists. (For more information, go to ConsumerReports.org/cro/ChoosingWisely.)

The costs: An EKG typically costs about \$50 and an exercise stress test about \$200



When to consider the tests: An EKG and exercise stress test should often be ordered if you have chest pain, an irregular heartbeat, or other symptoms of heart disease. They can also make sense for people with diabetes or other coronary risk factors who are just starting to exercise.

The problem: Getting an X-ray, CT scan, or MRI can seem like a good idea. But back pain usually subsides in about a month, with or without testing. Back-pain sufferers in a 2010 study who had an MRI within the first month didn't recover any faster than those who didn't have the test—but were eight times as likely to have surgery, and had a five-fold increase in medical costs.

When to consider the tests: They often make sense if you have nerve damage, or signs of a serious underlying condition. Red flags can include a history of cancer, unexplained weight loss,

recent infection, loss of bowel control, urinary retention, or loss of leg strength.

3 CT scans and MRIs for headaches

The problem: Many people want a CT scan or MRI to see if their headache is caused by a brain tumor or other serious illness. And doctors often comply to provide reassurance and to avoid lawsuits. But all that's usually needed is a careful medical history and neurological exam. Adding a CT scan or MRI rarely helps.

The risks: Brain scans can reveal things that appear worrisome but aren't. For example, doctors might mistake a twist in a blood vessel for an aneurysm. Those findings can trigger follow-up tests, and prompt referrals to specialists for expensive consultations. And CT scans of the head can deliver a radiation dose that's the equivalent of 15 to 300 chest X-rays.

The costs: A standard brain CT scan costs about \$340, and a brain MRI about \$660. Referrals to a specialist or subsequent treatment is extra, of course.

When to consider the tests: They're often warranted if you have an abnormal result on a neurological exam, or if your doctor can't diagnose the problem based on your symptoms and medical exam. See a doctor if you have head pain that is sudden or explosive; different from headaches you've had in the past; brought on by exertion; or accompanied by fever, a seizure, vomiting, loss of coordination, or a change in vision, speech, or alertness.

4 Bone-density scans for low-risk women

The problem: Many women are routinely screened for weak bones with an imaging test called a DEXA scan. If it detects outright osteoporosis, the results can help you and your doctor decide how to treat the problem. But many people learn

Ask these questions

■ Do I really need this test or procedure?

The answer should be direct and simple. Tests should help you and your doctor decide how to treat your problem, and procedures should help you live a longer, healthier life.

■ **What are the downsides?** Discuss the risks as well as the chance of inaccurate results or findings that will never cause symptoms but may require further testing. Weigh the potential complications against possible benefits and the symptoms of the condition itself.

■ Are there simpler, safer options?

Sometimes lifestyle changes will provide all the relief you need.

■ **What happens if I do nothing?** Ask if your condition might worsen—or get better—if you don't have the test or procedure now.

■ **How much does it cost?** Ask whether there are less expensive alternatives, or generic versions of brand-name drugs.

they have only mild bone loss, a condition known as osteopenia, and for them the risk of fracture is often quite low.

The risks: A diagnosis of osteopenia often leads to treatment with such drugs as alendronate (Fosamax) and ibandronate (Boniva), which pose numerous risks. Those include thigh fractures, throat or chest pain, difficulty swallowing, heartburn, and more rarely, bone, eye, joint and muscle pain, bone loss in the jaw, and possibly, abnormal heart rhythm. But there is little evidence that people with osteopenia benefit from the drugs.

The costs: A DEXA scan costs about \$132. The price for a month's supply of generic alendronate is \$38 to \$70, and \$125 to \$148 for Fosamax, the brand-name version. People often take the drugs for years.

When to consider the test: Women should have the scan at age 65 and men at age 70. Younger women and men ages 50 to 69 should consider the test if they have risk factors such as a fracture from minor trauma, rheumatoid arthritis, low body weight, a parent who had a hip fracture, or if they have used corticosteroid drugs for a long time, or they drink excessively or smoke. Whether follow-up tests are needed depends on the results of the initial scan.

5 Antibiotics for sinusitis

The problem: People with sinusitis—congestion combined with nasal discharge and facial pain—are often prescribed antibiotics. In fact, 15 to 21 percent of all antibiotic prescriptions for adults are to treat sinusitis. But most people don't need the drugs. That's because the problem almost always stems from a viral infection, not a bacterial one—and antibiotics don't work against viruses.

The risks: About one in four people who take antibiotics report side effects, such as a rash, dizziness, and stomach problems. In rare cases, the drugs can cause anaphylactic shock. Overuse of antibiotics also encourages the growth of bacteria that can't be controlled easily with drugs. That makes you more vulnerable to antibiotic-resistant infections and undermines the usefulness of antibiotics for everyone.

The costs: Not all antibiotics are expensive, but since doctors write so many prescriptions for them, the total cost to the health-care system is substantial—at least \$31 million a year.

When to consider antibiotics: Usually only if symptoms last longer than a week to 10 days or they are accompanied by a high fever or other possible signs of a bacterial infection.

Why do doctors provide unnecessary care?

One reason is that patients, motivated perhaps by an ingrained belief that more care is always better care—not to mention ads from drug companies—ask for it. And all too often doctors comply, in part because it's faster and easier than explaining why a test or drug might not be a good idea.

Of course, doctors have other motivations, too, including financial ones. For example, research suggests that those who invest in

imaging equipment order more CT scans and MRI tests than doctors who haven't made the investment. Some doctors say they practice aggressively to protect themselves from lawsuits. More than 80 percent of primary-care doctors in our 2010 survey said the need to practice defensive medicine interfered with their ability to provide optimal care.

A reason doctors are less likely to own up to: It's hard to kick bad habits. But researchers say

that doctors often embrace evidence that reinforces their practice style while ignoring evidence that conflicts with it. For example, results from a trial published in 2007 found that angioplasty—an invasive procedure—worked no better than drugs plus lifestyle changes for people with stable heart disease. But several years later a study found that most doctors still chose angioplasty without giving those simpler, less expensive steps a shot first.

Don't get dinged by overdraft fees

HIGH-PROFILE HIKES in checking-account fees by big banks have drawn more attention recently than overdraft charges, those sneaky debit-card fees that can add \$35 to the cost of a \$3 cup of coffee. Despite federal rules on overdraft fees that went into effect in 2010, banks are still pulling in billions of dollars from them.

That's because many bank customers have opted in to overdraft-protection programs, which allow you to use your debit card for purchases even if you don't have enough money in your account to cover the payment. Each overdraft incurs a fee of about \$30 to \$35. Under the 2010 regulations, banks must ask you to choose overdraft protection rather than enroll you automatically. (If you opt out, you can still be charged a fee if an overdraft occurs from a check you've written, an online payment, or an automatic recurring debit.)

Banks aggressively market overdraft protection to customers. A 2011 survey of checking-account holders by the Center for Responsible Lending found that 33 percent had opted in, and many said they did so to avoid fees. Moebs Services, an independent financial-research company in Lake Bluff, Ill., surveyed banks in 2011 and found a much higher opt-in rate: 77 percent. Last year, Moebs says, banks took in \$31.6 billion in overdraft fees.

\$120 mistake, \$506 in fees

In February the federal Consumer Financial Protection Bureau announced it was looking into overdraft programs. It is focusing on the practice of processing daily checking transactions—checks, bill payments, debit-card purchases, and ATM withdrawals—in order of size, starting

with the largest first. An account can be quickly drained, and banks can maximize the number of overdraft fees.

A 2010 class-action lawsuit against Wells Fargo in California, which resulted in an order that the bank pay \$203 million in restitution to customers, highlighted how overdraft fees can spin out of control. One plaintiff, Erin Walker, an 18-year-old who had just opened her first bank account, was charged \$506 in fees over a one-week period for an overdraft of about \$120. Wells Fargo did that in part by ordering her transactions so that most of them—purchases of about \$4 to \$5 at places like Starbucks and Jamba Juice—were posted after larger purchases. Wells Fargo is appealing the decision.



The CFPB is seeking comment from consumers on how they've been affected by bank practices, including transaction reordering and the terms of overdraft programs, and how they're communicated. The agency is also seeking feedback on a "penalty fee box" that would appear on checking statements containing overdrafts. Go to consumerfinance.gov to weigh in.

What you can do

Here's how to avoid overdraft fees:

Decline overdraft protection. If you've already signed up, you can contact your bank to opt out. Your debit card will be declined if you exceed your balance, but you won't get hit with overdraft fees.

Link your accounts. Ask your bank to link your savings to your checking account for overdraft protection. You might get hit with a transfer fee, but it's generally lower, about \$5 to \$10.

Consider an overdraft line of credit. Any overdrafts will be covered by the line of credit. They will incur interest but you'll probably pay less than overdraft fees.

Budget better. Sign up for e-mail or text alerts to know when your account balance falls to a certain level. Balance your checkbook regularly, and keep track of all checks you have written, debit transactions, automatic bill payments, and direct deposits.

Goodbye, free checking

Of the 10 biggest consumer banks in the U.S., only PNC and Ally Bank still offer a no-monthly-fee checking account. Other banks are tacking on new charges or imposing tougher conditions for fee waivers:

❑ **Wells Fargo** added a \$7-per-month checking-account fee to customer accounts in six states in May, after imposing similar fees in 24 states last year. Customers who maintain a balance of \$1,500 or make \$500 or more in direct deposits monthly get a

fee waiver; those who accept paperless statements will have it knocked down to \$5.

❑ **Bank of America**, which rolled back plans for a \$5 monthly debit-card fee last year, is testing new checking-account fees in Arizona, Georgia, and Massachusetts.

❑ **Citizens Bank** doubled its monthly fee from \$5 to \$10 on its Green Checking in April, which customers can avoid by maintaining a \$1,500 balance or making five qualifying transactions each month.

SAFETY ALERTS

RECALLS

AUTOMOBILES

'05-'09 Toyota Tacoma

Steering-wheel vibration over time may damage the assembly that powers the driver's air bag in some Tacomas made from Sept. 14, 2004, through Aug. 29, 2008. If that happens, the air bag warning lamp will illuminate and the air bag may not deploy in a crash.



MODELS 495,470 Tacomas.

WHAT TO DO Dealer will replace the recalled assembly at no charge. Call Toyota at 800-331-4331 for details.

'09-'12 Subaru Forester

The automatic locking retractor in the rear center safety belt may not permit proper installation of a child-restraint device in certain Foresters made from Nov. 26, 2007, through March 13, 2012. As a result, a child may be injured in case of a crash.



MODELS 275,000 Foresters.

WHAT TO DO Dealer will replace rear center safety belt assembly at no charge. Call Subaru at 800-782-2783 for details.

HOUSEHOLD PRODUCTS

American Tack & Hardware LED night-light

Short circuit can cause overheating and smoldering or melting, with fire hazard.



PRODUCTS 227,000

AmerTac night-lights sold nationwide from March 2009 through October 2010 for about \$6. AmerTac has had 25 reports of lights smoking, burning, melting, and charring.

WHAT TO DO Remove light from wall socket and call AmerTac at 800-420-7511 or go to recall-center.com for details on a full refund.

CHILDREN'S PRODUCTS

Safety 1st Push 'N Snap cabinet locks

A child can disengage the lock and get access to the cabinet contents.

PRODUCTS 900,000 Safety 1st Push 'N Snap cabinet locks with model numbers 48391 and 48442, sold from January 2004 through February 2012 for \$2 to \$4.



WHAT TO DO Store items from the cabinet in a safe location until you get a free lock replacement from the importer, Dorel. Call 866-762-3212 or go to djgusa.com for details.

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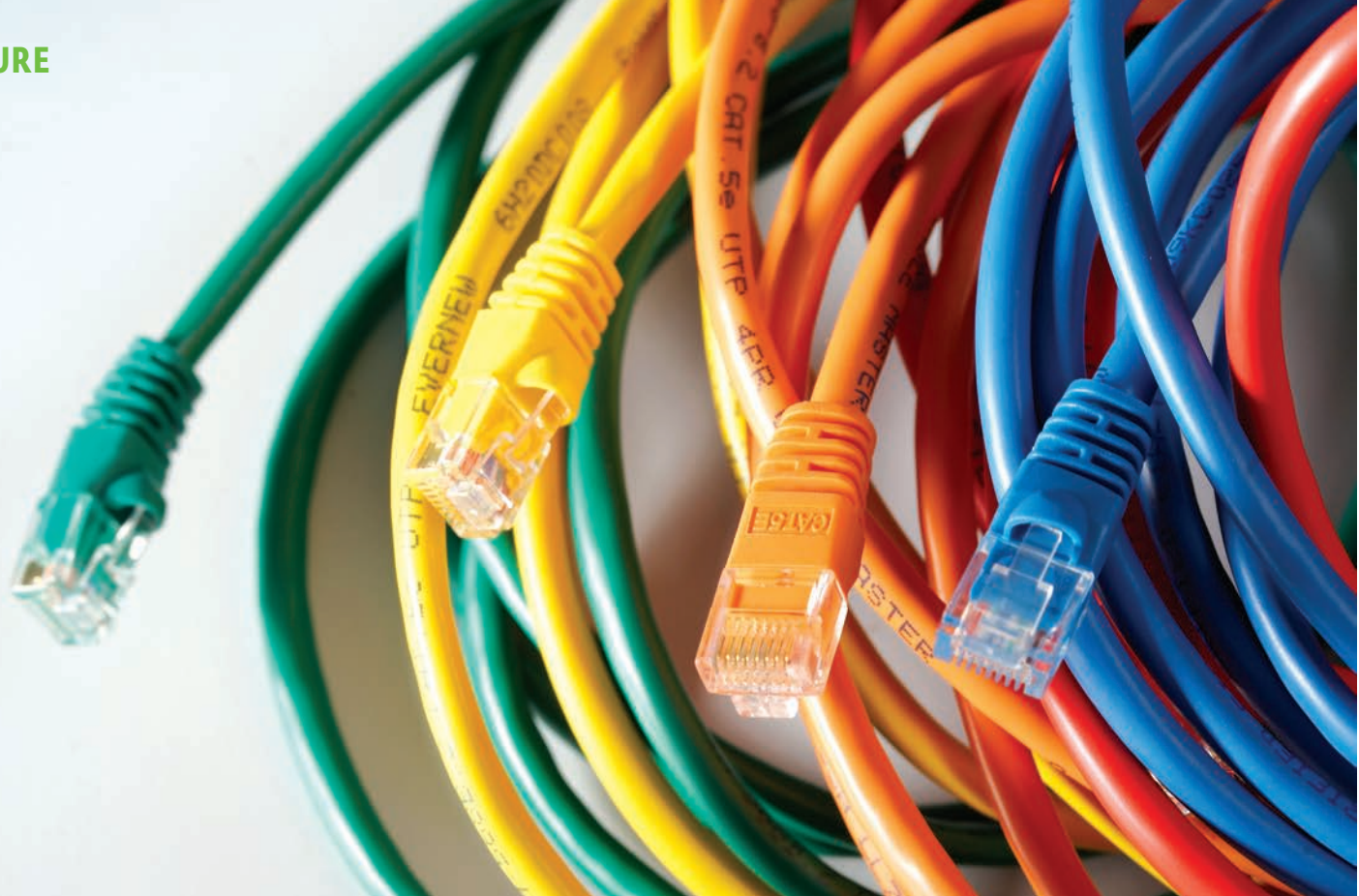
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Cut your telecom bill

And 69,000 readers reveal the best TV, Internet, and phone providers

MANY OF US love to hate our home telecom provider. In our latest survey, our readers once again ranked telecom services as less satisfying than most other services we rate. Yet there were a few companies that managed to please subscribers for TV, Internet, and home phone. Trouble is, it's unlikely they serve your area.

Case in point: One of the best providers in our Ratings is a regional cable company you may not have heard of—WOW, which serves four Midwestern states. It was among the top-rated providers for TV, Net, and phone and for bundles of all three services.

Then there's Verizon FiOS, another of the top services, available in portions of 12 mostly Eastern states; Washington, D.C.; southern California; and Texas. Verizon is the only major provider that runs its high-speed fiber-optic network all the way to your house rather than switching to bandwidth- and speed-limiting copper wiring at a neighborhood "node" as many

cable companies do and AT&T U-verse typically does. FiOS's "bigger pipe" may help explain its top ratings for TV picture quality and Internet speed.

Unfortunately, even in regions where Verizon already operates, it has stopped or slowed down wiring new neighborhoods for FiOS. So if it hasn't yet made it to your doorstep, chances are it won't this year.

Further, consumer advocates fear Verizon may have less incentive to compete with cable companies now that it has entered into partnerships with Comcast and Time Warner Cable, among others. The cable companies would give Verizon unused wireless spectrum for its cell-phone network, and Verizon and the cable companies would market each other's services through bill mailings, stores, and more. Consumers Union, the advocacy arm of Consumer Reports, opposes the deals, which are now under regulatory review.

Though you might not be able to get FiOS, one of the highly rated small cable companies, or local alternatives such as

the innovative utility service in Chattanooga, Tenn. (see sidebar), you can still level the playing field with providers and deal from a position of power. Our report outlines five strategies you can use to help you get the best service and biggest savings in telecom.

For maximum flexibility, try to avoid signing a contract with early-termination penalties, which will limit your ability to

BY THE NUMBERS

24%

Percentage of readers surveyed who don't have home phone service. The leading reason cited by those who dropped it in the past two years was that they didn't use their home phone at all or enough to justify the cost.

negotiate rates or switch providers. Some providers require a contract, so you're stuck. But others give you the option of a contract-free plan, usually at a slightly higher rate. It's worth paying a little more to maintain your bargaining power.

Get ready to bargain

Seven out of 10 readers with a triple play didn't even try to bargain on their telecom bills. Yet of those who did, more than 90 percent got some accommodation. They were more likely to get a break on bundles from cable companies and phone companies' fiber services than on hybrid bundles (of DSL, phone, and satellite TV).

Price reductions led the list of concessions, with around 40 percent of bargainers reporting savings of up to \$50 a month. About 30 percent had fees for installation or activation waived, and 30 percent or so said they got free premium channels. Be sure to cancel the freebie channels after the trial period ends or they'll continue with a monthly fee.

Hagglers' experiences suggest that it can pay to let your provider know you're ready to drop some or all of its services. Survey respondent Elvis Wright of Lubbock, Texas, got his cable company, SuddenLink, to take back \$8 of a \$10 general price increase in his monthly bill by threatening to cut out some services. You can also tell your provider you'll consider switching to a rival service, even if you'd really prefer to stick with the status quo.

Push back when rates rise

Readers gave some companies, including Verizon FiOS and Cox, high marks for limiting price increases after a promotional rate expired. But others (notably Cablevision and Comcast) hiked rates considerably, survey respondents reported. If your provider's rates soar after a deal ends, push back. Use competition among providers to your advantage. Though you might not have another cable choice, satellite TV serves all but a few parts of the country, and Verizon FiOS or AT&T U-verse is an option in about one-third of the U.S.

Be prepared for resistance from your TV provider, though. Companies are increasingly keeping track of the promotions they give you and offering smaller discounts when you ask them for another break. "We have a very well-choreographed program for moving people from the most heavily discounted promos into the rational next-step pricing packages," says Rob

Breaking news: TV viewers held hostage

When cable, satellite, and telephone company TV carriers have a business dispute with content providers, why should consumers suffer?

Already this year, contract fights between Time Warner Cable and the MSG sports network, DirecTV and Sunbeam Television, and Verizon FiOS and Newport Television blacked out—or threatened to—local news, sports, and network programming for subscribers from Boston and New York City to Harrisburg, Pa., and Miami. Last year there were channel blackouts in more than 30 markets, says Philip Napoli, director of Fordham University's Donald McGannon Communication Research Center.

The outages stem from a rising number of fights over fees TV providers should pay to carry networks. Consumers are caught in the crossfire. In a recent MSG-Time Warner dispute in New York City, viewers not only lost access to broadcasts of New York Rangers games for a month but also were subjected to dueling newspaper ads urging them to express displeasure to the other company. During the dispute Time Warner offered free access to a premium sports package, which (you guessed it) didn't include Rangers games.

When consumers lose paid-for channels, Napoli points out, "they don't get refunds from the TV service provider, and customers are starting to ask why not."

Marcus, president of Time Warner Cable. "Over time, that discount will decrease, but you'd probably still save 20 to 30 percent off the rack rate," or regular price.

Sometimes brinksmanship is your best strategy. A CONSUMER REPORTS staffer who'd gotten discounts from her cable

Verizon's all-fiber network might help explain its top-notch scores.

company for a few years in a row was denied yet another discount when her last promotion expired and the triple-play rate jumped to \$170 a month. She decided to switch to Verizon FiOS to save \$50 a month in the first year and \$30 the second. Before sealing the deal with Verizon, she called the cable company to ask how to disconnect. She was transferred to a "customer



So are we. Providers should be required to refund the portion of fees they save by not carrying blacked-out networks and be prohibited from exhorting subscribers to protest. Indeed, Consumers Union, the advocacy arm of Consumer Reports, is urging the Federal Communications Commission to create a new process for resolving disputes and require that the programming not be cut while the parties negotiate in good faith.

retention" specialist, who upgraded her to the next TV tier, which included Encore, Showtime, Starz, and a few other channels and cut her bill to \$140 a month.

"The magic word is 'cancel,'" says Philip Dampier, of the website StopTheCap.com. He suggests you schedule your disconnection date for a week or two in the future. "When you're on their disconnect list, they are going to start calling you offering very aggressive deals," he says.

Among readers who had changed TV providers in the previous six months, about one in three were offered new savings—in some cases \$20 or more a month—by their old provider if they didn't switch to a new company or decided to come back after switching.

But don't despair if there's only one provider in your area. Alan Curtis of Manchester, N.H., whose condominium is served only by Comcast, says his rates go up each year but he pushes back. "If you say, 'We'll have to buy less,' occasionally they'll come up with a cost-cutter that will

apply to you," he says. Similarly, a staffer who lives in a New York City apartment served only by Time Warner Cable more than offset a \$5 increase in his overall bill by negotiating an \$8-a-month cut in his DVR rental fee for 12 months.

Beware of such small, often stealthy increases. Carriers are "creative at adding a few bucks here and there" after promos expire, notes Arthur Gruen, president of Wilkofsky Gruen Associates, a telecom industry consulting firm. Watch for letters notifying you of rate changes, and check statements periodically. Compare them with previous bills so that you'll detect even minor increases that might escape notice.

Don't overbuy on Internet

The data speed of your Internet service affects how quickly you can send and receive files, how smoothly content (especially video) streams and at what resolution, and the ability to play interactive games on the Web. Yet eight out of 10 consumers don't even know what speed they're getting from their Internet service provider, according to the Federal Communications Commission.

Speeds (measured in megabits per sec-

ond, or Mbps) have generally been rising for standard service, sometimes without a rise in rates. Many cable providers have upped their standard speed in recent years, as have the AT&T U-verse and Verizon FiOS high-speed phone-company services. But cable companies and high-speed phone services increasingly offer a num-

Carriers may push higher speeds than you need.

ber of step-up speeds as premium features. Here's our advice on what you need:

Light usage. You typically have only one or two users at a time e-mailing, Web surfing, downloading short, standard-definition videos, and playing simple online games such as Farmville. File uploads, such as low-resolution photos, are small.

Recommended: speeds of up to 3 Mbps. That's available from DSL, satellite, and wireless broadband service.

Moderate usage. One or two simultaneous users is the norm, with three online at times. Video streaming is common, in-

cluding some in HD, from such Net services as Vudu and iTunes, and you can accept occasional quality compromises due to limited bandwidth. You might play two-way HD games, use an online backup service, or occasionally upload high-resolution photos to the cloud.

Recommended: 6 to 12 Mbps. That's standard for most cable companies and with some AT&T U-Verse packages.

Heavy usage. The number of users, data demands, or both, is high. Up to four people may be online at once, with some using a tablet or smart phone. Some may stream HD video or play HD games and demand good quality. A serious photographer or videographer who accesses the cloud might be among the users.

Recommended: at least 15-Mbps service. That's standard for a few providers, such as Verizon FiOS and Cablevision, and available as a step-up from others, including AT&T's Max Turbo service.

Keep in mind that speeds aren't always as claimed. An FCC study released last year, involving speed measurements by 6,800 customers of the 13 largest Internet providers, suggests that carriers deliver the promised speed most of the time. But some underperformed, especially during the peak hours of 7 p.m. to 11 p.m., when speeds could be 5 to 10 percent lower than the 24-hour daily average. You can gauge your own speed at broadband.gov/qualitytest.

DSL providers as a whole sustained download speeds during peak hours that met only 82 percent of claims—a concern, given that their speeds are on the low side. Frontier DSL, which had relatively low reader scores, delivered only 67 percent.

Cable companies overall met promised speeds more than 90 percent of the time. Cablevision delivered only 50 percent of advertised speed for its standard 15-Mbps service and 69 percent for its 30-Mbps service. But readers gave it high marks for speed, perhaps because its standard speed is more than users generally need.

Verizon FiOS aced the FCC tests, exceeding the claimed speed for every level of service measured, including its 35-Mbps offering, with barely any fluctuation at various times during the day. Unsurprisingly, its speed score with readers was a standout.

Satellite-based Internet service from HughesNet and WildBlue received two of the lowest scores for speed in our survey. ViaSat, which no longer sells WildBlue service to new subscribers, said it has

Grassroots groups bring fiber to more homes

Chattanooga, Tenn., is probably not the first place you'd expect to find one of the nation's fastest telecom providers. Yet the 1-gigabit-per-second service from the quaint-sounding Electric Power Board (EPB) is one of a host of groundbreaking efforts to provide fiber-optic networks with faster speeds and higher capacity than even those of Verizon FiOS, the biggest "Fiber to the Home" provider. Google is building an "ultra-high-speed fiber network" in Kansas City, and some 700 smaller providers all over the U.S. have already deployed FTTH networks.

AT&T declined the Chattanooga mayor's request to build an FTTH network. Comcast, which also serves the city, and the state cable association even sued (unsuccessfully) to block the EPB. The Tennesseans eventually delivered their own FTTH service, including TV and phone, by piggybacking onto an existing fiber-optic smart grid the power board had built to manage its electrical service.

Most of the 35,000 Chattanooga homes with EPB Internet service don't buy the 1-Gbps speed, opting instead for



the standard 30 Mbps, which we believe is more than most households need. The \$58-a-month cost is steep but less expensive than similar services elsewhere.

The network futureproofs Chattanooga against the day when there will be new, more-bandwidth-intensive services—ultra-high-definition video signals and uses that haven't even been invented yet. So see what local options you may have or push your electric utility to get in the game.

boosted data download speeds to as much as 12 Mbps since we surveyed our readers.

AT&T, Clear, and Verizon wireless broadband services (all used by some readers as their main home Internet service) rated about as well as DSL on speed—only middling. AT&T and Verizon charge at least \$50 a month for 5GB of data; streaming just one HD movie can eat up 4GB. Each 1GB overage costs \$10. Clear promises unlimited data but says it may throttle speeds on heavy users at some times.

Monthly data limits are quietly popping up on more home Internet plans. The lowest we found was 30GB per month on the Cox Starter plan. Comcast sets its cap at 250GB and says 99 percent of its residential customers use only 8 to 10GB a month. Still, be mindful of data limits, especially if you stream a lot of video online.

Look to phone for savings

More than half of CONSUMER REPORTS subscribers use Internet-based phone service (including VoIP, cable, and fiber-based phone services) instead of a traditional landline. Ooma, a VoIP service, was one of the top-rated phone services of any type in our survey, and it's available nationwide. Ooma equipment is pricey, at \$200 and up, but unlimited domestic calling is free (though you pay \$3.50 a month in taxes) and international rates are rock-bottom.

Vonage, another highly rated national VoIP service, requires a small adapter hooked up to a phone and an Internet connection. A \$12-a-month plan with 300 local and long-distance minutes and free incoming calls should suffice for many households as their home phone service.

MagicJack, which plugs into a computer's USB port and serves as a phone jack, was tops for value but had low scores for quality and reliability. It costs \$40, including a year of unlimited domestic calls; an additional year costs \$30. (MagicJack Plus doesn't require a computer.)

But bundling prices are complicated, and dropping phone service from a triple-play package might not save you much. Check to see whether it's worth it.

With all Internet-based phone options, including digital phone service from a cable company, you run the risk of losing service—including emergency 911 calls—if power or broadband service fails. Cable-company and fiber-based VoIP services offer battery backup, but for only 8 hours. Some services provide a free battery; oth-

ers charge up to \$40. Ooma, MagicJack, and Vonage don't have such backup. That might make a cell phone your only option in an emergency, provided it works at home (cell-phone 911 service is reliable, another of our surveys found).

AT&T and Verizon also offer a \$5-a-month discount if you use their cellular services to replace the home phone part of a triple-play package, and \$10 a month off if you bundle a cell plan and a home triple-play into a quad-play package. How long those discounts apply varies. Forty-seven percent of those with a quad-play bundle judged it to be a very good or excellent value, higher than for any other bundle we asked about.

Downsize your TV service

Only about 9 percent of our readers didn't receive TV programming from a cable, satellite, or phone-company provider. If you want such service but prefer to pay less:

Apps let you watch TV on your iPad

Many TV providers now offer apps that let subscribers view programming on the Apple iPad, sometimes on the iPhone or iPod Touch, and occasionally on Android devices. Some limit you to video-on-demand viewing, though others such as Cablevision and Time Warner let you stream live TV. (Others promise live TV viewing soon.) Most also limit iPad viewing to home.

Many listed providers—and others who lack their own apps, such as Verizon FiOS—support iPad apps from partner cable networks such as HBO, Showtime, CNN, and ESPN. Whether you have paid TV service or not, you can download free mobile apps for broadcast networks such as PBS and ABC that allow iPad viewing.

A few caveats: The satellite providers require that you have an HD DVR (DirecTV) or a \$99 Sling adapter (Dish) to



stream video. And the data that mobile apps use, which is considerable, count against the monthly data caps from Cox and Comcast. With any provider, using your iPad or iPhone on a cellular network counts toward your wireless data cap.

Provider & app	Live channels	Video on Demand	Away from home	iPhone/iPod Touch
Number (approx.)				
AT&T U-verse App	0	✓	✓	✓
Cablevision Optimum	All channels in your TV package	✓		✓
Comcast Xfinity TV	0*	✓	✓	✓
Cox TV Connect	30			
DirecTV iPad App	49			
Dish Network Remote Access	All channels in your TV package plus DVR recordings	✓	✓	✓
Time Warner Cable TWC TV	Up to 200			✓

*At press time a trial of live TV via the app was under way in Denver and Nashville.

Go basic. The recession and the threat of online TV sources have pushed cable and satellite TV providers to offer, albeit quietly, economy TV services costing \$25 to \$35 for local channels and about 20 basic TV channels including CNN, E!, and Discovery but not ESPN. That might be enough for you, especially if you combine TV service with other options for getting video onto your TV set, including streaming services such as Netflix, Hulu, VuDu, and Amazon Instant Video (which we plan to cover in an upcoming survey report on alternatives to regular TV service).

Drop the DVR. Programs you often record might be available at no cost via your provider's video-on-demand (VOD) or "start over" and "view later" features, allowing you to save \$6 to \$20 a month.

Go back to free TV from an antenna. Over-the-air signals from ABC, CBS, NBC, and PBS are all digital and mostly HD.

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FEATURE TELECOM BUNDLING

Overview

Here are our recommendations. Note that for all options except regular phone service, you need a battery backup to avoid losing your phone during a power outage. Some companies provide one at no charge.

BEST CHOICES OVERALL WOW

Verizon FiOS

Superior scores make FiOS or the regional carrier WOW worth serious consideration for all services if they're available in your area. Verizon scored higher than the major cable companies for TV picture, sound, and channel selection and received our highest mark for Internet speed. But you must rent a receiver for every TV, which all cable companies may not require. And FiOS had more complaints than most about bills for triple play.

THE NEXT-BEST CHOICES FOR MANY HOUSEHOLDS

A highly rated cable company

AT&T U-verse

If AT&T U-verse, Bright House Networks, Cox, or Cablevision/Optimum serves

your area, any is the next-best alternative to Verizon FiOS for triple-play service. Cable doesn't always require as much of an investment in special equipment, though Cablevision is among the few major companies that charge extra for battery backup so that you don't lose service in a power outage.

IF TV IS PARAMOUNT AND THERE'S NO BETTER OPTION FOR IT

DirecTV or Dish Network

The satellite-TV providers received high scores for TV picture, sound, and channel selection. But hybrid bundles combining DirecTV with DSL Internet and landline service from telephone providers were otherwise undistinguished. They had more problems than average with billing and coordinating support for the different services. With analog copper-based service, you don't need battery backup to preserve phone service during power outages. But readers were generally less satisfied with the speed of DSL Internet service than with cable. Satellite requires a dish and other equipment, usually free or discounted in exchange for a contractual commitment.



Ratings Bundled telecom services

In order of average reader score for Internet, phone, and TV services.

Order	Service provider	Type	Average reader score: Internet, phone, and TV	Survey results					
				Would bundle again	Value	Billing	Support	Added fees	Price after promotion
			0	100					
1	WOW	cable	81	●	●	●	●	●	-
2	Verizon FiOS	fiber	77	●	○	●	○	○	●
3	Bright House Networks	cable	74	●	○	●	○	●	●
4	SuddenLink	cable	73	○	○	○	○	○	-
5	AT&T U-verse	[1]	72	○	●	○	○	○	○
6	Cox	cable	71	○	●	○	○	○	●
7	Cablevision/Optimum	cable	69	○	●	●	○	●	●
8	CenturyLink [2]	hybrid	69	○	●	●	●	○	-
9	Verizon [2]	hybrid	69	○	●	●	●	●	-
10	AT&T [2]	hybrid	68	○	●	●	●	○	●
11	Time Warner	cable	67	○	●	○	○	○	○
12	Comcast	cable	65	○	●	○	○	○	●
13	Charter	cable	63	○	●	○	○	○	○
14	Mediacom	cable	59	○	●	○	○	○	-

[1] Phone-company service that combines fiber-optic and copper cabling, like some cable providers. [2] A hybrid plan: its own landline phone and DSL Internet, with satellite TV from a different provider. TV score used to calculate average reader score is from DirecTV.

Ratings Internet, phone, and TV service

In order of reader score, within services.

Better ← → Worse
● ● ○ ● ●

Internet service

Order	Provider	Type	Reader score*	Survey results					
				Value	Reliability	Speed	Phone/online	Support	In-home
			0						
			100						
1	WOW	cable	80	○	●	●	●	●	-
2	Verizon FiOS	fiber	77	○	●	●	○	○	○
3	Bright House Networks ^②	cable	73	●	○	○	○	○	○
4	EarthLink ^③	cable	73	○	○	○	-	-	-
5	TDS	DSL	72	○	○	○	-	-	-
6	Frontier	①	72	○	●	○	-	-	-
7	AT&T U-verse	①	71	○	○	○	○	○	○
8	EarthLink	DSL	71	○	○	○	-	-	-
9	Knology	cable	71	○	○	○	-	-	-
10	Cincinnati Bell	DSL	71	○	○	○	-	-	-
11	SuddenLink	cable	71	○	○	○	○	-	-
12	Cox	cable	70	●	○	○	○	○	○
13	Cable One	cable	70	●	○	○	-	-	-
14	Clear	mobile	69	○	○	○	-	-	-
15	Insight	cable	68	○	○	○	○	-	-
16	Cablevision/Optimum	cable	68	●	○	○	○	○	-
17	Verizon	mobile	68	●	○	○	○	-	-
18	CenturyLink	DSL	67	●	○	○	○	-	-
19	Time Warner ^②	cable	67	●	○	○	○	○	○
20	Windstream	DSL	66	●	○	○	○	-	-
21	Verizon	DSL	66	●	○	○	○	○	-
22	AT&T	mobile	65	●	○	○	-	-	-
23	AT&T	DSL	64	●	○	○	○	○	○
24	Frontier	DSL	64	●	○	○	○	-	-
25	RCN	cable	64	●	○	○	-	-	-
26	Comcast	cable	63	●	○	○	○	○	○
27	Charter	cable	61	●	○	○	○	○	○
28	FairPoint	DSL	60	●	○	○	-	-	-
29	Mediacom	cable	57	●	○	○	○	○	-
30	WildBlue	satellite	50	●	○	○	-	-	-
31	HughesNet	satellite	47	●	○	○	○	○	-

*Differences in reader score of less than 6 points are not meaningful. ① Phone-company service that combines fiber-optic and copper cabling, like some cable providers. ② Using Road Runner service. ③ On the Time Warner system.

Guide to the Ratings

Ratings are based on 51,151 respondents with a home Internet account, 54,043 with TV service, and 43,884 with phone service, all of whom completed the Consumer Reports Annual Telecom Survey online in spring 2011. Respondents were CONSUMER REPORTS subscribers and might not represent the general population. Providers are those for which we had sufficient data to score the service. **Type** is delivery technology including, for phone service, Voice over Internet Protocol (VoIP) and traditional landline service. **Reader score** reflects overall satisfaction and is not limited to the factors listed under survey results. A score of 100 would mean all respondents were completely satisfied; 80, very satisfied, on average; 60, fairly well satisfied; 40, somewhat dissatisfied. **Survey results** reflect average scores on a scale from very poor to excellent: **value** for money, service **reliability**, and the other specific performance attributes for the various services. A “-” indicates that there was insufficient data to provide a score. The data in the **bundled telecom services** Ratings is based on 15,714 respondents who bundled all three services. **Average reader score** is for Internet, TV, and phone service, as detailed in the charts on this page. Except for value, **survey results** are relative compared with the average of all providers. Those who **would bundle again** reflects the proportion who indicated that willingness. High scores for **price after promotion** indicates that rates did not increase significantly after an initial promotional period. Low scores indicate the following problems: **Billing**, bills that were difficult to understand or had errors; **support**, the need to contact different help lines or getting inconsistent help for different services in the bundle; and **added fees**, any charges that raised bills unexpectedly.

Phone service

Order	Provider	Type	Reader score*	Survey results				
				Value	Reliability	Call quality	Support	
			0					
			100					
1	Ooma	VoIP	87	○	○	○	-	-
2	WOW	VoIP	86	○	○	○	-	-
3	SuddenLink	VoIP	80	○	○	○	-	-
4	Verizon FiOS	fiber	79	○	○	○	○	○
5	Vonage	VoIP	79	○	○	○	○	○
6	Bright House Networks	VoIP	78	○	○	○	○	○
7	Cox	VoIP	76	○	○	○	○	○
8	TDS	land	76	○	○	○	-	-
9	Cablevision/Optimum	VoIP	75	○	○	○	○	○
10	AT&T U-verse	①	75	○	○	○	○	○
11	Cincinnati Bell	land	75	○	○	○	-	-
12	RCN	VoIP	73	○	○	○	-	-
13	Frontier	①	73	○	○	○	-	-
14	Insight	VoIP	73	○	○	○	-	-
15	Windstream	land	72	○	○	○	○	○
16	Time Warner	VoIP	72	○	○	○	○	○
17	Comcast	VoIP	70	○	○	○	○	○
18	MagicJack	VoIP	70	○	○	○	-	-
19	CenturyLink	land	70	○	○	○	○	○
20	Verizon	land	70	○	○	○	○	○
21	Charter	VoIP	69	○	○	○	○	○
22	AT&T	land	69	○	○	○	○	○
23	FairPoint	land	69	○	○	○	-	-
24	Frontier	land	69	○	○	○	○	○
25	Mediacom	VoIP	65	○	○	○	-	-

*Differences in reader score of less than 5 points are not meaningful. ① Phone-company service that combines fiber-optic and copper cabling, like some cable providers.

TV service

Order	Provider	Type	Reader score*	Survey results						
				Value	Reliability	Channel selection	Picture	Sound	Phone/online	Support
			0							
			100							
1	WOW	cable	78	○	○	○	○	○	○	-
2	Verizon FiOS	fiber	76	○	○	○	○	○	○	○
3	AT&T U-verse	①	71	○	○	○	○	○	○	○
4	Bright House Networks	cable	71	○	○	○	○	○	○	○
5	DirecTV	satellite	71	○	○	○	○	○	○	○
6	Dish Network	satellite	70	○	○	○	○	○	○	○
7	Cox	cable	68	○	○	○	○	○	○	○
8	SuddenLink	cable	67	○	○	○	○	○	○	-
9	Insight	cable	65	○	○	○	○	○	○	-
10	Cablevision/Optimum	cable	64	○	○	○	○	○	○	○
11	Time Warner	cable	62	○	○	○	○	○	○	○
12	RCN	cable	62	○	○	○	○	○	-	-
13	Comcast	cable	61	○	○	○	○	○	○	○
14	Charter	cable	58	○	○	○	○	○	○	○
15	Mediacom	cable	56	○	○	○	○	○	○	-

*Differences in reader score of less than 4 points are not meaningful. ① Phone-company service that combines fiber-optic and copper cabling, like some cable providers.



Protect yourself online

Facebook, phishing, ID theft, and more threaten online peace of mind

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CONSUMERS' PRIVACY has taken a big hit over the past year. Identity theft is up, according to our latest national State of the Net survey. Google and Facebook are expanding their reach into more and more corners of people's online lives. And clashes are escalating over hot-button issues such as privacy controls, data mining, and online piracy.

With some of those battles looming, a good way to start the discussion is with a sobering report from the Consumer Re-

ports National Research Center.

Almost 16 million households have become the victims of identity theft over the past year, up almost 50 percent, we project, based on our nationally representative survey of 2,002 respondents. Almost half of the victims—7.8 million—were notified that their personal information was hacked or lost by a company, government agency, or some other organization. That's more than double our projection a year ago.

The problem is far from theoretical.

About 7.4 million households reported that an unauthorized person placed charges on one of their existing credit-card accounts.

That trend is likely to persist this year, especially given the recent report by a major credit-card processor, Global Payments, that hackers broke into its computer systems and stole information on almost 1.5 million accounts. The company services major credit-card brands around the world, and it also handles debit cards, electronic check transactions, and similar services.

The incidences of e-mail spam and online users falling prey to “phishing” schemes, in which consumers are prompted to send personal information to a website or e-mail address masquerading as a legitimate one, have remained at about the same worrisome levels as we found last year. More than 9 million consumers have inadvertently submitted personal information to a phishing e-mail scam in the past 12 months, our study projects.

The privacy disruptions are causing real harm. When you tally up the damage, we estimate that 1.6 million households had to replace a computer and that the total national cost due to malware infections was almost \$2.3 billion.

This evidence of consumers’ online vulnerabilities comes at a time when Web behemoths Facebook and Google are under fire for data-collection practices that

critics say could infringe on consumer privacy and pose security risks. Both companies have settled allegations with the Federal Trade Commission, which requires them to undergo independent privacy audits for the next 20 years. And government officials on both sides of the Atlantic are proposing new online privacy rules aimed at giving consumers greater

A Privacy Bill of Rights could give consumers more safeguards.

control over how personal data about them is collected and used.

The urgent need to provide greater protection for consumers is underscored by the results of our survey, which this year included expanded coverage of Facebook to gain greater insight into people’s behavior on and attitudes toward the Internet’s most visited website. That’s especially important because your personal information is a key element of Facebook’s business: The more you share with friends and acquaintances, the more data Facebook has to slice, dice, and market. Early this year, the company laid the groundwork for an initial

public stock offering that was expected to raise billions to further expand its reach into the lives of consumers around the world.

The issues are gaining steam, with the White House proposing a Consumer Privacy Bill of Rights and getting many in the advertising industry to support the “Do Not Track” tools included in such Web browsers as Mozilla Firefox and Microsoft Internet Explorer.

The White House also proposes that companies provide consumers with control over their personal data through easily used and accessible tools that include the ability to withdraw or limit a consumer’s consent. And it says that consumers have a right to clear information about a company’s privacy and security practices, including what data the company collects, how it uses it, and for what purposes it may share it.

In this 11-page special report on privacy, we investigate what Facebook knows about you and explain how it collects information you didn’t even put on the website. And we’ll tell you why it’s easier for European consumers to find out what information Facebook has about them. We also rate the top security software and tell you why a free package may be your best choice. And we give you tips on how to keep control of your life online to give you help in the privacy wars.

State of the Net 2012

Internet threats continue at alarmingly high levels, costing consumers billions in damage, according to a representative survey of online households in the U.S. (Source: eMarketer) from the Consumer Reports National Research Center. Social-media usage was also up.

Facebook membership

59.6 MILLION

Households active on the social-media network in the past 12 months.

▲ TREND Up from last year.

Malware problems

29.9 MILLION

Homes that had at least one malware infection on a computer in the past 12 months.

▶ TREND Steady.

ID theft

15.9 MILLION

Households in which someone experienced ID theft in the past 12 months.

▲ TREND Up from last year.

‘Phishing’ schemes

9.1 MILLION

Households in which someone submitted personal information to a phishing e-mail scam in the past 12 months.

▶ TREND Steady.

Security breaches

7.8 MILLION

Households notified by a company, government agency, or other organization that personal information of someone had been stolen or lost in the past 12 months.

▲ TREND Up from last year.

Unauthorized charges

7.4 MILLION

Households that had charges placed on an existing credit card by an unauthorized person in the past 12 months.

▶ TREND Steady.



Facebook & your privacy

Who sees your data on the biggest social network

I F YOU'RE READING this page, chances are good you have a page on Facebook, too. More than 150 million Americans already use the site, and the number grows daily because Facebook makes it so easy to keep up with friends, family, and colleagues, discover great content, connect to causes, share photos, drum up business, and learn about fun events.

To deliver this service, Facebook and other social networks collect enormous amounts of highly sensitive information—and distribute it more quickly and widely than traditional consumer data-gathering firms

ever could. That's great when it helps you find old classmates or see ads for things you actually want to buy. But how much information is really being collected about you? How is it being used? And could it fall into the wrong hands?

To find out, we queried Facebook and interviewed some two dozen others, including security experts, privacy lawyers, app developers, and victims of security and privacy abuse. We dug into private, academic, and government research, as well as Facebook's labyrinthian policies and controls. And we surveyed 2,002 online

households, including 1,340 that are active on Facebook, for our annual State of the Net report. We then projected those data to estimate national totals.

The picture that emerges has bright spots but also many causes for concern, including the following:

Some people are sharing too much.

Our projections suggest that 4.8 million people have used Facebook to say where they planned to go on a certain day (a potential tip-off for burglars) and that 4.7 million "liked" a Facebook page about health conditions or treatments (details an insurer might use against you).

Some don't use privacy controls. Almost 13 million users said they had never set, or didn't know about, Facebook's privacy tools. And 28 percent shared all, or almost all, of their wall posts with an audience wider than just their friends.

Facebook collects more data than you may imagine. For example, did you know that Facebook gets a report every time you visit a site with a Facebook "Like" button, even if you never click the button, are not a Facebook user, or are not logged in?

Your data is shared more widely than you may wish. Even if you have restricted your information to be seen by friends only, a friend who is using a Facebook app could allow your data to be transferred to a third party without your knowledge.

Legal protections are spotty. U.S. online privacy laws are weaker than those of Europe and much of the world, so you have few federal rights to see and control most of the information that social networks collect about you.

And problems are on the rise. Eleven percent of households using Facebook said they had trouble last year, ranging from someone using their log-in without permission to being harassed or threatened. That projects to 7 million households—30 percent more than last year.

Some of these issues arise from poor choices users themselves make. But there is also evidence that people are treating Facebook more warily; 25 percent said they falsified information in their profiles to protect their identity, up from 10 percent two years ago. Other problems can stem from the ways Facebook collects data, how it manages and packages its privacy controls, and the fact that your data can wind up with people or companies with whom you didn't intend to share it.

Andrew Noyes, Facebook's manager of public policy communications, says the

How children fare on Facebook

Children under 13 aren't supposed to use Facebook. We project from our survey that the company closed about 800,000 such accounts in the last year.

But some 5.6 million underage kids still have accounts, our survey suggests. And 800,000 minors were harassed or subjected to other forms of cyberbullying on Facebook.

Our survey also shows that most parents who knew their preteen used Facebook had not discussed online threats with them or "friended" them, while up to a third did nothing to keep up with their children's Facebook activities.

► Targets: 11- to 13-year-olds

The least vigilant parents in our survey were those with children under 13 on Facebook.

"The kids most often targeted are 11- to 13-year-olds, because they're more naive and less likely to tell an adult about it," says Nils Frederiksen, a spokesman for the Pennsylvania Attorney General's Office. Its Child Predator Unit recently charged William Ainsworth, 53, with using phony Facebook identities to lure hundreds of girls as young as 11, whose profiles revealed that they were vulnerable because of trouble at home or school. Ainsworth allegedly solicited nude photos from some and arranged to meet for sex. He has pleaded not guilty.

Investigators interviewed more than 30 girls; almost all said they were using Facebook with little or no parental knowledge when they communicated with the predator. Most used cell phones or other mobile devices, making supervision difficult.

► An elusive solution

The Federal Children's Online Privacy Protection Act (COPPA) prohibits sites from collecting, using, or disclosing personal information from preteens without parental consent. The Federal Trade Commission proposed changes last year for children who use child-oriented sites, which include improving methods for securing parents' permission. Final recommendations are expected by year's end.

But the new rules wouldn't require sites with a more diverse audience, such as Facebook, to try to verify the age of someone who opens an account.

In a recent study published by the University of Illinois at Chicago, more than 80 percent of parents said they'd known when their underage child had signed up for Facebook. The study implied that one strong privacy standard for adults and children would be better than two, since with two policies kids may pretend to be older than they are.

Jeff Chester, a child-privacy advocate who led the campaign to enact COPPA, wants the FTC and Congress to consider a different option. He thinks Facebook should create a section for children under 13 and require opt-in parental permission, as COPPA requires.

We asked Facebook for its views about such an option. "We see ourselves as innovators, and believe it is time to focus on how to keep kids safe online and on Facebook, rather than on how to keep them off," a spokesman replied in an e-mail.

What you can do. If your young teenager wants to join Facebook, insist that he or she



ADVOCATE Colleen Cronin of East Hampton, Conn., says bullying on Facebook can turn physical, and urges schools to get involved.

"friend" you, says Colleen Cronin of East Hampton, Conn., who interceded when she found evidence of bullying among children in her son Cameron's Facebook network. Monitor kids' activity. Make sure that they really know their "friends" and that they set the audience for all wall postings to "friends" only.

company takes privacy and safety issues seriously. He pointed us to a blog posted last year by founder and CEO Mark Zuckerberg, who wrote, "We do privacy access checks literally tens of billions of times each day to ensure we're enforcing that only the people you want see your content." And Facebook has made efforts to respond to concerns. Even as this article went to press, the company announced that it would offer users greater access to records of their past Facebook activity.

But some critics worry that the very existence of such a massive repository of personal data demands extraordinary protections and controls. "Last time I checked, large corporate interests aren't allowed to trample on widely recognized fundamental rights just because their founders have invented some new, profitable privacy-busting product, yet that is exactly what

has happened to privacy rights over the past few years," charges James Steyer, founder of the children's-advocacy group Common Sense Media and author of the book "Talking Back to Facebook."

Almost 13 million Facebook users have never set privacy controls.

In the pages that follow, we examine the gap between these two viewpoints to see where the truth lies. We focus on Facebook because it is the world's largest social network, with 800-million-plus users, far more than competitors such as Google+ and LinkedIn. Facebook is also of

interest because it has declared its intent to go public and is poised to raise billions more dollars in funding. What we found was sometimes fascinating and other times disquieting—but always worth knowing if you wish to keep your data under better control.

A new social rulebook

One thing is for sure: Facebook and other social networks are changing the way the modern world operates and "rewriting the rules" of social engagement, as Chief Operating Officer Sheryl Sandberg puts it.

Examples abound. Facebook recently partnered with the Department of Labor and others to help connect job seekers and employers, developing systems to make job postings viral. When tornadoes hit the Midwest and Texas this year, photos of animals posted on Facebook helped fami-

lies find lost pets. The network keeps active-duty soldiers in touch with families, including a National Guardsman serving in Afghanistan who not only reconnected with the woman who later became his wife but now uses it to follow the daily milestones of his newborn daughter. And millions now turn to Facebook to express their opinions to government and businesses, flexing their collective muscle in ways never possible before.

The site also aids commerce. Last year, 1-800-Flowers.com boosted sales of its Modern Embrace Pink Rose & Lily Cube and Make Mom's Day Bouquet before Mother's Day by asking moms to use a "Like" button to indicate their preference. And more than 18 million people visited or "liked" a brand's page after learning that friends had done so, our survey suggests. That's why so many organizations maintain pages on Facebook. At the Consumer Reports page, for example, we host live chats with our experts, share articles, and query visitors to help in our reporting. We have also bought ads on Facebook to tell users about our activities.

Ads like those are what keep Facebook so profitable. The company uses your data to help advertisers deliver ads that you may find useful. Suppose, for example, that you have "liked" the San Francisco 49ers page, or simply posted comments about football. You shouldn't be surprised to see ads in the margins for football tickets, fan paraphernalia, and the like. Facebook does not share any of your information

After all, it's your data

Facebook says that it will soon give users access to portions of the data below, and more, which it didn't disclose before.

- Time and date of Facebook log-ins
- IP address used for each session
- Friend requests you've made
- Facial recognition data
- Previous names used
- Your searches and page views within Facebook while logged in
- "Poke" information



with advertisers that buy those ads unless you give permission. If you click the ad and purchase something, the advertiser obviously learns who you are. And even if you simply "like" a brand page, the company can automatically send posts to your account. Such reach helped Facebook multiply revenue almost fivefold in the past two years, to \$3.7 billion in 2011.

This revenue model dovetails neatly with Zuckerberg's oft-stated goal of "making the world more open and connected." The more data you share, the more Facebook knows about you and the more powerful its ad-targeting machine becomes.

Privacy experts worry that Facebook's business model runs contrary to people's interests. "Facebook has purposefully worked to erode the concept of privacy

by disingenuously claiming users want to share all of their personal information," says Jeff Chester, founder of the Center for Digital Democracy, a D.C.-based consumer group.

Others, like widely followed blogger Robert Scoble, scoff at this fear. "I make everything public on my Facebook account and I'm not worried about privacy because the more I share about who I am and what interests me, the more Facebook can bring me content that I care about," says Scoble, startup liaison officer for Rackspace, a global Web-hosting company. "Yes, people have lost jobs because of things they have posted on Facebook, but you can also end up getting jobs and making all kinds of great connections because you've posted about your passions."

A wild ride: Highs and lows on the company's timeline

Here are notable moments for Facebook since its inception in founder Mark Zuckerberg's Harvard dorm room.

2004

facebook

Launch of Facebook Wall

1 million users, all on college networks



2006

You're in the news
News Feed launches, sending play-by-plays of users' Facebook activity to friends. Zuckerberg writes soon after on the site, "We did a bad job of explaining what the new features were and an even worse job of giving you control of them."

Anyone can now join Facebook

2007

Following you
Introduction of Beacon, which posts users' activities on other sites to friends and reportedly tracks them even if they opt out. "We simply did a bad job with this release and I apologize," says Zuckerberg, who later cancels the feature.

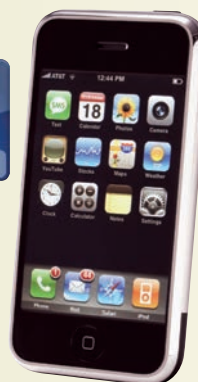


2008

iPhone app launches



Co-sponsors presidential debates



2009

The 'Great Betrayal'

Coined by critics, this refers to Facebook's revamped privacy settings, which default to "public"—widening exposure of users' data.

O Canada A report issued by Canada's privacy commissioner says Facebook has "serious privacy gaps" and violates Canadian law. Facebook makes changes to its system.



Different standards

This deep division of opinion is reflected in the widely divergent approaches that nations have adopted regarding laws that govern privacy.

In Europe, companies must notify consumers before collecting their data, and people have the right to obtain and correct copies of their information. The European Commission recently proposed even tighter rules that would require explicit “opt-in” consent before data were gathered and let you order that your data be permanently deleted—a provision known as the “right to be forgotten.”

In the U.S., on the other hand, there are strong federal privacy laws covering your financial and health data. But Americans have few federal rights to see and control much of the information they share through social networks.

Given the differing protections, it's worthwhile to ask what data Facebook actually keeps about you. Until recently, that was hard to find out. Even Facebook's “Download Your Information” tool yielded only part of your personal file.

We know that thanks in large part to Max Schrems, a 24-year-old Austrian law student who managed to get a fuller copy of his personal information last year from Facebook's Dublin office, which oversees relations with users outside the U.S. and Canada. Schrems was surprised to discover, among the 1,222 pages of data covering three years of Facebook activity, not only deleted wall posts and messages, some

with sensitive personal information, but e-mail addresses he'd deleted and names he'd removed from his friends list.

Schrems formed an activist group called Europe-v-Facebook.org, which posts redacted copies of the files he and others have freed from Facebook. His file contained 57 categories of personal data, including the date and time of log-ins and his last known geographic location, including longitude and latitude.

Facebook collects the same type of detailed information on American users, as confirmed by documents it released to Boston police during their investigation of Philip Markoff. He committed suicide in jail in 2010 shortly before going to trial for the murder of a young woman in what news accounts had dubbed the “Craigslit Killer” case. Markoff's Facebook file included copies of his wall posts, page after page of photos, a list of the exact times he logged in, his IP addresses (the unique strings of numbers that identify where you're accessing the Internet), as well as his list of friends.

“It is very likely that no government or corporation has ever managed to gather such a huge amount of personal and often highly sensitive data,” Schrems said in complaints filed with the Irish Data Protection Commission. The commission conducted an audit and said it would review in July Facebook's progress toward giving European users greater control over their data. The changes Facebook announced recently represent a step in that

BEHIND THE NUMBERS

The figures we cite on the behavior of Internet users, including those on Facebook, are drawn from our State of the Net survey conducted January 16 to 31, 2012, by the Consumer Reports National Research Center. The findings are nationally representative of Internet households. Participants were 2,002 adults with a home Internet connection who were part of an online panel convened by TNS, the world's largest custom-research agency. From those respondents, we created national projections. The margin of error for the full sample was plus or minus 2 percentage points at a 95 percent confidence level.

direction, though users still won't be able to get everything. Facebook says the expanded data will be rolled out in Europe and Canada first, and later in the U.S.

While improved privacy controls are welcome, some observers say they don't address the core issue. Eben Moglen, a Columbia University law professor who supports decentralized data sharing, worries that Facebook's focus on privacy controls is “like a magician who waves a brightly colored handkerchief in the right hand so that the left hand becomes invisible. From a consumer's viewpoint, Facebook's fatal design error isn't that Johnny can see Billy's data. It's that Facebook has uncontrolled access to everybody's data, regardless of the so-called privacy settings.” And even users

2010

The Decider Zuckerberg defends recent actions, saying Facebook “decided that these would be the social norms now and we just went for it.” Consumer groups complain to the Federal Trade Commission; it later charges that Facebook didn't keep privacy promises.

Say “cheese” German regulator considers action against the site's facial-recognition feature, saying it violates German privacy laws by collecting users' biometric data without their explicit consent.

2011

More about you

Timeline user interface introduced. Lets users enter events in their lives dating back to birth. Can make some past postings, formerly inaccessible, now widely available.

845 million users



Beltway boosters

Facebook adds former White House Chief of Staff Erskine Bowles to its board of directors. He joins Donald E. Graham, chairman and CEO of The Washington Post Company.

2012

Hands off

COO Sheryl Sandberg warns technology conference in Munich of damage to the European economy if social media is hampered by proposed stringent regulations.



Going public Facebook files with the SEC for initial public offering.



‘Move fast and break things.’

—MARK ZUCKERBERG, explaining Facebook's core values in his February 2012 letter to potential shareholders.



who adjust those settings can be surprised by where their information winds up.

Apps want your data

One way your data can escape is through Facebook games and apps. Whenever you run one, it gets your public information, such as your name, gender, and profile photo, as well as your list of friends even if you haven't made that list public. And if you give the app certain permissions, it can peer deeper into your data and even see information that your friends share with you, unless they have specifically forbidden sharing with apps in their own privacy settings.

The result is that unless you've chosen your privacy settings meticulously, a friend who runs an app could grant it access to your information without your knowledge. Given that fact, it's troubling that our survey found that only 37 percent of Facebook users say they have used the site's privacy tools to customize how much information apps are allowed to see.

Facebook exercises only basic oversight of developers of Web-based apps, according to Kevin Johnson, security consultant at Florida-based Secure Ideas, who has developed apps and tests their security. The sole credential needed to create an app is a verified Facebook account, including a cell phone number or credit card. And the company doesn't have to review your

source code (programming instructions) before it goes live, experts told us.

Facebook counters that it watches vigilantly for apps that misbehave. "We have a dedicated team that reviews apps using a risk-based approach to ensure we address the biggest risks, rather than just doing a cursory review at the time an app is first launched," a spokesman told us. "We also

Facebook apps can pose privacy risks even if you don't use them.

have stringent automated systems in place to quickly catch bad actors before they can gain access to user data."

Those apps run on Facebook in an environment the site maintains for developers to build user tools. But users can also share data through another type of app—the mobile apps that you download to your Apple or Android tablet or smart phone.

Consider Highlight. This free iPhone app, developed by Math Camp, taps into certain parts of your Facebook profile that you agree to share, and then can follow your travels using your GPS data. It runs quietly on your device until it detects another person running Highlight nearby.

When it does, it alerts you to each other's presence and shows your profile photos, mutual friends, and anything else you've shared. It's easy to imagine that Highlight could help you meet interesting people. Scoble says he found the app valuable for making connections at the recent South by Southwest (SXSW) technology and music conference in Austin, Texas, for example. But some privacy experts worry that such apps could also facilitate stalking and other antisocial behavior.

Tag—you're it

Privacy critics also point to one of the newer features on Facebook, Tag Suggest, which scans your photographs using facial-recognition technology. This system detects human faces in photos and then calculates a unique numerical identifier for each face based on characteristics such as the shape of the eyes and the distances between eyes, nose, and ears. It then tries to tie that face to a specific user's name.

Tag Suggest uses this system to search photos you upload of your friends. If it finds one, it suggests that you "tag" the photo with the friend's name. The aim is to make it easier to label photos in ways that facilitate sharing.

Tag Suggest sparked controversy last year when Facebook announced it had enabled it for some users without alerting them. Users could opt out, but first they

What Facebook knows about you

Whether by posting status updates on their "wall," updating their profile, "liking" a page, or using other Facebook features, Americans feed all kinds of personal details into the site's vast

database. The numbers below show how many people engaged in each activity during the past 12 months based on projections from our national survey of adults who are active on the site.

**39.3
MILLION**

identified a family member in their profile



2.3 MILLION
"liked" a page regarding sexual orientation

1.6 MILLION
"liked" a page pertaining to a racial or ethnic affiliation

**20.4
MILLION**

included their birth date and year in their profile



**2.6
MILLION**

discussed their recreational use of alcohol on their wall

4.7 MILLION
"liked" a page pertaining to health conditions or treatments

7.7 MILLION
"liked" a Facebook page pertaining to a religious affiliation



**4.6
MILLION**

discussed their love life on their wall

930,000
discussed their finances on their wall

had to notice that Tag Suggest was active. "If this new feature is as useful as Facebook claims, it should be able to stand on its own, without an automatic sign-up," Rep. Edward Markey, D-Mass., said last June. Facebook quickly responded by making Tag Suggest messages more prominent. Users who are automatically tagged are notified and can untag themselves or ask their friends to do it. Or they can disable the feature altogether.

Once again, though, critics say the issue goes beyond specific notifications to the fact that one company now controls such a vast biometric database about so many people. Facebook already stores more than 60 billion photos and says the number grows by 250 million a day. Its recent acquisition of the popular mobile photo-sharing service Instagram promises to add even more images to this cache.

Last year, Carnegie Mellon University researchers demonstrated in an experiment the potential such a database holds for connecting the dots in people's digital lives. Using off-the-shelf facial-recognition software that's probably far less effective than Facebook's, they were able to match subjects whose photos were posted on a dating site to their profile photos on Facebook.

Besides knowing what its users look like, Facebook keeps track of the other websites they visit. That happens via the "Like," "Recommendations," and similar buttons that so many sites include. In addition to reporting your presence, the "Like" button sends along the date and time of your visit and your IP address, whether or not you click on it. The company has acknowledged that this happens even when Facebook users are logged out, a practice that had prompted class-action lawsuits in the U.S. If you're logged in to Facebook, it can collect even more data.

The company also said that it collects data from people who are not its users and have never visited its site. That rang alarm bells among privacy watchdogs since an IP address can function "like DNA at a crime scene," according to Lori Andrews, a law professor at the Illinois Institute of Technology. "There often will be enough data points connected with your IP address to clearly identify you."

In November, regulators in Germany found that such information was being collected on Facebook users for up to two years even after they deactivated their accounts. Facebook said that was needed to

Nine ways to protect yourself

Facebook offers many privacy controls, but good luck understanding them. A new study by Siegel+Gale, New York-based consultants, finds that Facebook's and Google's privacy policies are tougher to comprehend than the typical bank credit card agreement or government notice. Google's widely promoted new policy was so dense that researchers "found it impossible to write an adequate question to test a reader's comprehension." Facebook's tools were nearly as opaque, and here are tips to help you with them:

Think before you type. Even if you delete an account (which takes Facebook about a month), some info can remain in Facebook's computers for up to 90 days.

Regularly check your exposure. Each month, check out how your page looks to others. Review individual privacy settings if necessary.

Protect basic information. Set the audience for profile items, such as your town or employer. And remember: Sharing info with "friends of friends" could expose it to tens of thousands.

Know what you can't protect. Your name and profile picture are public. To protect your identity, don't use a photo, or use one that doesn't show your face.

"UnPublic" your wall. Set the audience for all previous wall posts to just friends.

Turn off Tag Suggest. If you'd rather not have Facebook automatically recognize your face in photos, disable that feature in your privacy settings. The information will be deleted.

Block apps and sites that snoop. Unless you intercede, friends can share



personal information about you with apps. To block that, use controls to limit the info apps can see.

Keep wall posts from friends. You don't have to share every wall post with every friend. You can also keep certain people from viewing specific items in your profile.

When all else fails, deactivate. When you deactivate your account, Facebook retains your profile data, but the account is made temporarily inaccessible. Deleting an account, on the other hand, makes it inaccessible to you forever.

For detailed instructions on all of these tips, go to ConsumerReports.org/cro/facebookprivacy.

WATCH OUR VIDEO

Using your smart phone, download the ShopSavvy or the RedLaser app, then scan the code at right.



enhance security, a claim German regulators rejected. Both sides say they are willing to talk, but Facebook's website says it doesn't share such data without your permission and deletes it or makes the information anonymous within 90 days. The Irish Data Protection Commission concluded last year that the information Facebook gathered from third-party websites was not used for advertising or profiling.

Guess who's watching?

Some of the greatest threats to privacy have nothing to do with fancy technology but simply with poor judgment about what information to post and for whom. Here are groups that use such data:

Decision makers. Insurers, employers, and college admissions officers sometimes use social media to evaluate people. They may, for example, turn to a service such as Social Intelligence that scours public postings on Facebook and other social networks as part of a background check. Among the red flags employers look for, the company says, are sexually explicit photos or videos, racist remarks, and evidence of illegal activities. It also reports that 69 percent of human-resource officers have rejected job applicants based on social media reviews that turned up any of those flags.

"We can now collect information on buying behaviors, geospatial and location

information, social media and Internet usage, and more,” says a recent report from Novarica, a New York-based research and consulting firm serving insurers and financial service companies. “Our electronic trails have been digitized, formatted, standardized, analyzed and modeled, and are up for sale. As intimidating as this may sound to the individual, it is a great opportunity for businesses to use this data.”

The fact that insurers can mine social media should serve as a warning to Facebook users who publicly post information about their medical or health issues.

The same goes for would-be college students. Last year, Kaplan Test Prep found that almost a quarter of admissions officers had checked out applicants’ Facebook or other social pages. Twelve percent said that what they found had hurt the applicants’ chances, including things like photos of alcohol use, which are notoriously

common on young people’s pages.

Government investigators. IRS agents can scan public postings on Facebook as part of research to “assist in resolving a taxpayer case,” according to a 2009 training manual obtained by the Electronic Frontier Foundation, a privacy and con-

Employers, insurers, and the IRS mine posts on social networks.

sumer rights group. The manual offers an example that reads like a “Seinfeld” episode: An IRS officer learns that a taxpayer he’s investigating is a comedian who posts a video on a social network to promote previous and upcoming performances. It sug-

gests the agent contact past performance locations to find out how much the comedian was paid or serve the performer a summons at a future venue.

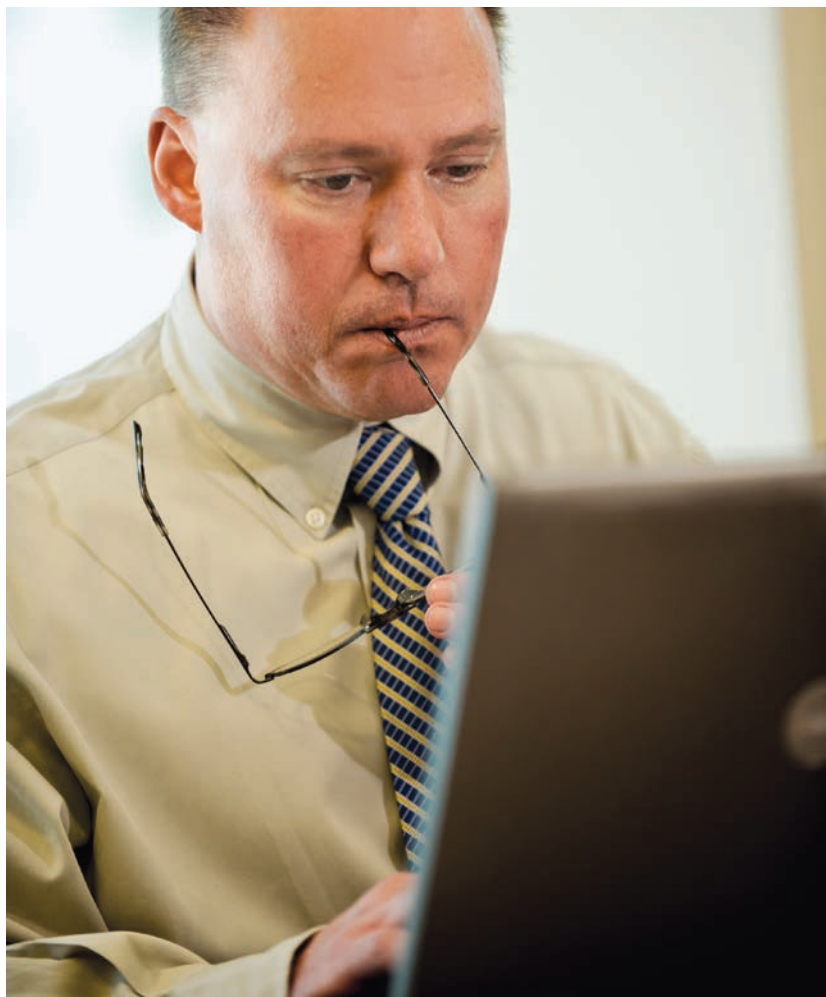
Comics can relax about at least one point: The manual bars agents from “friending” a taxpayer to gain access to data. But that’s not true of a memo the U.S. Citizenship and Immigration Services wrote for investigators at the Office of Fraud Detection and National Security trying to spot immigration fraud. “Many of these people accept cyber-friends that they don’t even know,” the memo notes. “This provides an excellent vantage point for FDNS to observe the daily life of beneficiaries and petitioners who are suspected of fraudulent activities.”

Enemies or criminals. Last September, someone with a gripe against Kevin Jolly gained access to the Lake Forest, Calif., lawyer’s Facebook page and launched a damaging attack. Jolly, 47, says the person downloaded his profile photo to create a fake page in his name and established contact with his Facebook friends. The perpetrator then inserted pornographic language into the fake profile and sent vulgar sexual messages daily to Jolly’s friends, family, and business colleagues.

Although Jolly reported the fake profile promptly, it took almost a month and several e-mails from Jolly for Facebook to remove it. “I can’t believe how long it took them to resolve this,” he says. “And even in a situation like mine, where someone is being personally and professionally destroyed by something abusive on Facebook, the only way they’ll communicate with you is through e-mail. Never once could I speak to a human being there.”

Contrast that with the case last year when a security flaw let outsiders grab more than a dozen of Mark Zuckerberg’s private photos and post them on Imgur, a photo-sharing site. That flaw was fixed in a day. Facebook says that by making users resort to online tools to access customer service, the company can process many more inquiries than it could through a telephone call center.

Even your own Facebook friends can occasionally be a risk. Our survey projects that something like 20 million U.S. Facebook users aren’t fully comfortable with all their friends in matters of personal security, either because they don’t know some of them very well—or because they know them quite well enough to understand how poor their judgment really is.



TOO SLOW Kevin Jolly of Lake Forest, Calif., says Facebook took weeks to delete a fake profile.

Better protections

Under a settlement that Facebook signed with the Federal Trade Commission last year, it was barred from making misrepresentations about the privacy or security of consumers' personal information. It also agreed to obtain users' consent before making changes that override their privacy preferences, among other things. Consumers Union, the advocacy arm of Consumer Reports, has praised the settlement, saying it sends "a strong message to companies that they must live up to the privacy promises made to consumers."

Some privacy advocates think the settlement wasn't tough enough. The Electronic Privacy Information Center has urged consumers to join its petition asking the FTC to make Facebook restore its privacy settings of 2009. EPIC also wants Facebook to offer complete access to all data it keeps about users, stop creating facial recognition profiles without their consent, cease secretly tracking users across the Web, and publicly disclose the results of the privacy audits that the FTC agreement requires every other year for the next two decades.

Consumers Union wants a national privacy law that holds all companies to the same privacy standards and lets you tell companies not to track you online. It also supports the Obama administration's effort to bring industry and privacy groups together to set clear rules for how your data is collected and used.

Leaving aside formal government regulations, there are plenty of steps that Facebook could take on its own to protect users better. It could, for example, fix a security lapse we first identified nearly two years ago that permits users to set up weak passwords including some six-letter dictionary words. It could help users avoid inadvertently sharing wall postings with the public, either by alerting them more prominently when they are about to do so or by changing the default audience for posts to the user's preferred audience. Facebook could also tighten its oversight of apps and respond faster to urgent user problems, such as those of Kevin Jolly.

Until it does, perhaps the best advice comes from Ed Skoudis, an instructor at the D.C.-based SANS Institute, which trains security experts: "Maximize your privacy settings, but even then, assume anything you do on Facebook can be seen by all of your friends, your mom, your great-great-grandchildren, your employer, health insurer, and the government."

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UCPS0612

Security software

Free programs are all that most users need

ODDS ARE GOOD that when you buy a new computer, it will come loaded with an anti-malware program. Acer and Dell, for example, include a free McAfee trial with their laptops, and Toshiba includes a Norton free trial. But there's no need to pay when the trial runs out: You can get good protection, especially against online threats, free of charge.

Our evaluations, performed in conjunction with International Consumer Research & Testing, an association of independent, nonprofit organizations, turned up free programs that should adequately protect all but the most at-risk Internet users from malware—viruses, spyware, and other online threats.

Pair a free program such as Avira, which we recommend, with other free tools to build a “suite” that should keep you safe. Make sure Windows' firewall is on, to help prevent malware from downloading and keep malicious websites from grabbing data off your computer. But if you remotely access files on your computer when you're away from home, for example, you will need stronger protection.

Windows also includes limited parental controls that let you block specific games or programs and place time limits on com-

puter use. For more-robust controls, such as protection when your child is browsing, consider a full software suite.

If your e-mail program often allows spam messages into your inbox, add a free anti-spam program such as Spamfighter, at spamfighter.com. Browsers such as Firefox warn if you're visiting a risky site.

Apple computers experience far fewer attacks than PCs. Apple's firewall and other security features offer sufficient protection. But Mac users may want to install an anti-malware program to avoid passing on Windows malware to others.

Before you install free software, uninstall any pre-loaded security programs. Some free programs might have persistent pop-ups that try to sell you the pay version, though that was a minor annoyance with the recommended Avira.

Pay suites offer more features and are simpler to use, with a single interface, just one download and installation, and a single upgrade from time to time.

Watch for automatic renewals once your subscription ends, especially if you're not planning to use the program again. Anti-malware programs let you know when your subscription is about to end with pop-up messages. Several automatically renew, although you can opt out of that service.

Overview

Running a firewall and an anti-malware program on your computer should provide sufficient protection. Add anti-spam software if the e-mail program provided by your service provider is letting through too many unwanted messages.

☒ **Recommended** These high-performing products are all fine choices and include CR Best Buys.

FREE PROTECTION, FINE FOR MOST

A1 Avira

This top free anti-malware program was the most effective in this category at detecting malware. It's easy to use and efficient at managing resources. Scan speed was also very good. When it's paired with a firewall such as Windows', it provides decent protection. Avira also has a full suite with more features, at a price. The free program intermittently has pop-up ads for its pay version and for other services.

FOR EXTRA PROTECTION AND FEATURES

B1 Avira

B2 G Data

B3 Kaspersky

B4 ESET

All were very good at almost every task. **B2** was the least costly of the pay packages we tested, but it tended to slow down the computer during scans. **B1** was top-rated but also the most expensive, and it didn't protect against new malware as quickly as the others. **B3** was best at protecting against online threats such as websites that host malware. **B3** and **B4** were fastest at scanning a hard drive for threats but not as effective as the others at scanning the PC for malware, both online and offline. **B1**, **B2**, and **B4** had very good firewalls, but Windows' free built-in firewall is good enough for most people.

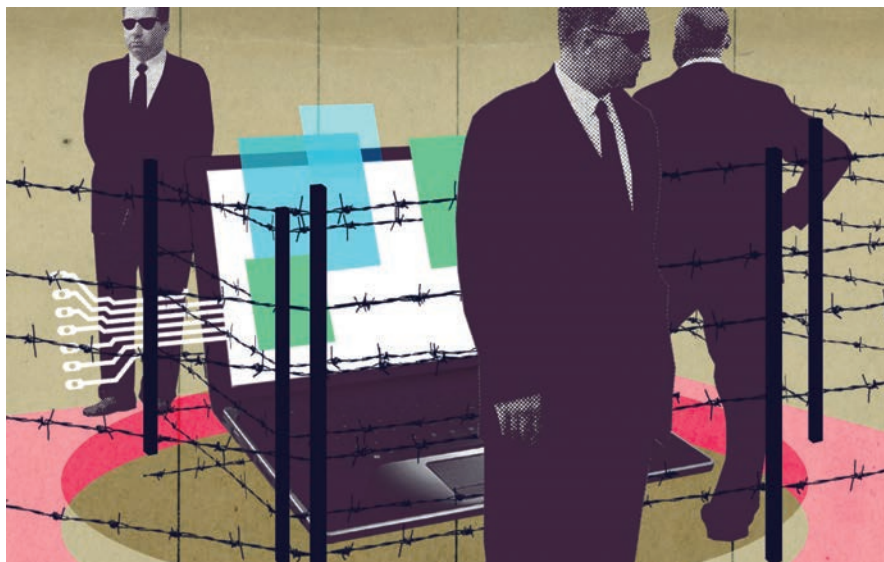


ILLUSTRATION: MARIO WAGNER



A1 Avira



B2 G Data



B3 Kaspersky



B4 ESET

Ratings Security software

All tested products In performance order, within types.

● Excellent
● Very good
○ Good
○ Fair
● Poor
☒ Recommended

		Product	Price		Overall score	Test results										Features		
Recommendation	Rank		Download	Renewal fee/yr.	0100 P F G V E	Net threats	Ease of use	Anti-malware					Firewall		Anti-spam		Non-boot rescue	
								Resources	Virus scan	Scan speed	Updating	Informative help	Performance	Clear warnings	Spam filter	Parental filter		

A FREE ANTI-MALWARE PROGRAMS Protect against viruses, spyware, and other malicious software.

<input checked="" type="checkbox"/>	1	Avira Free Antivirus <i>free-av.com</i>	NA	NA	62	○	●	●	●	●	○	●	*				
	2	AVG Anti-Virus Free 2012 <i>free.avg.com</i>	NA	NA	58	●	●	●	○	●	○	●	*				●
	3	Avast Free Antivirus <i>avast.com</i>	NA	NA	57	○	●	●	○	●	●	●	*				
	4	Microsoft Security Essentials <i>microsoft.com/security_essentials</i>	NA	NA	56	○	●	●	○	●	●	●	*				

B PAY SECURITY SUITES Protect against malware and spam and include a firewall.

<input checked="" type="checkbox"/>	1	Avira Internet Security 2012 <i>avira.com</i>	\$90	\$90	66	●	●	●	●	●	○	●	●	●	●	●	●
<input checked="" type="checkbox"/>	2	G Data Internet Security 2012 <i>gdata-software.com</i>	45	35	65	●	●	○	●	●	●	●	●	●	●	●	●
<input checked="" type="checkbox"/>	3	Kaspersky Internet Security 2012 <i>kaspersky.com</i>	80	60	63	●	●	●	○	●	●	●	●	●	●	●	●
<input checked="" type="checkbox"/>	4	ESET Smart Security 5 <i>eset.com</i>	80	60	63	●	●	●	○	●	○	●	●	●	●	●	●
	5	BitDefender Internet Security 2012 <i>bitdefender.com</i>	70	70	59	●	●	○	○	●	●	○	○	○	●	●	●
	6	Avast Internet Security 6 <i>avast.com</i>	70	70	58	○	●	●	○	●	●	●	○	○	○	○	○
	7	AVG Internet Security 2012 <i>avg.com</i>	70	60	56	●	●	○	○	●	○	●	○	○	○	○	○
	8	Norton Internet Security 2012 <i>norton.com</i>	70	70	55	●	●	●	○	●	●	●	○	○	○	○	○
	9	F-Secure Internet Security 2012 <i>f-secure.com</i>	60	45	55	●	●	○	○	○	○	○	○	○	○	○	○
	10	BullGuard Internet Security 12 <i>bullguard.com</i>	60	60	54	●	●	●	○	●	○	●	○	○	○	○	○
	11	Trend Micro Titanium Internet Security 2012 <i>trendmicro.com</i>	70	60	52	●	●	●	○	●	●	○	○	○	○	○	○
	12	ZoneAlarm Internet Security Suite 2012 <i>zonealarm.com</i>	70	50	48	○	●	○	○	●	●	○	○	○	○	○	○
	13	McAfee Internet Security 2012 <i>mcafee.com</i>	80	80	48	○	●	○	○	●	●	○	○	○	○	○	○
	14	Panda Internet Security 2012 <i>pandasecurity.com</i>	70	55	36	○	●	○	○	●	●	○	○	○	○	○	○

* Windows firewall was enabled.

Guide to the Ratings

Net threats shows how well the product protected against live exploits from websites. **Ease of use** covers installation, changing settings, and interacting with the software. **Resources** measures use of memory and tendency to slow computer operation during a scan. **Virus scan** measures effectiveness scanning the PC for malware, both online and offline. **Scan speed** measures how fast the product can scan a large group of files for threats. **Updating** shows how quickly the product is able to protect against new malware. **Informative help** provides clear, useful instructions on a particular setting or activity in the software.

Firewall performance shows how well the software stopped rogue connections to and from the Internet. **Clear warnings** are easy to interpret and guide you to the correct action when triggered. **Spam filter** removes unwanted e-mail from the inbox in your e-mail program. **Parental filter** is optional website filtering to protect children. **Non-boot rescue** provides a way to recover when malware stops your PC from booting. **Price** is for software download, usable on three PCs, for the first year; box version, if available, is about \$10 more. **Renewal fee/yr.** is the cost to maintain updates after the first year; promotional prices may be lower.

Is your home making you sick?

Six hidden hazards—and what to do to protect yourself

INDOOR AIR QUALITY isn't on most people's radar. Only 9 percent of Americans consider it a threat to their health, and 70 percent aren't concerned about it at all, according to a recent survey by the Consumer Reports National Research Center. But many of the things people do—or don't do—can add to the stew of airborne contaminants in their homes and worsen asthma, allergies, and other health conditions.

Almost half of Americans use air fresheners at

least once a week, and 34 percent use candles or incense that frequently, our nationally representative survey found. Roughly 40 percent rarely or never clean their humidifier or kitchen range hood, though they use it daily. One quarter have never cleaned or replaced their furnace filter. And almost 20 percent still smoke at home or let others smoke there. All of those things can worsen indoor air quality.

Many problems are easy to fix—or avoid. Here's our advice on how to protect your family and home.



► Household cleaners

A 2009 study by the Environmental Working Group identified 457 air contaminants—24 linked to serious health concerns, including cancer—in 21 household cleaners. Products labeled “green” were better overall, though the group found 93 contaminants in Simple Green Concentrated Cleaner.

That's partly because many claims on cleaning products aren't based on any standards. Products with the Design for the Environment (DfE) label from the Environmental Protection Agency have been screened by a third party and contain relatively safe ingredients.

Fragrances in cleaners are seldom disclosed. Many manufacturers list product ingredients on their websites, but they don't have to list fragrance ingredients. And one fragrance can contain 50 to 200 compounds, including dozens of volatile organic compounds. Terpenes, for example, give products a pine or lemon scent,

but they're linked to respiratory problems. They also can react with ambient ozone to form formaldehyde, a known carcinogen, and other irritants. But William Troy, Ph.D., a former chairman of the International Fragrance Association North America, says people need to consider exposure levels. “Fragrance exposure via cleaners is low,” he says, “and does not present a hazard to the consumer.”

What you can do

- Though it sounds obvious, always read product labels and follow directions for use. And open a window or run a fan when cleaning.
- If you have asthma or allergies, use products without fragrances or those with the DfE label.
- For a homemade glass cleaner, mix 1 tablespoon of vinegar or lemon juice with 1 quart of water. To clean toilets, use baking soda or vinegar and a toilet brush. To help get rid of odors, sprinkle baking soda on rugs or carpets, wait 15 minutes, then vacuum.

Old lead-based paint

Planning to paint? Old lead-based paint is the most significant source of lead poisoning in the U.S. Roughly 35 million homes, or about half of those built before lead-based paint was banned in 1978, have lead paint, according to a recent federal study. Yet only 17 percent of those we surveyed said they had their homes checked for it.

You can put yourself in danger by scraping, sanding, or burning lead-based paint. Lead can also be released when painted surfaces rub against each other, as when a window is opened. Children are particularly at risk.



What you can do

- If you have young children and an older home, have it tested for lead by an EPA- or state-certified pro using an XRF machine, or have paint-chip analysis by an EPA-certified lab.
- Mop floors and wipe windows and surfaces that children might chew on, such as crib rails.
- Leave lead-based paint undisturbed if it's in good condition, except where painted surfaces rub against each other. For damaged areas, follow the EPA's guidelines for removing lead paint or hire a painter who is EPA-certified.

Invisible killers: Carbon monoxide and radon

Carbon monoxide and radon are colorless, odorless, and deadly. CO kills quickly. Faulty gas ranges, cooktops, and furnaces can emit CO, as can wood, kerosene, and propane heaters. Gas generators also emit CO, so don't run them in a garage or outside near open windows.

Radon is the top cause of lung cancer among nonsmokers, though it can take years of exposure. It seeps from rocks, soil, or water beneath your house. Radon levels can vary greatly, even from home to home on the same block. The only way to know whether your house has a radon problem is to test for it.



What you can do

- Have your heating system and any other fuel-burning appliance inspected annually.
- Install a CO alarm on each level, including the basement.
- Change the batteries on your CO alarm according to your owner's manual, or at least every year. Only 53 percent of those we surveyed said they did that.
- Replace your CO alarm every five years.
- Run a long-term (90-day or longer) radon test. They cost \$20 to \$40 and are sold online.
- For homes with 2 to 4 picocuries per liter (pCi/L) or higher, consider treatment (\$800 to \$2,500).

► Combustion particles or gases

Even vented gas ranges, cooktops, furnaces, and fireplaces can release harmful gases, soot, and particles into the air if they're not properly installed and maintained. The same is true with vented wood-burning stoves and fireplaces. Unvented fuel-burning appliances always release small amounts of those substances.

When someone in your household smokes, the nicotine released by the cigarettes or cigars adheres to walls, carpeting, drapes, and other indoor surfaces and can react with nitrous acid (chiefly from unvented gas appliances) to form carcinogens, according to a recent Department of Energy study.

What you can do

- Always run the exhaust hood when using your gas range or cleaning your oven, or open a window.
- Periodically inspect burner ports on your gas stove and clean clogged ones with a needle.
- Clean a frequently used chimney annually.
- Ban smoking from your house.

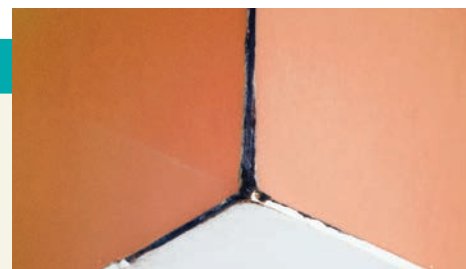
Interior mold

The ideal indoor relative humidity is between 30 to 50 percent. Less than that and nasal passages can become dry. At higher levels mold can grow. Humidifiers and dehumidifiers can help or create more problems.

Humidifiers should be emptied daily and disinfected regularly because mold can grow within 24 to 48 hours on wet surfaces. Mold and bacteria in the tank can be released into the air. Dehumidifier filters and tanks also need maintenance, though not as much. Check the manufacturer's directions.

Bathroom exhaust fans also reduce humidity but need cleaning to avoid dust buildup, a medium for germs.

Not all cleaning is smart. Air ducts need cleaning only in limited circumstances—when there's visible mold, pests, or dust clogging them. Still, 49 percent of survey respondents clean their ducts at least once a year.



What you can do

- Every season, check gutters, leaders, and downspouts for proper pitch, clogs, and broken fasteners or connections.
- Make sure that gutter pipes extend at least 5 feet from the house and that the soil around the foundation slopes away from the house.
- Avoid mold test kits; we've found them to be unreliable.
- Treat small areas of mold with a mixture of 1 part chlorine bleach and 16 parts water. Wear goggles, an N-95 respirator, and heavy-duty gloves. Make sure to ventilate the room when you're working.

► Air fresheners, candles, and incense

Behind the soothing fragrances of air fresheners, candles, and incense are volatile organic compounds. Air fresheners can also contain phthalates, which are linked to cancer and reproductive problems.

"A few manufacturers changed their products after our 2007 report found phthalates in 12 of 14 air fresheners we tested," says Gina Solomon, M.D., a senior scientist at the National Resources Defense Council. "That's good, because companies are reformulating to make their products safer, but it's also bad because it's hard to know what's currently in any given product."

Scented candles and incense also release soot



and particles into the air, which can trigger asthma attacks and allergic reactions.

"Most patients who stop using scented products have noticed an improvement in their symptoms," says Stanley Fineman, M.D., president of the American College of Allergy, Asthma and Immunology.

What you can do

- If you or someone in your household has serious allergies or asthma, avoid air fresheners, candles, and incense.
- If pollen or related allergies keep you from opening windows, run your air conditioner or forced-air cooling system with a clean filter. Or consider a filter-based air purifier. (See page 36 for our picks.)

► BY THE NUMBERS



65%

Percentage of surveyed households with someone who has a health condition affected by indoor air quality.

Air purifiers

Our nine choices put performance first

THE HOOVER COMPANY says its WH10600 air purifier, \$160, is a “premier product.” It has a multistage filtration system and an ultraviolet bulb for germs, and it automatically adjusts the fan speed to the appropriate setting for the current dust level. But the Hoover was lousy at removing smoke, pollen, and dust at any speed and is the lowest-rated air purifier in our Ratings. It’s also a prime example of brand name and bells and whistles meaning little when it comes to air purifiers.

The very best portable models we tested were effective at cleaning the air of dust, smoke, and pollen at high or low speed. For whole-house purifiers, our recommended models did best at filtering dust and pollen without impeding airflow of forced-air heating and cooling systems.

The worst models weren’t terribly effective at any speed. The LightAir IonFlow 50 Surface, \$300, which we retested, did almost nothing. (See “The Dirt on Air Purifiers,” CR March 2012, page 44.) It remains a Don’t Buy: Performance Problem.

How to choose

You might need an air purifier if basic steps such as banning indoor smoking,

keeping pets from bedrooms, removing carpets, and opening windows when possible aren’t enough.

If you want a purifier and don’t have a forced-air system, consider a large portable. In addition to removing more particles at high speeds, the better large models still did well at lower, quieter speeds.

Weigh features carefully. Most air purifiers have an indicator that tells you when

to clean or replace the filter to maintain efficiency. But some indicators turn on based on length of time the unit has been running, not how dirty the filter is. Skip odor-removal features. In past tests it took up to an hour for them to make a difference—when they did anything at all.

And the certifications on the box? All tell how well a model filters particles at its highest speed. The certifications all also allow up to 50 parts per billion of ozone, a respiratory irritant. We advise against using models that produce any ozone, even if they are effective cleaners. (We tested the Brookstone Ion Pro, \$300, but didn’t include it in our Ratings because it produces a small amount of ozone.)

Ratings

All tested models in performance order, within types.

Recommendation	Rank	Brand & model Similar models, in small type, are comparable to tested model.	Price	Annual operating cost	Overall score	Test results					Ease of use	Change-filter indicator
						Dust/smoke/pollen removal		Noise				
						Low speed	High speed	Low speed	High speed			

A PORTABLES All are filter-based units.

✓	1	Whirlpool AP51030K	\$ 300	\$212	74	●	●	●	○	●	●
✓	2	Hunter 30547	260	180	73	●	●	●	●	●	●
✓	3	Blueair 503	600	233	67	○	●	●	●	○	●
✓	4	GE AFHC32AM	350	193	66	○	●	●	●	●	●
✓	5	Blueair 650E	800	235	65	○	●	●	●	○	●
✓	6	Holmes HAP756-U	146	144	59	○	●	●	●	●	●
	7	Electrolux EL500AZ	280	168	57	●	●	●	●	●	●
	8	Honeywell True HEPA 50250 50255	190	192	56	○	●	○	●	○	●
	9	Blueair 403	500	177	55	●	●	●	●	○	●
	10	Kenmore PlasmaWave 85450	300	129	54	●	●	●	●	●	●
	11	GE AFHC21AM	250	126	54	○	●	○	●	○	●
	12	3M Filtrete Ultra Clean Air Purifier FAP03-RS	200	212	54	●	●	●	●	○	●
	13	FilterStream AirTamer A710	330	203	53	●	●	●	●	●	●
	14	Amway Atmosphere 101076	1,075	181	51	●	●	●	●	●	●
	15	Idylis IAP-10-280 (Lowe's)	300	160	50	●	●	●	●	●	●
	16	Sharp FP-A60U	250	130	50	●	●	●	●	●	●
	17	Vollara FreshAir HEPA US40726B	500	180	48	●	●	●	●	●	●
	18	Therapure TPP250	175	84	48	●	○	●	●	●	●
	19	Humanscale Zon HZAB	300	116	44	●	○	●	○	●	●
	20	Oreck AirInstinct 200 AIR108	500	53	43	●	○	●	●	●	●
	21	Idylis IAP-10-200 (Lowe's)	250	119	42	●	●	●	●	○	●
	22	HoMedics AR-20	120	93	39	●	○	●	●	●	●
	23	Honeywell HEPA Clean HHT-145 HHT-149	215	111	38	●	○	●	●	●	●
	24	Hamilton Beach TrueAir Ecoclean 04493	100	72	37	●	○	●	●	●	●

■ DID YOU KNOW?



Twenty-nine percent of households with smokers never clean or replace their air purifier's filter—as opposed to 14 percent of households without smokers, according to our recent survey. Twice a year is recommended.



A1 Whirlpool



A2 Hunter



B1 Lennox



C1 3M



LightAir

Don't Buy:
Performance
Problem
LightAir IonFlow
50 Surface

<div>👍 CR Best Buy 👍 Recommended</div> <div>👍 Excellent 👍 Very good 👍 Good 👍 Fair 👍 Poor</div>													
Recommendation	Rank	Brand & model <div>Similar models, in small type, are comparable to tested model.</div>	Price	Annual operating cost	Overall score	Test results						Ease of use	Change-filter indicator
						Dust/smoke/pollen removal		Noise		Ease of use	Change-filter indicator		
						Low speed	High speed	Low speed	High speed				

A PORTABLES continued

25	Whirlpool APT4001OR	\$180	\$140	34								
26	Germ Guardian AC5000B	165	165	33								
27	Holmes HAP1200-U	105	69	29								
28	Holmes HAP9412B	50	62	21								
29	Hoover WH10600	160	85	19								

DON'T BUY: PERFORMANCE PROBLEM

	Lightair IonFlow 50 Surface*	300										
--	------------------------------	-----	--	--	--	--	--	--	--	--	--	--

*Not filter-based.

Recommendation	Rank	Brand & model	Price	Annual operating cost	Overall score	Test results		
						Dust removal (whole house)	Smoke removal (whole house)	Airflow resistance
0 P F G V G E 100								

B WHOLE-HOUSE SYSTEM These filter-based systems require professional installation.

<input checked="" type="checkbox"/>	1	Lennox Healthy Climate HC16	\$300	\$100	94			
<input checked="" type="checkbox"/>	2	Carrier EZ Flex Filter Cabinet	300	96	72			

C WHOLE-HOUSE FURNACE FILTERS These products can be installed by the do-it-yourselfer.

<input checked="" type="checkbox"/>	1	3M Filtrete Elite Allergen 2200 MPR	24	96	65			
	2	3M Filtrete 1900 MPR	20	80	54			
	3	3M Filtrete Micro Allergen 1000 MPR	11	44	46			
	4	3M Filtrete 600 MPR	9	36	33			
	5	Flanders NaturalAire FPR 8	10	40	28			

Overview

We recommend filter-based products because they don't produce ozone, a respiratory irritant that can aggravate asthma and allergies. Consider a whole-house option instead of a portable unit if your home has a forced-air heating or cooling system. In addition to testing for dust and smoke removal, we measure whether the filter impedes airflow.

CR Best Buy These blend value and performance. All are recommended.

Recommended These offer top performance and often specific strengths.

Don't Buy Performance problem; details on the facing page.

CAPABLE PORTABLES

A1 Whirlpool \$300 **CR Best Buy**

A2 Hunter \$260 **CR Best Buy**

A6 Holmes \$146

A1 was one of the quietest portable models we tested when run on high, where it aced our smoke- and dust-removal tests. It also performed well on its lowest speed. **A2** costs slightly less to buy and operate but wasn't as quiet on its highest speed. **A6** is the least expensive of the bunch to buy and run. It was great at removing smoke and dust, but only on its highest, noisiest speed. All have an indicator that tells you when it's time to change the filter.

BEST WHOLE-HOUSE CHOICES

B1 Lennox \$300 (installed)

B2 Carrier \$300 (installed)

C1 3M \$24

B1 and **B2** need to be initially installed by a professional. Then you can change the filters yourself. **B1** was the best at filtering dust and smoke from every room in your home. If no one in your home smokes, consider **B2** or **C1**. The latter is an easy-to-install replacement filter.

Dehumidifiers

5 top picks beat coming price hikes



A1 Frigidaire

B2 GE

GOT THAT CLAMMY FEELING? Dehumidifiers that aced our tough tests were tops at sucking moisture out of steamy spots that can breed mold and other allergens. And prices may never be lower.

This October federal efficiency standards for dehumidifiers become roughly 20 percent stricter, on average. Energy Star models typically will have to capture about 4 pints of water for every kilowatt-hour of electricity used. That could save you about \$20 per year, though prices could rise by up to \$40 to cover the cost of better airflow and other improvements. Large-capacity models already approach the new standards, and some manufacturers are scaling back on small units, which remove fewer than 45 pints per day and have been least impressive overall.

That's why our Ratings focus on large- and medium-capacity models. Here's what we found—and what to look for:

For large or wet spaces. The best large models remove moisture quickly and efficiently in the toughest situations, say, an especially wet basement. Frigidaire's new FAD704DUD 70-pint dehumidifier, \$240, topped our tests with superb performance and less noise than most models. A problem we noticed when using a drain hose has been addressed (see the box below). Haier's new DE65EK-L, \$200, stuck more closely to humidity settings, though its noise could be an issue in living areas.

For small or damp spots. A large dehumidifier will help dry a smaller space quickly, but a medium-capacity model will probably do it with less cycling, according to the industry. Frigidaire also topped this group with its FAD504DUD, \$200. The GE ADER50LN, \$260, is more efficient, though it's noisier and didn't maintain humidity settings as closely.





Before buying one of these, see what's causing the dampness. A sump pump or exhaust fan can help keep relative humidity within the optimal 30 to 60 percent. Then check the features. Frost control, on all tested models, keeps coils from freezing in cool spaces. Others have a dirty-filter alert and auto restart, which turns the unit on again after a power outage.

Ratings

All tested models In performance order, within types.

		Brand & model	Price	Specs	Overall score	Test results	Features
Recommendation	Rank	Similar models, in small type, are comparable to tested model.		Tank size (pt.)	0100	Water removal (pt. per day)	Dirty-filter alert
				Claimed pt. (per day)		Efficiency	
					P F G V E		Remote control
							Drain hose included
							Auto restart

A LARGE CAPACITY Best for large or very wet spaces, these capture the most moisture per day.

	Rank	Model	Price	Capacity (cu ft)	Weight (lb)	Energy Star Score	Energy Star Rating	Energy Star Label	Energy Star Details	Energy Star Notes
	1	Frigidaire FAD704DUD LAD704DUD (Lowe's)	\$240	16	70	89	★★★★★	★★★★★	★★★★★	★★★★★
	2	Soleus Air SG-DEH-70-2	225	15	70	88	★★★★★	★★★★★	★★★★★	★★★★★
	3	Haier DE65EK-L (Walmart) DE65EK	200	15	65	86	★★★★★	★★★★★	★★★★★	★★★★★
	4	Amana D974E*	280	15	74	82	★★★★★	★★★★★	★★★★★	★★★★★
	5	GE ADER65LN  ADER65LQ, ADEW65LQ (Walmart)	310	14	65	79	★★★★★	★★★★★	★★★★★	★★★★★
	6	Danby DDR6009REE*	220	15	60	77	★★★★★	★★★★★	★★★★★	★★★★★
	7	Frigidaire LAD704TDL (Lowe's)	260	16	70	76	★★★★★	★★★★★	★★★★★	★★★★★
	8	Sunpentown SD-65E	230	17	65	68	★★★★★	★★★★★	★★★★★	★★★★★

B MEDIUM CAPACITY Best for medium or small spaces that are damp but not wet.

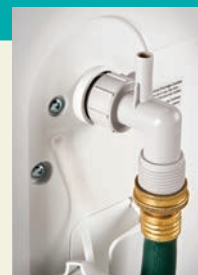
Medium-Space Best for medium or small spaces that are damp but not wet.										
<input checked="" type="checkbox"/>	1	Frigidaire FAD504DUD LAD504DUD (Lowe's)	200	16	50	84	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
<input checked="" type="checkbox"/>	2	GE ADER50LN D ADER50LQ, ADEH50LQ (Home Depot), ADEW50LQ (Walmart)	260	16	50	81	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	3	Soleus Air SG-DEH-45-2	210	8	45	78	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	4	Frigidaire LAD504TDL (Lowe's)	220	16	50	74	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	5	Haier DE45EK-L (Walmart) DE45EK, DE45EKT (Target)	190	12	45	72	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	6	DeLonghi DD50P	260	12	50	71	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	7	LG LD450EAL D LD451EGL	220	17	45	69	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	8	Danby DDR5009REE*	200	14	50	69	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	9	Soleus Air SG-DEH-45-1	220	9	45	60	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	10	Haier DE45EJ-L	200	23	45	55	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>

D Discontinued, but similar model is available. *Fan stays on until bin is full, using more energy.

Faulty Frigidaire: The fix is in

Most dehumidifiers let you bypass the drain bucket with a hose to a floor drain or sump. With both top-scoring Frigidaire's, we found that water could run into the collection bin rather than out the hose. We contacted Frigidaire, which told us it was aware of the problem and sent us the plug and

adapter it has been including with those models. We tried it: Problem solved. An internal fix to newer units eliminates the need for the kit, according to the company. Own an older version? You can get the kit free by calling Frigidaire at 706-860-4110.



Lab tests

Ratings, reviews, recommendations

Ratings

Recommended models only From 44 tested.

☒ CR Best Buy
 ☒ Recommended
☒ Excellent
 ☒ Very good
 ☐ Good
 ☐ Fair
 ☐ Poor

	Brand & model	Price		Overall score	Test results					Features & specifications			
Recommendation	Rank		Screen size (in.)		Ease of use	Display	Touch response	Versatility	Portability	Battery life (hr.)	Weight (lb.)	Internal storage (GB)	Cellular data
		P	F	G	V	G	E						Memory-card slot

A 9- TO 10-INCH SCREEN

<input checked="" type="checkbox"/>	1	Apple iPad (Wi-Fi, 4G, 16GB) (3rd gen.)	\$630	9.7	85						11.6	1.5	16, 32, 64	•
<input checked="" type="checkbox"/>	2	Samsung Galaxy Tab 8.9 (Wi-Fi, 4G, 16GB)	630	8.9	83						8.9	1.0	16	•
<input checked="" type="checkbox"/>	3	Apple iPad (Wi-Fi, 16GB) (3rd gen.)	500	9.7	83						11.5	1.5	16, 32, 64	
<input checked="" type="checkbox"/>	4	Asus Eee Pad Transformer Prime TF201 (Wi-Fi, 32GB)	500	10.1	82						8.5	1.3	32, 64	•
<input checked="" type="checkbox"/>	5	Apple iPad 2 (Wi-Fi, 3G, 16GB)	530	9.7	82						11.6	1.3	16, 32, 64	•
<input checked="" type="checkbox"/>	6	Samsung Galaxy Tab 8.9 (Wi-Fi, 1 GB)	400	8.9	81						8.4	1.0	16, 32	
<input checked="" type="checkbox"/>	7	Samsung Galaxy Tab 10.1 (Wi-Fi, 16GB)	450	10.1	80						9.3	1.2	16, 32	
<input checked="" type="checkbox"/>	8	Apple iPad 2 (Wi-Fi, 16GB)	400	9.7	80						11.6	1.3	16, 32, 64	
<input checked="" type="checkbox"/>	9	Toshiba Excite 10LE (Wi-Fi, 16GB)	530	10.1	79						8.1	1.1	16, 32	•
<input checked="" type="checkbox"/>	10	Motorola Droid Xyboard 10.1 (Wi-Fi, 4G, 16GB)	700	10.1	79						8.9	1.3	16, 32, 64	•
<input checked="" type="checkbox"/>	11	Sony Tablet S (Wi-Fi, 16GB)	400	9.4	79						9.1	1.3	16, 32	•
<input checked="" type="checkbox"/>	12	Samsung Galaxy Tab 10.1 (Wi-Fi, 4G, 16GB)	700	10.1	78						8.9	1.3	16, 32	•
<input checked="" type="checkbox"/>	13	Motorola Xoom (Wi-Fi, 4G, 32GB)	580	10.1	76						10.5	1.6	32	•
<input checked="" type="checkbox"/>	14	Motorola Xoom (Wi-Fi, 32GB)	500	10.1	75						11.0	1.6	32	•
<input checked="" type="checkbox"/>	15	Acer A200 (Wi-Fi, 16GB)	350	10.1	75						9.6	1.6	8, 16	•
<input checked="" type="checkbox"/>	16	Asus Eee Pad Transformer (Wi-Fi, 16GB)	400	10.1	75						9.0	1.5	16, 32	•

B 7- TO 8-INCH SCREEN

<input checked="" type="checkbox"/>	1	Samsung Galaxy Tab 7.7 (Wi-Fi, 4G, 16GB)	700	7.7	79						8.3	0.8	16	•
<input checked="" type="checkbox"/>	2	Pantech Element (Wi-Fi, 4G, 16GB)	450	8.0	74						10.2	1.0	16	•
<input checked="" type="checkbox"/>	3	Samsung Galaxy Tab 7.0 Plus (Wi-Fi, 4G, 16GB)	500	7.0	74						6.2	0.8	16	•
<input checked="" type="checkbox"/>	4	Samsung Galaxy Tab 7.0 Plus (Wi-Fi, 16GB)	350	7.0	72						6.5	0.8	16, 32	•
<input checked="" type="checkbox"/>	5	T-Mobile SpringBoard (Wi-Fi, 4G, 16GB)	430	7.0	71						6.1	0.9	16	•
<input checked="" type="checkbox"/>	6	Motorola Droid Xyboard 8.2 (Wi-Fi, 4G, 16GB)	600	8.2	70						5.2	0.9	16, 32	•
<input checked="" type="checkbox"/>	7	Sony Tablet P (Wi-Fi, 4G, 4GB)	550	7.0	69						6.3	0.8	4	•
<input checked="" type="checkbox"/>	8	Toshiba Thrive 7-in. (Wi-Fi, 16GB)	380	7.0	69						5.0	0.8	16, 32	•
<input checked="" type="checkbox"/>	9	BlackBerry PlayBook (Wi-Fi, 16GB)	500	7.0	68						7.6	1.0	16, 32, 64	
<input checked="" type="checkbox"/>	10	Amazon Kindle Fire (Wi-Fi, 8GB)	200	7.0	64						6.3	0.9	8	
<input checked="" type="checkbox"/>	11	Barnes & Noble Nook Tablet (Wi-Fi, 16GB)	250	7.0	62						6.2	0.9	8, 16	•

New iPad vs. rivals

Apple's third-generation iPad offers the best detail and most accurate colors we've ever seen on a tablet. The 4G version, **A1**, now tops our Ratings.

Apple pumped the camera up to 5 megapixels. The broadband version now offers 4G Internet access, which in our informal tests was very fast and dependable. Finally, the battery lasts about as long as the iPad 2's. Both exceed any other tablet's battery life.

The iPad can be warmer in its hottest spots than the older iPad, **A5 Apple**. But we didn't find those temperatures to be cause for concern. There's an easy solution: Turn the screen brightness down to about two-thirds. We found that two Android tablets, the **A7 Samsung** and the **A4 Asus**, got almost as warm in similar testing conditions.

Several new Android tablets also receive our recommendation. **A9 Toshiba** is the lightest 10.1-inch tablet we've tested, weighing in at just over a pound. It's also a very thin 0.31 inch.

Samsung added a new tablet to its Galaxy Tab line. The **B1 Samsung** has an OLED display that provides deeper blacks and a wide viewing angle.

If you are worried about taking a device to the pool or beach, consider **B2 Pantech**, which is claimed to be waterproof. Its 10-hour battery life is the longest among the smaller tablets we tested. But it's not as readable in bright sunlight as some other models.

If you read e-books and miss the feel of a paperback, consider **B7 Sony**. It has dual 5-inch screens, and you can hold it like a book, though that works only with books from Sony's market. When playing some games, the lower screen is a controller. But the split screen can get in the way when Web browsing.

Power inverters offer backup in a blackout

June is the start of hurricane season, reason enough to consider buying a generator even without other weather woes.

You could buy a portable generator for at least \$300. But if you just want to keep a sump pump going or food cold during short-term outages, you might consider a less expensive, shoe-box-sized power inverter. It can use a car as a generator, converting direct current (DC) from the car's 12-volt system into the alternating current (AC) required by most household devices.

We tested two inverters in our labs and at a staffer's house during a power outage. Both are from PowerBright, a brand sold by



retailers including Sears and Walmart. The **PW900**, \$80, provides 900 watts (1,800 peak) and 7.5 amps; the **PW1500-12**, \$180, provides 1,500 watts (3,000 peak) and 12.5 amps.

What we found. Even the smaller inverter could run a sump pump and a refrigerator at the same time, but you might need to rotate among appliances, lights, and electronics chargers.

You'll probably have to keep the car running: If the inverter draws more from its battery than the alternator can replenish, you'll drain the battery. Idling a car with the inverter attached used about a third of a gallon of gasoline per hour. Make a direct connection to the car's battery: The cigarette-lighter adapter isn't up to the task. You need to use one extension cord per device you power.

Bottom line. Inverters are less useful than generators, but they're handy and inexpensive and could avert big problems in a power outage.



3 EarthPan

Cookware that sizzles

If you expect cookware sets from the same brand to perform similarly in your kitchen, you'll be disappointed, according to our latest tests. One EarthPan nonstick set remains a standout, but two others quickly lost their nonstick coating.

The nonstick coating on the **3 EarthPan** Hard Anodized cookware, \$170, the model we previously rated highly, held up even after 2,000 strokes with steel wool. The pan, a CR Best Buy, also evenly cooked food and like most nonstick cookware was a cinch to clean.

But the nonstick coating on the **12 EarthPan II** and **14 EarthPan Plus** cookware wore out pretty quickly; they were ready for the trash after fewer than 400 strokes.

The three EarthPan sets do have one thing in common: a 90-day warranty, which is the

shortest of any of the 30 sets tested.

Food easily slid off the **1 Swiss Diamond** cookware, and the **2 Scanpan** Classic pans cooked food slightly more evenly than the top-rated EarthPan pots and pans. But at \$500, they're expensive.

The **4 Starfrit**, \$160, also performed impressively, but food didn't slip off the nonstick coating as easily, and its handles weren't as sturdy.

Hot dots and weak spots. The nonstick skillets in the **11 T-Fal Ingenio** set, \$120, have a patterned red circle in the middle that turns solid red when the pans are perfectly preheated. It alerted us when the pan had reached about 400° F. But the spot's color doesn't change when the pan gets too hot, so you have to pay attention.

Ratings

All tested models in performance order.

☒ CR Best Buy ☒ Recommended

● Excellent ● Very good ○ Good ● Fair ● Poor

Recommendation	Rank	Brand & model	Price	Overall score	Test results						
					Pieces	Cooking evenness	Nonstick durability	Nonstick effectiveness	Handle temperature	Handle comfort	Cleaning ease
				0							
				100							
				P F G V G E							

NONSTICK COOKWARE Most are made of aluminum.

<input checked="" type="checkbox"/>	1	Swiss Diamond Reinforced	\$500	79	10	●	●	●	●	●	●
<input checked="" type="checkbox"/>	2	Scanpan Classic ¹	500	73	11	●	●	●	●	●	●
<input checked="" type="checkbox"/>	3	EarthPan Hard Anodized	170	72	10	●	●	○	●	●	●
<input checked="" type="checkbox"/>	4	Starfrit Alternative Eco Pan ²	160	71	8	●	●	○	●	●	●
	5	Calphalon Kitchen Essentials ¹	175	66	8	●	●	○	●	●	●
	6	Emerilware Hard Anodized	200	62	10	●	○	●	●	○	●
	7	Cuisinart Green Gourmet	250	62	12	○	●	○	●	○	●
	8	Berndes Signo Classic 697101 ¹	220	61	5	●	○	●	●	●	●
	9	Circulon Elite	250	49	10	●	●	●	●	●	●
	10	Cuisinart Chef's Classic Non-Stick 66-7	100	44	7	●	●	●	○	●	●
	11	T-Fal Ingenio (HSN) ¹	120	43	20	○	●	●	●	○	●
	12	EarthPan II ¹	150	40	10	●	●	●	●	●	●
	13	Nordic Ware Rangeware	100	40	8	●	○	○	●	●	●
	14	EarthPan Plus ¹ ²	130	34	10	●	●	●	●	●	●
	15	Mercola Healthy Chef ²	290	25	16	●	●	○	○	●	●

¹ Dishwasher-safe. ² Can be used on induction cooktops and ranges.

Blood pressure monitors go mobile

YOU CAN USE one device to check your e-mail, make a phone call, and get an accurate blood pressure reading, our latest test found. And you probably already carry that device everywhere. That's right, blood pressure monitors now work with your smart phone.

A11 Withings, \$130, is compatible with the iPhone, iPad, and iPod Touch, as is **A8 iHealth**, \$100. But **A11** requires a docking station. Both monitors require you to download a free app. Test panelists rated **A11 Withings** as less comfortable than **A8 iHealth**. Overall we recommend 14 models out of the 21 we tested. **A7 ReliOn** (Walmart) is an arm model and CR Best Buy at \$40. Bigger cuffs for **A7 ReliOn** cost \$10 each.

Among the top arm monitors is a new entry, **A5 LifeSource**, \$100. It's accurate, but it lacks a multiple memory feature, which allows two or more users to save readings. And if you expect your systolic pressure (top number) to exceed 230 millimeters of mercury (mmHg), you need to press and hold the "start" button until a

number 30 to 40 mmHg higher than your expected systolic pressure appears. In past tests, we've found that wrist-type monitors were usually less accurate than arm models. Our new tests found again that **B5 Panasonic**, \$60, and **B7 CVS**, \$70, were not the most accurate models in our tests. Our engineers said it's tricky to position the two units at heart level, which might make it difficult to get a good reading. But we recommend wrist models **B1 Omron**, \$60, and **B2 Rite Aid**, \$50, which are ac-

DID YOU KNOW?

The right way to take a reading
Sit quietly for at least 5 minutes before taking a measurement, put your feet flat on the ground while sitting straight up, and avoid talking or moving. It also helps to take the measurement at the same time of day.

curate, easy to use, and comfortable. The instructions for those two units recommend a different position than the less accurate models, which might explain the better measurements. **B2 Rite Aid** is the only tested blood pressure monitor that lacks a function to give you an overall average.

Ratings

All tested models In performance order, within types.



		Brand & model	Price	Overall score	Test results	Features
Recommendation	Rank	Similar models, in small type, are comparable to tested model.			Accuracy Convenience Comfort Average test time (sec.) Irregular-heartbeat detector Risk-category indicator Multiple-user memory Comes with two cuffs or one that fits most Data-averaging function	
				0 100 P F G V E		

A ARM MONITORS

<input checked="" type="checkbox"/>	1	Omron 10 Series BP785	\$ 80	89	• • • • •	35	• • • • •
<input checked="" type="checkbox"/>	2	CVS Advanced Automatic BP3MVI-1ECVS #800230	60	89	• • • • •	45	• • • • •
<input checked="" type="checkbox"/>	3	Walgreens Deluxe WGNBPA-540	65	87	• • • • •	45	• • • • •
<input checked="" type="checkbox"/>	4	Omron 5 Series BP742	60	86	• • • • •	35	• • • • •
<input checked="" type="checkbox"/>	5	LifeSource UA-787EJ	100	86	• • • • •	35	• • • • •
<input checked="" type="checkbox"/>	6	Rite Aid Deluxe Automatic BP3ARI-4DRITE	60	85	• • • • •	45	• • • • •
<input checked="" type="checkbox"/>	7	ReliOn HEM-741 CREL (Walmart)	40	82	• • • • •	35	• • • • •
<input checked="" type="checkbox"/>	8	iHealth Dock BP3	100	81	• • • • •	35	• • • • •
<input checked="" type="checkbox"/>	9	LifeSource Advanced One Step UA-767-PVL UA-767PV (medium cuff) and UA-767PVS (small cuff)	60	81	• • • • •	40	• • • • •
<input checked="" type="checkbox"/>	10	Panasonic EW 3152 W	130	80	• • • • •	40	• • • • •
<input checked="" type="checkbox"/>	11	Withings BP-800*	130	80	• • • • •	40	• • • • •
<input checked="" type="checkbox"/>	12	Panasonic EW 3109 W	45	79	• • • • •	35	• • • • •
<input checked="" type="checkbox"/>	13	HoMedics Automatic BPA-040	40	65	• • • • •	45	• • • • •
<input checked="" type="checkbox"/>	14	LifeSource Premium UA-853AC	100	56	• • • • •	30	• • • • •

B WRIST MODELS

<input checked="" type="checkbox"/>	1	Omron 7 Series BP652	60	95	• • • • •	30	• • • • •
<input checked="" type="checkbox"/>	2	Rite Aid Automatic RC210	50	86	• • • • •	30	• • • • •
	3	LifeSource Advanced Memory UB-512	60	75	• • • • •	45	• • • • •
	4	Omron Ultra Premium HEM-670IT	90	59	• • • • •	40	• • • • •
	5	Panasonic EW-BW10W	60	59	• • • • •	40	• • • • •
	6	HoMedics Automatic BPW-040	30	53	• • • • •	45	• • • • •
	7	CVS Advanced BP3MYI-1ECVS #800228	70	14	• • • • •	40	• • • • •

*Due to manufacturer instructions at test time, only left-arm data is available.



A11 Withings



B1 Omron



Gas grills

Get more features for less money

SALES OF GRILLS have been lackluster lately, but many of the models we tested were anything but. Inexpensive grills offered impressive cooking, and midpriced models were loaded with premium features such as searing burners, lights, and thicker stainless-steel grates.

But we did see trade-offs, including smaller cooking areas, thinner shelves, more painted metal and less stainless steel, and lower grades of stainless, which past tests found are more prone to rust and corrosion than more expensive stainless. For months our staffers followed the aroma of grilled steaks, chicken, and salmon straight to our grill lab to find out what the tests revealed.

Boutique brands take top spots. Vermont Castings, a relatively small company, makes our highest-scoring grill, the Signature Series VCS322SSP, \$1,000, a mid-sized model. Huntington's Patriot grill is

our finest-performing large grill. Huntington calls itself a "barbecuing family," though that family is part of the grilling behemoth Onward Manufacturing. Both aced our cooking tests, producing nicely seared steaks and moist chicken and salmon cooked over low heat. These grills also excelled at indirect cooking, which allows you to slow-cook roasts, ribs, and whole fish and poultry by placing them next to the heat, not directly over it.

When "made in the U.S." matters.

Nearly three-quarters of Americans we recently surveyed told us they had tried to buy a U.S.-made product in the past year, and 60 percent said they always or sometimes would rather buy U.S.-made goods than those made elsewhere. Some of our recommended grills were made in the U.S., including the Vermont Castings and Huntington Patriot, and Weber's Genesis and Summit grills. Among the small models, the Fiesta 24025 is also American-made and offers fine grilling. But so-so indirect cooking kept it from being recommended.

Char-Broil outshines its sleek sister. Saber's website says its grill is "designed and built for discerning consumers who want an exceptional outdoor cooking experience." The three grills we tested from Saber, Char-Broil's upscale sibling, were very good but hardly exceptional, though they're made with premium stainless. And in most instances, the Saber grill was outperformed by a less expensive Char-Broil model.

Two Napoleon grills flare up. To test for flare-up we cooked fatty steaks on a preheated grill for 6 minutes with the lid closed. But we stopped the test on the Napoleon Prestige P500 after just 3½ minutes because we saw excessive amounts of black smoke and flames. After the grill cooled, we found that the firebox had melted and deformed in several places and that the igniters and burners were damaged. We bought and tested a second P500 and a P500RSIB, which has the same firebox and burner design. Though they flared up excessively (but not as much as in the first test), we were able to complete the test on both grills. Neither grill was damaged.

How to choose

Take advantage of summer holiday promotions or end-of-season sales. Having the retailer assemble the grill may save time, but you may have to pay for delivery if the assembled grill doesn't fit in your car. Then keep these tips in mind:

The best suds and sauce

Those final touches can make a difference. For basting at the end of grilling or slathering on while eating, Stubb's Original was the best barbecue sauce from our past tests. Tangy and spicy, it had a touch of smoke. And if you enjoy a cold beer on a hot day, Coors regular stood out in our tests of 10 regular and light lagers. None were excellent, but Coors came fairly close.



Features that count



Consider the cooking area. While larger grills usually have bigger cooking surfaces, there are exceptions. The Brinkmann Vertex Sear 810-3885-S is nearly 6 feet wide yet its cooking area fits just 20 burgers. Use our Ratings to find a cooking surface that matches how much you usually cook, not one for blow-out barbecue parties you throw once or twice a season. We categorize grills based on our measurements of the main cooking area. Companies might also count warming racks and searing burners in their claims.

Think beyond Btu. They tell you how

much gas a grill uses and the heat it can create, but our tests have found that more Btu doesn't guarantee faster preheating or better cooking.

Keep infrared claims in perspective. Infrared burners typically emit intense heat to sear and cook food, though designs differ by manufacturer. We haven't found one infrared burner design that's better than other infrared designs or better than standard burners.

Put safety first. Test a grill's sturdiness with a gentle nudge in several places. Check for sharp corners and edges. Press

down on the side shelves to see how well they'll support a heavy pot. Does the handle place your hand too close to a hot lid? And while some flaring is normal, typically the greater the distance between the grates and burners or flavorizer bar, the fewer the sustained flare-ups.

WATCH OUR VIDEO

Using your smart phone, download the ShopSavvy or the RedLaser app, then scan the code at right.



Overview

Some flare-ups are normal when cooking fatty foods, but **A22**, **A23**, **A28**, **A30**, **A32**, **A39**, **B17**, **C9**, and **C21** flared up more than others we tested.

✓ **CR Best Buy** These blend value and performance. All are recommended.

✓ **Recommended** These offer top performance and often specific strengths.

GREAT MEDIUM GRILLS

A1 Vermont Castings \$1,000

A2 Char-Broil \$400 **CR Best Buy**

A7 Blue Ember \$900

A8 Aussie \$250 **CR Best Buy**

A11 Char-Broil \$200 **CR Best Buy**

A12 Brinkmann \$330

All have electronic igniters and side burners, except for **A1**, which aced all our cooking tests and has coated cast-iron grates. **A2** offers infrared heating, coated cast-iron grates, and a lifetime warranty on its burners. **A7** has an interior light for easier nighttime grilling and an infrared rotisserie. **A8** and **A11** combine an appealing price and performance, but **A8's** burner has only a two-year warranty and **A11** has a one-year warranty. **A11** also lacks premium grates. **A12** has a lifetime warranty on its burner, a rotisserie, and coated cast-iron grates.

LARGE GRILLS TO FEED A GANG

B1 Huntington \$700 **CR Best Buy**

B4 Master Forge \$600 **CR Best Buy**

B6 Blue Ember \$1,000

B8 Brinkmann \$380 **CR Best Buy**

All have electronic igniters, rotisserie or side burners with infrared heat, and stainless-steel or coated cast-iron grates. **B1** adds light to the cooking area and a convenient pullout tray for the gas tank. **B4** is mostly stainless steel for less money. **B6** has interior lights, but **B8** offers the most cooking area of all and, despite its low price, burners that come with a lifetime warranty.

BEST SMALL GRILL

C1 Char-Broil \$250 **CR Best Buy**

This model's igniter, infrared heat, coated cast-iron grates, and a lifetime burner warranty make it sizzle, but its indirect cooking was only so-so. **C4** is a basic, inexpensive grill that evenly cooked at high and low temps but wasn't impressive at indirect cooking.

Ratings Gas grills

All tested models In performance order, within types.

Recommendation	Rank	Brand & model	Price	Overall score	Test results				Features				
					Low-temperature performance	High-temperature evenness	Indirect cooking	Convenience	Electronic igniter	Side burner	Infrared cooking	Stainless-steel grates	Coated cast-iron grates
				0 100	P	F	I	G	V	G	E		
A MEDIUM These have a 370- to 520-inch cooking area, room for 16 to 30 burgers.													
✓	1	Vermont Castings Signature Series VCS300SSP VCS32SSP	\$1,000	85	•	•	•	○	•				•
✓	2	Char-Broil Red 463250511 Gourmet Tru-Infrared 463250512 (Home Depot)	400	84	•	•	•	○	•	•	main		•
✓	3	Weber Genesis E-330 E-310, E-320	800	80	•	•	○	•	•	•			•
✓	4	Char-Broil Red 463250811 Gourmet Tru-Infrared 463251012 (Home Depot)	550	80	•	•	•	○	•	•	main		•
✓	5	Weber Genesis S-330 S-310	950	79	•	•	○	•	•	•		•	
✓	6	Brinkmann 810-2545-W (Walmart)	250	78	•	•	○	○	•				
✓	7	Blue Ember BE50070-584 (Home Depot)	900	78	•	•	•	•	•	•	rotiss.		•
✓	8	Aussie Vantage Series 67C3	250	76	•	•	•	○	•	•		•	
✓	9	Kenmore 03982838 03982844 (Kmart)	300	76	•	•	•	○	•	•			
✓	10	Jenn-Air 720-0336C (BJs)	650	75	•	•	•	○	•		rotiss., side	•	
✓	11	Char-Broil Classic 463211512 (Home Depot)	200	75	•	•	•	○	•	•			
✓	12	Brinkmann Zone 5-in-1 810-2390-S (Home Depot)	330	74	•	•	•	○	•	•			•
✓	13	Weber Summit S-470 E-470	1,900	74	•	•	•	○		•	rotiss.	•	
	14	KitchenAid 720-0745A (Lowe's)	800	70	•	•	•	○	•	•	rotiss., side	•	
	15	Grill Master 720-0697	200	69	•	•	•	○	•	•			•
	16	Char-Broil Commercial Quantum 463247311 Commercial Tru-Infrared 463247512 (Lowe's)	500	69	•	•	•	○	•	•	main	•	
	17	Char-Broil Tru-Infrared 500 IR 463269111	400	69	•	•	•	○	•	•	main		•
	18	Saber R50CC0312 R50CC0612, R50SC0012	1,000	67	•	•	•	○	•	•	main	•	
	19	Vermont Castings VCS401SSP VCS401BBP	1,400	67	•	•	•	○	•		rotiss.		•
	20	Dyna-Glo DGP480CSP-D	400	66	•	•	•	○		•			•
	21	Napoleon Prestige Pro450RB Pro450RSIB	1,200	66	•	•	•	○	•	•	side	•	
	22	Ducane Affinity 3100	400	65	•	•	•	○	•				•
	23	Napoleon Prestige P500RSIB	1,400	64	•	•	•	○		•	rotiss.	•	
	24	Char-Broil Tru-Infrared 500 IR 463269411 Professional 463269211	650	64	•	•	•	○	○	•	main		•
	25	Char-Broil Tru-Infrared Commercial 463247412 (Lowe's)	400	63	•	•	•	○	○	•	main	•	
	26	Weber Spirit E-310 E-320	500	62	•	•	•	○	○	•			
	27	Brinkmann 810-2410-SB (Home Depot)	200	61	•	•	•	○		•			•
	28	Master Forge 1010037 (Lowe's)	380	61	•	•	•	○	○	•		•	
	29	Brinkmann Vertex Sear 810-3885-S (Home Depot)	600	61	•	•	•	○	○	•			•
	30	Superb by Broilmaster SBG2801	1,200	61	•	•	•	○	○	•	rotiss.		•
	31	Weber Spirit SP-320 SP-310	600	60	•	•	•	○	○	•		•	
	32	Napoleon Prestige P500	1,000	60	•	•	•	○	○				•
	33	Broil King Signet 90 986784 LP	650	58	•	•	•	○	○	•			•
	34	Brinkmann Elite 810-3660-SB (Home Depot)	300	57	•	•	•	○	○	•			
	35	Uniflame GBC1134W (Walmart)	170	57	•	•	•	○	○	•			
	36	Aussie Uluru Elite 4	500	56	•	•	•	○	○	•			•
	37	Napoleon Prestige II PT450RBI	1,400	55	•	•	•	○	○	•	main	•	
	38	Ducane Affinity 4100 Series	500	53	•	•	•	○	○	•			
	39	Brinkmann 810-3420-W (Walmart)	150	52	•	•	•	○	○	•			•
	40	Huntington Rebel 602054	200	50	•	•	•	○	○	•			•
	41	Stok Quattro SGP4330 (Home Depot)	250	48	•	•	•	○	○	•			•
	42	Char-Griller Grillin Pro 3001 (Lowe's)	170	47	•	•	•	○	○	•			•

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● Excellent
 ● Very good
 ○ Good
 ● Fair
 ● Poor

CR Best Buy
 Recommended

A MEDIUM continued

43	Urban Islands 4-Burner by Bull (Costco)	\$1,500	39	○	●	○	○	○					●
44	Team Grill Patio Series Pro PPR06091	600	39	○	●	○	○			searing			●
45	Broil King Regal 440 440 Pro, 490, 490 Pro, 420	700	38	○	●	○	○	●	●				●
46	Char-Broil 463440109	200	18	○	●	○	○	●	●				

B LARGE These have more than 520 square inches of cooking area, room for 30 or more burgers.

✓ 1	Huntington Patriot 658184	700	81	●	●	●	○	●	●	rotiss.			●
✓ 2	Jenn-Air 720-0709 (Sam's Club)	950	78	○	●	○	○	●	●	rotiss., searing			●
✓ 3	Weber Summit E-670 [1]	2,500	76	○	○	○	●	●	●	rotiss.			●
✓ 4	Master Forge 3218LTN (Lowe's)	600	76	○	○	○	○	●	●	rotiss., side			●
✓ 5	Kenmore 16136 [D] 16156, 16157 [1]	600	76	○	○	○	○	●	●	rotiss., side			●
✓ 6	Blue Ember BE65078-584 (Home Depot)	1,000	75	○	○	○	○	●	●	rotiss.			●
✓ 7	KitchenAid KFRS361TSS [D] KFRU361VSS	3,500	74	○	○	○	○	●	●	rotiss.			●
✓ 8	Brinkmann 810-1575-W [D] 810-1575-0 (Walmart)	380	73	○	○	○	○	●	●	rotiss., side			●
✓ 9	Emeril by Viking EG300 [1]	800	73	○	○	○	○	●	●				●
10	Kenmore 16135 [1]	475	70	○	○	○	○	●	●				●
11	Saber R67SC0012 [1]	1,600	67	○	○	○	○	●	●	main			●
12	Weber Summit S-650 S-620, E-620 [1]	1,900	66	○	○	○	○	●	●				●
13	Fiesta Blue Ember iQue FGQ65079-U403 [D] Blue Ember iQue FGQ65079 (Sam's Club)	1,000	65	○	○	○	○	●	●	rotiss.			●
14	Brinkmann 810-1750-S (Home Depot) [1]	430	64	○	○	○	○	●	●	rotiss.			●
15	Bond GSC3218WA	600	64	○	○	○	○	●	●				●
16	Brinkmann 810-8501-S [D] 810-8502-SC (Home Depot) [1]	400	60	○	○	○	○	●	●	searing			●
17	Master Forge 6318B (Lowe's) [2]	1,200	54	○	○	○	○	●	●	side			●
18	Char-Broil 463230710 (Walmart)	300	41	○	○	○	○	●	●				●

C SMALL These have less than 370 square inches of cooking area, room for 10 to 15 burgers.

✓ 1	Char-Broil Red Patio 463250211 Gourmet Tru-Infrared 463250212 (Home Depot) [1]	250	72	○	○	○	○	●	●	main			●
2	Brinkmann Portico Collection 810-3260-SB (Home Depot)	140	66	○	○	○	○	●	●				●
3	Saber R33CC0312 R33SC0012 [1]	800	64	○	○	○	○	●	●	main			●
4	Fiesta 24025	100	62	○	○	○	○	●	●				●
5	Weber Spirit E210 [1]	400	61	○	○	○	○	●	●				●
6	Kenmore Patio 85-0143 (KMart)	270	60	○	○	○	○	●	●				●
7	Brinkmann 810-9211-S (Home Depot)	100	60	○	○	○	○	●	●				●
8	Master Forge SH3118B (Lowe's)	330	59	○	○	○	○	●	●	searing			●
9	Master Forge MFA350CNP (Lowe's) [2]	200	58	○	○	○	○	●	●				●
10	Weber Q 320 586002	360	58	○	○	○	○	●	●				●
11	Beefeater Discovery Plus 4 Burners	1,250	57	○	○	○	○	●	●				●
12	Char-Broil Quantum Urban 463246910 [D] 463246911 [1] Commercial TRU-Infrared 463243812 (Lowe's)	270	56	○	○	○	○	●	●	main			●
13	Dyna-Glo DGP350NP-D	300	56	○	○	○	○	●	●				●
14	KitchenAid 720-0819 (Lowe's)	450	55	○	○	○	○	●	●				●
15	TEC G-Sport	1,800	49	○	○	○	○	●	●	main			●
16	Bond Pedestal GSS1916A	400	49	○	○	○	○	●	●				●
17	Cook Number Grill JAG24C [1]	1,000	46	○	○	○	○	●	●				●
18	Char-Broil 463742111 (Lowe's)	140	44	○	○	○	○	●	●				●
19	Aussie Bushman Deluxe 7710	150	42	○	○	○	○	●	●				●
20	Solaire AGBQ-27GIR [1]	1,800	37	○	○	○	○	●	●	main			●
21	Minden Master II [2]	480	32	○	○	○	○	●	●				●

[D] Discontinued, but similar model is available; price is for similar model. [1] Burners have warranty for 10 years or more. [2] This grill flared up more than others we tested.



A1 Vermont Castings



A11 Char-Broil



B4 Master Forge

Guide to the Ratings

Overall score is based on performance, convenience, and features. **Low-temperature performance** combines the evenness of heating over the grill's surface at the low setting (using thermocouples) and the model's ability to cook chicken and fish on the grill's low setting. **High-temperature evenness** is heating evenness over the grill's surface at the high setting, using thermocouples. **Indirect cooking** indicates how well the grill will slow cook foods when only some of the burners are on and the food isn't placed directly over the flames. **Convenience** evaluates construction and materials, ease of use, accessory burners, and propensity of the grill to flare up. **Infrared cooking** indicates, which, if any, burners use that technology. **Price** is approximate retail. Not every model with a rotisserie burner comes with a rotisserie motor and spit.



CR BEST BUY Glidden is one of several paints that beat the top Sherwin-Williams finishes for value.

Paints & stains

21 picks show you shouldn't buy only by price

WHO HAS THE BEST exterior paint? Our new winner among satin and semigloss finishes is Sherwin-Williams, and it shares top honors with California for flat paints. But our tests also prove that other players do almost as well for far less, and they beat the pricey brand when it comes to exterior stains.

We tested 76 paints and stains under grueling outdoor conditions that intensify the effects of sun, sleet, and snow so that one year of exposure equals roughly three on your house. Paying more than \$60 per gallon for Sherwin-Williams' Duration flat, satin, and semigloss paints buys a finish

that still looked impressive after the equivalent of nine years, or about how often most homes are painted. All three also eliminate the usual prime coat. But Glidden's Premium flat and satin paints are two of several finishes that did almost as well for as little as \$21 per gallon.

Sherwin-Williams also made our top picks for semitransparent stains, which show some wood grain. But Behr beat it in that group and won among solid stains. The catch: As with Sherwin-Williams, the particular Behr you choose makes a big difference. Here are the details:

Same brand, different results. Among paints, Sherwin-Williams' Duration line

topped our Ratings, but its Resilience line finished near the bottom. And although Valspar Ultra Premium and DuraMax flats are picks, neither Lowe's product made the grade among satin and semigloss paints.

A tale of three Behrs. Superior durability and resistance to cracking, fading, and mildew helped Behr's Premium Semi-Transparent Weatherproofing Wood Stain place last year's winner, Sikken's, among the also-rans. Behr's Solid Color Deck, Fence & Siding Wood Stain is also tops. But this Home Depot brand's pricier Premium solid stain didn't do nearly as well.

Outside finishes have more VOCs. Almost all interior paints now meet even the toughest regional California limits of 50 grams per liter for volatile organic compounds. But fewer exterior finishes meet that limit for paints or even the higher limit of 100 grams per liter for stains, especially among semitransparent and clear finishes, where it's more difficult to reduce VOCs without losing performance.

How to choose

Don't buy solely by price or brand, and consider these suggestions when you shop for exterior paints or stains:

Choose the right gloss level. Flat and satin finishes are best for siding because they hide flaws by reducing reflections. Semigloss paints add some shine to doors and trim, providing visual contrast. For stains, clear and semitransparent show all or some of the wood grain, though you'll have to reapply them more often.

Insist on top finishes. Hiring a pro? Be sure the contract specifies the brand, line, and number of coats; for paint we generally recommend two top coats plus a prime coat over bare surfaces if needed.

Look for deals. Holiday weekends, including Memorial Day and the Fourth of July, are popular times for paint promos.

Biggest do-it-yourself painting goofs

Labor accounts for about 80 percent of the \$2,500 to \$5,700 a pro might charge to paint a house. You can save by doing it yourself—or pay even more if a pro has to fix your mistakes. Here are the big ones:

▶ Picked the wrong color

Be sure to sample several hues you're considering on the actual siding. If in doubt, go darker rather than lighter because natural light tends to soften color.

▶ Painted in foul weather

Look for clear skies, low wind and humidity, and 50° to 85° F temperatures for at least 48 hours so that the paint or stain sticks or penetrates and dries properly.

▶ Skipped the proper prep

Scrape and sand loose paint. Remove dirt and chalking with a scrub brush or power washer. Prime bare surfaces. Remove old caulking. And fill cracks around windows, doors, and trim with acrylic caulk.

▶ Bought the wrong amount

Refinishing a 2,500-square-foot house takes up to 25 gallons of paint or 12 gallons of stain. A calculator from the Paint Quality Institute, an industry group, will help you pinpoint your needs. (Go to paintquality.com.)

▶ Chose a finish that didn't last

This one's easy: Check our Ratings for a top-performing paint or stain with the gloss or transparency you want.

Ratings Exterior paints

All tested products In performance order, within types.



Rec.	Rank	Product	Price	Overall score	Appearance	Resists	
			Per gallon	0 100	After 3 yr. After 6 yr. After 9 yr.	Cracking Color Dirt Mildew	Claimed VOCs
				P F G V E			

A FLAT May hide minor surface imperfections.

✓	1	California Paints Fres-Coat Velvet Flat	\$42	79	• • •	• • •	100
✓	2	Sherwin-Williams Duration Flat 1	63	79	• • •	• • •	92
✓	3	Glidden Spred Flat	25	77	• • •	• • •	100
✓	4	Glidden Premium Flat (Home Depot)	21	77	• • •	• • •	100
✓	5	Behr Premium Plus Flat (Home Depot)	25	76	• • •	• • •	100
✓	6	Valspar Ultra Premium Flat (Lowe's)	26	75	• • •	• • •	100
✓	7	Valspar Duramax Flat (Lowe's) 1	33	74	• • •	• • •	100
✓	8	Sherwin-Williams Resilience Flat	56	70	• • •	• • •	48

B SATIN Adds slight gloss to finish.

✓	1	Sherwin-Williams Duration Satin 1	64	78	• • •	• • •	107
✓	2	Pratt & Lambert Accolade Eggshell 2	44	76	• • •	• • •	162
✓	3	Glidden Premium Satin (Home Depot)	23	75	• • •	• • •	50
✓	4	Glidden Spred Satin	27	75	• • •	• • •	50
	5	Valspar Duramax Satin (Lowe's) 1	35	72	• • •	• • •	150
	6	Sears WeatherBeater Ultra Satin	35	71	• • •	• • •	53
	7	Sherwin-Williams Resilience Satin	59	70	• • •	• • •	48
	8	Valspar Ultra Premium Satin (Lowe's)	28	70	• • •	• • •	150

C SEMIGLOSS Use mainly for trim, windows, and doors.

✓	1	Sherwin-Williams Duration Gloss 1	65	76	• • •	• • •	41
✓	2	Behr Premium Plus Semi-Gloss Enamel (Home Depot)	28	75	• • •	• • •	150
✓	3	Glidden Spred Semi-Gloss	28	74	• • •	• • •	50
	4	Glidden Premium Semi-Gloss (Home Depot)	25	69	• • •	• • •	50
	5	Valspar Ultra Premium Semi-Gloss (Lowe's)	29	66	• • •	• • •	150

STILL BEING TESTED Completed the equivalent of three to six years' exposure.

	1	Behr Premium Plus Ultra Flat (Home Depot) 1	35	• • •	• • •	100
	2	Valspar Duramax Semi-Gloss (Lowe's) 1	40	• • •	• • •	50
	3	Behr Premium Plus Ultra Satin (Home Depot) 1	37	• • •	• • •	50
	4	Benjamin Moore Aura Flat 1 2	62	• • •	• • •	83
	5	Benjamin Moore Aura Low Lustre 1 2	62	• • •	• • •	50
	6	Behr Premium Plus Ultra Semi-Gloss (Home Depot) 1	38	• • •	• • •	50
	7	Kilz Casual Colors Satin	27	• • •	• • •	50
	8	Behr Premium Plus Satin Enamel (Home Depot)	26	• • •	• • •	100
	9	Kilz Casual Colors Semi-Gloss	28	• • •	• • •	50
	10	California Paints Fres-Coat Satin Gloss	45	• • •	• • •	150
	11	Olympic Premium Flat (Lowe's)	20	• • •	• • •	40
	12	Royal Exteriors by Ace Flat	26	• • •	• • •	50
	13	Glidden Brilliance Collection Flat (Walmart) 1	25	• • •	• • •	50
	14	Color Place Flat (Walmart)	16	• • •	• • •	50
	15	Royal Exteriors by Ace Satin	28	• • •	• • •	50
	16	Royal Exteriors by Ace Semi-Gloss	29	• • •	• • •	50
	17	Glidden Brilliance Collection Satin (Walmart) 1	28	• • •	• • •	50
	18	Glidden Brilliance Collection Semi-Gloss (Walmart) 1	28	• • •	• • •	50
	19	Olympic Premium Satin (Lowe's)	22	• • •	• • •	36
	20	Olympic Premium Semi-Gloss (Lowe's)	24	• • •	• • •	46
	21	Color Place Satin (Walmart)	17	• • •	• • •	50
	22	Benjamin Moore Aura Semi-Gloss 1 2	62	• • •	• • •	50
	23	Color Place Semi-Gloss (Walmart)	18	• • •	• • •	50

1 Self-priming. 2 Manufacturer says product has been reformulated since we tested.



A5 Behr

B3 Glidden

C2 Behr

Overview

Paints and stains that made our list of winners still looked good after the equivalent of up to nine years on a house (three years for stains on a deck). All meet or beat federal VOC limits of 250 grams per liter for paint and 350 to 550 grams per liter for stain. Several also meet stricter regional California limits of 50 grams per liter for paint and 100 for stain. Some offer mildew resistance and, for paints, a built-in primer. Below, we focus on products with special strengths, added value, or both; prices are per gallon.

✓ **CR Best Buy** These products offer the most performance for the price. All are recommended.

✓ **Recommended** These high-performing products are all fine choices and include CR Best Buys.

TOP FLAT AND SATIN PAINTS (siding)

- A1 California \$42
- A5 Behr \$25 **CR Best Buy**
- A7 Valspar \$33
- B1 Sherwin-Williams \$64
- B2 Pratt & Lambert \$44
- B3 Glidden \$23 **CR Best Buy**

Among flat paints, **A1** did best overall and resists a variety of weathering. **A5** did almost as well for less and adds mildew resistance, and **A7** has a built-in primer for far less than the primerless **A2**. Among satins, choose **B1** for its built-in primer, **B2** for its mildew resistance, and **B3** for its low VOCs and value.

FOR WINDOWS AND OTHER TRIM

- C1 Sherwin-Williams \$65
- C2 Behr \$28 **CR Best Buy**
- C3 Glidden \$28 **CR Best Buy**

All are semigloss. **C1** eliminates the time and expense of a prime coat and, like **C3**, meets regional California VOC limits. **C2** adds dirt and mildew resistance and offers the most performance for the price.

TOP STAINS (deck, fence, siding)

- D1 Behr \$28 **CR Best Buy**
- E1 Behr \$36
- F1 Thompson's \$25

Solid stains last longest overall. Among them, **D1** offers the most protection and weathered elements better than the others. **E1** outlasted other semitransparent stains and shows some grain. Choose **E3** if you want to see all the grain and are willing to refinish more often.



Major gripes about pros

▶ Work took too long

Get clear start and end dates, with the understanding that unforeseen problems, such as rotted siding, might cause delays.

▶ Charged more than estimated

Be sure the estimate breaks down labor and material costs, including the number of coats and primer.

▶ New finish didn't last

Ask for warranty protection for the labor involved. The warranty should cover chipping, peeling, blistering, and flaking of the finish for two years.

▶ Painted over faulty finish

Get a detailed description of the surface prep to be done. And be prepared to pay extra for a totally smooth surface where all the old finish is removed.

▶ Damaged plantings

Ask for specific language for how foundation plantings, outdoor appliances, light fixtures, and other items will be protected. Canvas tarps are better than plastic, which can harm delicate plants.

▶ Didn't use the finish I wanted

Specify the brand and line you want. If the pro is basing the price on a deal with a retailer that doesn't carry that finish, be sure the one he uses did well in our tests.

Guide to the Ratings

Overall score for paints and stains is weighted average of each year's appearance for white, blue, and brown (clear for sealers); except for self-priming paints and stains, score is based on two coats over primed pine-clapboard siding. For self-priming paints and stains, score is based on two coats over untreated pine-clapboard siding. Fully tested finishes undergo accelerated outdoor weathering for three years or until appearance falls to Fair; each year approximates three years on vertical surfaces, one year on decks. Displayed scores rounded; products listed by precise overall score. Scores for previously tested products may have changed because of changes in tabulations. **Appearance** denotes long-term testing. **Resists** means score of at least Good for that attribute. **Claimed VOCs** is maximum grams per liter as stated on can. **Price** is approximate retail per gallon.



D1 Behr



E1 Behr



F1 Thompson's

Ratings House & deck stains

All tested products In performance order, within types.

✓ CR Best Buy
 ✓ Recommended

● Excellent
 ● Very good
 ○ Good
 ○ Fair
 ● Poor

	Product	Price	Overall score	Appearance	Resists	
Recommended	Rank	Per gallon		After 3 yr.	After 6 yr.	After 9 yr.
				Cracking	Color	Dirt
						Mildew
						Claimed VOCs

D SOLID STAINS Form paintlike film that shows only texture of wood grain.

✓	1	Behr Solid Color Deck, Fence & Siding Wood Stain (Home Depot)	\$28	80	●	●	●	●	●	100
✓	2	Wolman DuraStain Solid	33	66	○	○	○	○	○	100
✓	3	Sears Weatherbeater Deck, Fence & Siding Solid	21	64	○	○	○	○	○	90
	4	Sherwin-Williams Woodscapes Solid ¹	46	62	○	○	○	○	○	136
	5	Olympic Maximum Deck, Fence & Siding Solid Stain (Lowe's)	36	62	○	○	○	○	○	166
	6	Behr Premium Solid Color Deck, Fence & Siding Weatherproofing Wood Stain (Home Depot)	36	61	○	○	○	○	○	100
	7	Sikkens Rubbol Solid Siding Finish ¹	39	41	○	○	○	○	○	200
	8	Woodman Solid Color Deck Stain	35	27	○	○	○	○	○	250

E SEMITRANSSPARENT STAINS Soak into wood, adding color, but grain is still visible.

✓	1	Behr Premium Semi-Transparent Weatherproofing Wood Stain (Home Depot)	36	60	○	○	○	○	○	100
✓	2	Sherwin-Williams Deckscapes Semi-Transparent ²	43	51	○	○	○	○	○	170
✓	3	Flood TWF-Semi Semi-Transparent Wood Stain (Walmart)	24	47	○	○	○	○	○	250
	4	Sikkens Cetol SRD Semi-Transparent ³	43	39	○	○	○	○	○	250
	5	Olympic Maximum Deck, Fence & Siding Semi-Transparent Stain (Lowe's)	36	35	○	○	○	○	○	233
	6	Wolman DuraStain Semi-Transparent	36	34	○	○	○	○	○	250
	7	Sherwin-Williams Woodscapes Semi-Transparent ¹	46	27	○	○	○	○	○	79

F CLEAR SEALERS Soak into wood, showing grain but allowing the wood to age naturally.

✓	1	Thompson's WaterSeal Advanced Waterproofer ⁴	25	34	○	○	○	○	○	250
	2	Thompson's WaterSeal Waterproofer Plus Clear Wood Protector ³	15	30	○	○	○	○	○	100
	3	Olympic Maximum Waterproofing Sealant (Lowe's)	33	24	○	○	○	○	○	230
	4	Wolman RainCoat Clear Water Repellent	18	23	○	○	○	○	○	250
	5	Benjamin Moore Waterproofer ⁴	22	20	○	○	○	○	○	250
	6	Sherwin-Williams Deckscapes Clear Sealer ²	38	17	○	○	○	○	○	311

STILL BEING TESTED Completed the equivalent of three to six years' exposure.

	1	Benjamin Moore Arborcoat Deck & Siding Solid ⁴	44		○	○	○	○	○	100
	2	Sherwin-Williams Deckscapes Solid ²	43		○	○	○	○	○	122
	3	Flood SWF-Solid Wood Stain (Walmart)	27		○	○	○	○	○	250
	4	Cabot Solid Color Decking Stain (Lowe's) ²	38		○	○	○	○	○	100
	5	Cabot Solid Acrylic Siding (Lowe's) ¹	36		○	○	○	○	○	100
	6	Thompson's WaterSeal Deck & House Solid Latex	23		○	○	○	○	○	100
	7	Sikkens Rubbol Solid DEK Deck Stain ²	41		○	○	○	○	○	250
	8	Behr Semi-Transparent Deck, Fence & Siding	27		○	○	○	○	○	100
	9	Cabot Semi-Transparent Deck & Siding (Lowe's)	38		○	○	○	○	○	250
	10	Thompson's WaterSeal Deck & House Semi-Transparent Latex	22		○	○	○	○	○	100
	11	Ace Wood Royal Semi-Transparent Deck & Siding	30		○	○	○	○	○	100

¹ Recommended only for siding and fences. ² Recommended only for decks. ³ Clean up with mineral spirits. ⁴ Manufacturer claims product reformulated since we tested.



Cars

Road tests, auto products, hot topics

THREE STRIKES
Texting, not wearing
a safety belt, and
one-hand steering
increase driving risks.

Survey: Young drivers at risk

THEY KNOW it's dangerous to use a cell phone behind the wheel. But many teenagers and other young drivers still play the odds by talking or texting on a handheld cell phone or operating a mobile device while driving. Those are the findings of a recent nationally representative survey of drivers 16 to 21 years old by the Consumer Reports National Research Center.

Almost half of the respondents said they had talked on a handheld phone while driving in the previous 30 days. Close to 30 percent said they had texted in that time. And some had operated smart-phone apps (8 percent) or used e-mail or social media (7 percent) while behind the wheel.

Yet almost all of them considered text-

ing, using smart-phone apps, or accessing the Internet to be dangerous while driving; about 80 percent thought it was very dangerous. Also, 63 percent of those surveyed saw talking on a handheld phone while driving as dangerous.

Moreover, most respondents had seen their peers doing similar things in that time. Eighty-four percent saw other young people talking on a handheld phone, more than 70 percent witnessed texting, and about a third saw peers using apps, e-mail, or social media behind the wheel.

Why is that dangerous? Motor-vehicle crashes are the No. 1 cause of death for teenagers, according to the National Highway Traffic Safety Administration. And 11

percent of teenage drivers who died in crashes in 2010 were distracted. Our survey results indicate that young drivers are engaging in behavior that causes them to take their eyes and minds off the road, creating risks for themselves and others.

Young drivers were also asked about the driving habits of Mom and Dad. Forty-eight percent witnessed their parents talking on a handheld phone in the previous 30 days, and 15 percent saw them texting.

What's working

Concern about distracted driving led almost three-quarters of those surveyed to stop or reduce such behavior, they said. More than 60 percent said they were influenced by reading or hearing about the problem, 40 percent by related bans, and close to 30 percent by their family urging them to stop. Almost 20 percent knew someone who had been in a crash caused by distracted driving.

Our survey also found that having peers in the car may help curb distracted driving. Almost 50 percent said they were less likely to talk on a handheld cell phone or text when friends were along. One reason may be that many young people are speaking up; almost half said they had asked a driver to stop using a phone in the car because they feared for their safety.

Whether you're a parent, friend, or sibling, set a good example. Stop the car in a safe place if you need to use a cell phone. And if you're riding with a driver using a phone, ask him or her to put it down and stop gambling with your safety.

Sending the wrong message to future drivers

The temptation to mix cell phones with driving may be starting earlier than we thought. A number of children's "driving" toys—including play cars, trikes, and toy steering wheels—now include toy cell phones as part of the package.

We're not aware of injuries resulting from children multitasking with toy vehicles, but including toy cell phones sends an early message that the behavior is acceptable.

Tom McClure, marketing director at VTech Electronics, which sells the 3-in-1 Smart Wheels, at right, told us, "We have not seen the opinions

you express cited in any studies, but we will certainly continue to make sure we are informed of any issues affecting children's development."

To teach children about the risks of distracted driving, parents need to educate them years before they hand over the real keys. We hope toy makers will

support the government and safety advocates in promoting safe driving by disassociating toy vehicles and phones in their products.



BAD CONNECTION Toy cell phones on "driving" toys tell kids it's OK to mix the two.

SMALL SUVs

Honda CR-V vs. Mazda CX-5

New fuel-efficient models have different personalities

On paper, the redesigned Honda CR-V and new Mazda CX-5 look very similar. They can accommodate five passengers, have comparable dimensions, are available with front- or all-wheel drive, and are priced about the same. They also finished very close in our overall road-test scores—with a 77 and a 75, respectively—just under the class-leading Toyota RAV4 and Subaru Forester.

But these two small SUVs have very distinct characteristics that will probably appeal to different types of drivers. The CR-V is a more family-friendly SUV, with a large backseat, easy access, lots of cargo space, and a comfortable ride. It is also notably quicker and more responsive than the CX-5, with a refined drivetrain. On the downside, the CR-V suffers from pronounced road noise, sizable rear blind spots, and subpar at-the-limit handling. Overall, this SUV is functional and easy to live with, if not particularly exciting to drive.

The CX-5 is more athletic and engaging to drive, thanks to its agile handling, taut

cornering, and responsive steering. It's more at home on a twisty road and is more likely to satisfy enthusiast drivers. The CX-5 also delivers the best fuel economy in its class—25 mpg overall—thanks to Mazda's new Skyactiv technology. And even our midlevel Touring version came well equipped, with a full-power seat, keyless ignition, and a blind-spot monitoring system. But the CX-5's trade-offs include a smaller, noisier cabin; a choppy ride on the highway; and slower acceleration.

Only the CR-V is recommended; we expect above-average reliability. Although the CX-5 scored well enough, it's too new for us to have reliability information.

The driving experience

A 185-hp, 2.4-liter four-cylinder engine provides the CR-V's quicker acceleration. The engine delivers smooth, ample power, coupled with a five-speed automatic transmission that provides super-smooth, responsive shifts. That combo delivered 23 mpg, which is among the best in the class: 2 mpg better than the

previous CR-V but 2 mpg less than the CX-5.

Although the CX-5 squeezes out better gas mileage thanks to a high compression ratio, direct injection, and a six-speed automatic transmission, its 155 hp, 2.0-liter four feels notably underpowered. The SUV is often sluggish from a launch, and the transmission had to perform frequent gear shifts to maintain speed on some roads. Shifting is smooth and responsive, but we found the gated transmission shifter awkward to use. A manual transmission, which is rare in an SUV, is also available; it has a slick, precise shifter.

Though the CX-5 is sportier, both SUVs handle well in everyday driving, with quick, well-weighted steering and controlled body lean in corners. But when we pushed the CR-V to its handling limits, body lean increased dramatically and the vehicle felt unsteady, although its electronic stability control system kept it in line. The CR-V managed an adequate speed in our avoidance maneuver, but it took a lot of effort to keep it on course and it eroded driver confidence.



Honda CR-V

ROAD-TEST
SCORE
77



✓ Recommended



TWO INTO ONE A single knob is used to adjust the radio volume and tuning, which takes getting used to.

Tested vehicle

HIGHS	Powertrain, fuel economy, ride, braking, roomy and functional interior, standard rear camera, crash-test results
LOWS	Road noise, at-the-limit handling, rear blind spot
TRIM LINE	EX
DRIVETRAIN	185-hp, 2.4-liter four-cylinder engine; five-speed automatic transmission; all-wheel drive
MAJOR OPTIONS	None
TESTED PRICE	\$26,455

More test findings

BRAKING	Overall performance is excellent. Stops are impressively short.
HEADLIGHTS	Very good distance for low beams. High beams improve distance but reduce intensity and foreground light.
HEAD RESTRAINTS	The second-row head restraints must be raised to provide adequate protection.
CHILD SEATS	Safety belts can secure front- and rear-facing child seats. Five easy-to-access LATCH anchors allow the installation of LATCH seats in any rear seating position, but not in all three at the same time.

OPENING UP It's easy to fold the rear seat by pulling a single lever.



HINDSIGHT A standard rear-view camera is a nice touch.



Scan for video.

Mazda CX-5

ROAD-TEST
SCORE
75



TIGHTLY PACKED Many of the touch-screen buttons are small and clustered together.

Tested vehicle

HIGHS	Fuel economy, handling, rear seat, blind-spot detection, crash-test results
LOWS	Ride, noise, acceleration, low vents
TRIM LINE	Touring
DRIVETRAIN	155-hp, 2.0-liter four-cylinder engine; six-speed automatic transmission; all-wheel drive
MAJOR OPTIONS	Bose stereo, moonroof
TESTED PRICE	\$27,125

More test findings

BRAKING	Very good, with fairly short stopping distances on dry and wet pavement.
HEADLIGHTS	Low beams reach a good distance but have a sharp cutoff. High beams reach a very good distance.
HEAD RESTRAINTS	All are adjustable and locking. Center-rear restraint might not raise high enough for tall passengers.
CHILD SEATS	Large rear-facing convertible seats installed in the rear-center seat may contact the back of the driver's seat. Forward-facing seats fit easily. Lower LATCH anchors and top-tether anchors are easy to access.



Scan for video.

SIDE WARNING

A blind-spot monitoring system is rare in this class.

Overall, the CX-5 has higher handling limits. But once those limits were exceeded, it showed signs of oversteer and lifted the inside wheel slightly during hard cornering. Ultimately, the ESC system kept the vehicle in good shape, despite kicking in a bit late.

The CR-V is the clear choice if you're looking for a more comfortable ride. Its absorbent suspension provides commendable isolation from bumps and ruts. The CX-5's ride is taut, although it's compliant enough to take the edge off of most bumps. But on the highway, the ride feels choppy and busy. Both SUVs suffer from loud road noise, although the CX-5, with pronounced wind noise and a straining engine boom while accelerating, is noisier than the CR-V and most rivals.

Inside the cabin

Each SUV treats its drivers well. There's a high seating position, with plenty of room and a tilt-and-telescopic steering wheel that will help most drivers find a comfortable driving position. Some CX-5 drivers wished the wheel pulled out a bit more.

A large windshield and front windows help provide good visibility to the front and sides. In the CR-V, large rear roof pillars create big corner blind zones, and the CX-5's large head restraints intrude into the view straight back. A backup camera is standard in the CR-V and

higher-trim CX-5 models, including our Touring. The CX-5's blind-spot detection system generally works well, but it can be a little late in picking up cars in the blind zone, and we had some false-positive warnings.

Front seats in the CR-V are wide and supportive, but there's no lumbar adjustment in LX and EX trim levels. The CX-5's seats are well contoured, with pronounced bolsters that are reminiscent of a sports seat. Some drivers found the bolstering to be too confining around the shoulders. The CR-V is more inviting for rear-

These SUVs will probably appeal to different types of drivers.

seat passengers, with generous leg room and plenty of space for three adults. The seatbacks also recline. The rear seat in the CX-5 is comfortable for two adults, with ample room, but is less comfortable for three.

The cabins in these vehicles are rather basic. In the CR-V, all interior plastics are hard and the door panels look somewhat cheap, although most interior panels fit well. The CX-5's dash is padded, though other plastics

are hard. There are some gaps between components in the instrument panel.

Controls are mostly straightforward and easy to use. In the CR-V, a single knob adjusts radio volume and tuning, which takes getting used to. The CX-5 uses a large, in-dash touch screen, although it's a long reach for the driver and some onscreen "buttons" are small and clustered together, making it difficult to select one at a glance.

It's hit or miss with electronic features. Both vehicles provide Bluetooth compatibility, audio auxiliary and USB inputs, and iPod control through the audio systems. But satellite radio, which is included on many competitors, is a steeply priced \$525 option for the CX-5 and wasn't available at all for our CR-V; it only comes in leather-trimmed versions. Neither SUV provides hands-free voice control for music players.

The CR-V provides generous interior storage and cargo room. For more space, the 60/40-split seatbacks fold in one motion by pulling a lever in the cargo area or a strap alongside either seat. The CX-5 provides a little less cargo space but more versatility, because the rear seatbacks can fold in either a 60/40 or 40/20/40 configuration. There are releases in the cargo area and on the seatbacks, but the seats don't fold in a single motion unless the front seats are pulled forward.

Overview

The best small SUVs provide a lot of versatility for passengers and cargo, drive like family sedans, and deliver reasonable fuel economy. Some offer a small third-row seat for carrying up to seven people.

Recommended These models did well in our road tests, had average or better reliability in our subscriber survey, and performed at least adequately if they were included in government or insurance-industry safety tests.

BEST FOR FUEL ECONOMY

- 1 Toyota RAV4
- 3 Honda CR-V

IF CARGO SPACE IS IMPORTANT

- 1 Toyota RAV4
- 2 Subaru Forester
- 3 Honda CR-V

IF YOU NEED A THIRD-ROW SEAT

- 1 Toyota RAV4

FOR QUICK ACCELERATION

- 3 Honda CR-V
- 5 Nissan Rogue



Ratings

Tested models In performance order.

- Excellent
 - Very good
 - Good
 - Fair
 - Poor
- Recommended

	Make & model	Price as tested	In this group	Overall road-test score	Predicted reliability	Overall mpg
Recommended	Rank			0100 P F G VG E		
SMALL SUVs						
✓	1	Toyota RAV4 (base, 4-cyl.)	\$25,405	82	●	23
✓	2	Subaru Forester 2.5X Premium	25,720	80	●	22
✓	3	Honda CR-V EX	26,455	77	●	23
	4	Mazda CX-5 Touring	27,125	75	new	25
✓	5	Nissan Rogue SV	25,850	73	●	22
✓	6	Kia Sportage LX (2.4)	24,400	70	●	22
✓	7	Hyundai Tucson GLS	24,090	70	○	22

Why some vehicles are not recommended The Mazda CX-5 is too new for us to have reliability data.

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SMALL HATCHBACKS

Subaru Impreza vs. Kia Soul

Two versatile cars have big differences in styling and performance

The Subaru Impreza and Kia Soul are compact, versatile cars that look very different from each other. The Impreza has a low, sporty stance and a traditional hatchback design. The tall, less-expensive Soul is dressed in funky, boxy styling that has become more common in recent years.

But it's on the road where the biggest differences are apparent. The all-wheel-drive Impreza (\$22,345), which was redesigned for 2012, has a smooth, comfortable ride, and the Soul (\$19,270) can be unpleasantly stiff. Although the Soul is notably quicker thanks to recent engine tweaks and a new six-speed automatic transmission, performance is marred by much longer braking distances.

In some ways, the two cars are very alike, providing easy access, simple controls, similar cargo room and turning circles, and the same commendable fuel economy of 26 mpg overall. Each also suffers from a noisy cabin.

The Impreza's overall road-test score of 79 places it second in our small-hatchback Ratings, behind the Volkswagen Golf. The less-refined Soul scored a 66, but it's still a good value. We expect average or better reliability from both.

The driving experience

Each car is powered by a 2.0-liter four-cylinder engine. To improve fuel economy, Subaru

downsized from the previous 2.5-liter engine and now uses a continuously variable transmission. The Impreza's gas mileage is impressive for an AWD car, but the CVT was overly aggressive with engine braking when going downhill and often held engine revs too high, resulting in added engine noise. The Soul's six-speed automatic transmission works well.

These cars deliver nimble handling, but the Impreza is more enjoyable. The grippy 17-inch performance tires on our Impreza Sport help it brake and handle better than the Impreza Premium sedan we tested for the last issue. Each car proved secure and posted a quick speed in our avoidance maneuver.

In contrast to the Impreza's impressive suspension isolation, the Soul telegraphs bumps into the cabin, but the ride improves on the highway. Both cars let in lots of engine and road noise, and the Soul adds excessive wind noise to the mix.

Inside the cabin

Drivers will find plenty of room in either cabin. Both have telescopic steering wheels, but the Impreza's doesn't push in enough for some drivers and the Soul's doesn't extend enough.

The Impreza's front seats are generous and firm, though some drivers found the seatback support to be uneven. The rear seat can fit

three adults comfortably. The Soul's front seats are firm and flat, and less supportive for long drives. Its rear bench is very spacious and supportive for two but too narrow for three.

Both interiors are trimmed with a lot of hard plastics, although the Impreza adds soft tops to the dashboard and doors. Gauges and controls are simple in either car, with large, high-mounted climate and audio controls.

The Soul has much better electronics overall. Its Bluetooth works better than the Impreza's, it includes satellite radio capability, and the optional high-end audio system has a voice-activated system for operating a portable music player and a helpful backup camera, which is rare for this price.

Cargo storage is modest in each car, although the Soul has a bit more cargo space and a flat floor for easy loading.

How they compare

Rec.	SMALL HATCHBACKS/ WAGONS	0 100					
		P	F	I	G	V	E
✓	Volkswagen Golf (2.5)	85					
✓	Subaru Impreza Sport Premium	79					
✓	Scion xB	68					
✓	Kia Soul Plus	66					



Subaru Impreza

ROAD-TEST
SCORE
79



✓ Recommended



BASIC CABIN

The interior has a lot of hard plastics, but the dash top and door panels are nicely padded.

Tested vehicle

HIGHS	Ride, handling, braking, fuel economy (for AWD), rear seat, visibility, controls, cargo versatility
LOWS	Noise, excessive engine braking with CVT
TRIM LINE	Sport Premium
DRIVETRAIN	148-hp, 2.0-liter four-cylinder engine; continuously variable transmission; all-wheel drive
MAJOR OPTIONS	None
TESTED PRICE	\$22,345

More test findings

BRAKING	Excellent overall.
HEADLIGHTS	Low beams have good brightness but just reach far enough; high beams are very good.
ACCESS	Easy overall, but it takes some ducking to enter.
VISIBILITY	Big windows help with visibility, but tall head restraints can impair the rear view.
HEAD RESTRAINTS	The center-rear restraint is too low to protect an adult, even in its highest position.
DRIVING WITH KIDS	The owner's manual discourages installing any child seat in the center-rear position unless it can be secured there. We were able to fit both front- and rear-facing seats in that position. LATCH anchors in the outboard seats are easy to access, and there are three top-tether anchors.



SPACED OUT The Impreza has a relatively roomy rear seat for such a small car.



HANDY DANDY Opening and closing the rear gate is easy, and the grab pocket keeps hands clean.



Scan for video.

Kia Soul

ROAD-TEST
SCORE
66



✓ Recommended



BIG SWITCHES

The Soul has large, simple controls that are mounted high on the dash.

Tested vehicle

HIGHS	Controls, rear seat, access, cargo versatility
LOWS	Stiff ride, braking, noise, fit and finish, rear visibility
TRIM LINE	Plus
DRIVETRAIN	164-hp, 2.0-liter four-cylinder engine; six-speed automatic transmission; front-wheel drive
MAJOR OPTIONS	Automatic on/off headlights, portable music player, voice control, rear camera, upgraded Infinity audio system
TESTED PRICE	\$19,270

More test findings

BRAKING	Stopping distances were long, especially on wet pavement. The 2010 Soul we previously tested had shorter stops with different tires.
HEADLIGHTS	Low-beam light shines a short distance ahead and has limited intensity.
ACCESS	Very easy, with a tall stance and square doors.
VISIBILITY	Big windows help with visibility, but fat roof pillars can impair the view aft. A rear-view camera is available and works well.
HEAD RESTRAINTS	The center-rear restraint is too low to provide protection for an adult, even when it's raised.
DRIVING WITH KIDS	It might prove difficult to secure a rear-facing child seat in outboard rear areas using safety belts alone. The seatbacks provide three top-tether anchors.



SOUNDING BOARD The Soul has touch-screen radio controls and speech recognition for audio players.



Scan for video.



HIGH CHAIR The Soul is roomy, with a tall rear seat.

LUXURY SUVs

Mercedes-Benz ML350 vs. BMW X5

Two pricey SUVs are improved but still fall short of the class leaders

Helped by an impressively quiet and luxurious cabin, the redesigned Mercedes-Benz ML350 beat the sportier, updated BMW X5 in a match between two German luxury SUVs.

The new ML jumped seven points in our Ratings, with an overall road-test score of 76, because it's more fuel efficient, quicker, and quieter than the previous model. The transmission and controls are also improved, although this ML doesn't handle as well.

With a turbocharged six-cylinder base engine that's quicker and more fuel-efficient than the previous one, the X5 gained two points to earn a 69. But its choppy ride and overly heavy steering did not improve. Also heavy is the X5's price of \$62,675, almost \$6,000 more than our comparably equipped ML's \$56,960.

Both vehicles rank midpack in this category, below the less expensive Acura MDX (\$46,715) and Lexus RX 350 (\$47,381). Although they scored well enough in our tests, neither model is recommended because the ML350 is too new for us to have reliability data and the turbo X5 has had below-average reliability.

The driving experience

We tested these SUVs with their popular six-cylinder gasoline drivetrains, although

diesel and eight-cylinder engines are available for each. The ML's 302-hp, 3.5-liter V6 is mated to a seven-speed automatic transmission, and the X5's 300-hp, 3.0-liter turbo six is mated to an eight-speed automatic. They provide smooth, powerful acceleration and delivered 18 mpg overall on premium gas, three less than the Lexus RX 350's 21 mpg. The ML350 can tow an impressive 7,200 pounds, topping the BMW's 6,000-pound limit.

In everyday driving, these SUVs exhibited good handling, with little body lean. The ML's steering is responsive but a touch vague. The more agile X5 holds the edge in handling and steering, but its steering feels heavy in low-speed situations such as when parking. At its handling limits, the X5 was capable and controlled; the ML350 was considerably less capable, with lower limits.

The trade-off for the X5's sportiness is a stiff and choppy ride that's particularly annoying at low speeds. Here, the ML350 wins with a more supple, composed ride. And although each vehicle has a quiet cabin, the ML350's is exceptionally so.

Inside the cabin

Both cabins are very posh. Drivers of all sizes will find plenty of room and a good range of power-seat and steering-wheel adjustments

in either SUV. And their second-row seats are comfortable and roomy enough for three.

We bought our X5 with an optional third-row seat, which is suitable only for small children. The ML doesn't offer a third row; the larger Mercedes-Benz GL has one, but it costs about \$4,000 more.

Controls are complicated in these vehicles, but the ML350 has more direct radio hard keys and simpler menus than the X5's iDrive. Each has straightforward climate controls and an awkward electronic shifter.

The X5's optional third-row seat takes up most of the cargo space when the seatback is up. With it folded, the BMW's cargo area is slightly smaller than the ML's roomy hold. Cargo space in both can be extended by folding the split rear seatbacks.

How they compare

Rec.	LUXURY SUVs	0	100
		P	F G V E
✓	Acura MDX	85	
✓	Lexus RX 350	79	
	Mercedes-Benz ML350	76	
	BMW X5 35i Premium	69	
	Volvo XC90 3.2	58	



Mercedes-Benz ML350

ROAD-TEST
SCORE
76



SWITCHED OUT
Improved controls include a cruise-control stalk that's better located so you don't accidentally hit it.

Tested vehicle

HIGHS	Quietness, smooth transmission, acceleration, front-seat comfort, fit and finish, towing capacity
LOWS	Steering feel, some complicated controls, backup camera only works with radio on
TRIM LINE	—
DRIVETRAIN	302-hp, 3.5-liter V6; seven-speed automatic transmission; all-wheel drive
MAJOR OPTIONS	19-inch wheels, panoramic sunroof, heated steering wheel, trailer hitch, navigation, running boards, rear camera, memory seats
TESTED PRICE	\$56,960

More test findings

BRAKING	Short stops in the dry, less impressive in the wet.
HEADLIGHTS	Low-beam lights provide good intensity but illuminate a very short distance.
ACCESS	Easy overall, but optional running boards are more of a hindrance than a help.
VISIBILITY	Head restraints and thick pillars obscure the rear and side views. The rear-view camera displays an image only when the radio is on.
HEAD RESTRAINTS	The rear-center head restraint must be raised to protect taller passengers.
CHILD SEATS	Outboard head restraints may need to be removed for taller child seats. Top tether and LATCH anchors are easy to access.



WATCH YOUR STEP
The optional running boards are likely to get you dirty while giving you a leg up.



PUSH UP
You can control how high the power tailgate opens by a long press of the switch.



Scan for video.

BMW X5

ROAD-TEST
SCORE
69



DIGGING DEEP
Many radio functions require several steps of navigating menus through a console-mounted controller.

Tested vehicle

HIGHS	Handling, smooth transmission, acceleration, front-seat comfort, fit and finish
LOWS	Choppy ride, controls, tiny third-row seat, heavy steering, price, reliability
TRIM LINE	xDrive35i Premium
DRIVETRAIN	300-hp, 3.0-liter, turbocharged inline six-cylinder engine; eight-speed automatic transmission; AWD
MAJOR OPTIONS	Keyless entry and ignition, backup camera, navigation, heated power seats, power tailgate, 19-inch wheels, panoramic moonroof, third-row seat, running boards
TESTED PRICE	\$62,675

More test findings

BRAKING	Very good stopping distances overall.
HEADLIGHTS	Good overall performance.
ACCESS	Easy overall, but optional running boards are more of a hindrance than a help.
VISIBILITY	Head restraints and thick pillars obscure the rear and side views. A rear-view camera helps with backing up.
HEAD RESTRAINTS	The second-row center and third-row restraints must be raised for taller passengers.
CHILD SEATS	Some forward-facing seats may not rest flush against the seatback in the second-row center. LATCH may be hard to access. BMW doesn't recommend using child seats in the third row.



LONG REACH The X5's split tailgate makes it necessary to bend far forward to load or unload.

SUN SCREEN
Shades on the rear doors are a nice touch.



Scan for video.

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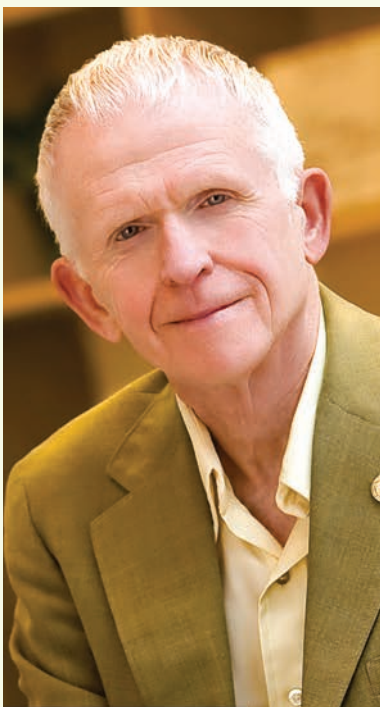
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CARS ROAD TESTS



Volvo XC90

The Volvo XC90 was lightly freshened for 2013, but its design dates back to 2003 and isn't competitive among today's luxury SUVs. Its reliability has been below average and, with a test score of 58, it scored too low to be recommended.

A 240-hp, 3.2-liter six-cylinder is the only available engine. A more powerful V8 was discontinued. Matched with a six-speed automatic transmission, the XC90 delivers slower acceleration and worse fuel mileage than more powerful competitors. We recorded a middling 17 mpg overall on regular fuel with our all-wheel-drive model.

Pronounced body lean and relatively slow steering make the XC90 more ungainly in normal driving than competing European models, but steering is well weighted, with decent feedback. The ride is stiff and busy, but it settles down at highway speeds. At the track, the Volvo reached its cornering limits early, but stability control helped keep it on course.

Spacious cabin

The XC90's interior is spacious, versatile, and well finished, with comfortable seats all around and a high seating position and good visibility for the driver. The third-row seat is suitable only for kids. Climate controls are simple, but the radio is not intuitive. The outdated navigation system can't be programmed by voice. It shares a pop-up screen with a backup camera, but the screen rises too slowly after shifting into reverse to be effective as a backup aid.

Its cargo area is roomy, and a flat floor makes loading easy.



Scan for video.



SLOW MOTION It takes 10 seconds for the rear-view screen to rise and show an image. By that time, you could be done backing up.

Compare

✓ Recommended

✓ Recommended

✓ Recommended



VERSION	Honda CR-V	Mazda CX-5	Subaru Impreza	Kia Soul	Mercedes-Benz ML350	BMW X5
TRIM LINE	EX	Touring	Sport Premium	Plus	—	xDrive35i Premium
PRICE: BASE/TESTED ^①	\$25,645 /\$26,455	\$25,145 /\$27,125	\$20,595 /\$22,345	\$17,300 /\$19,270	\$48,990 /\$56,960	\$55,200 /\$62,675
DRIVETRAIN						
Engine	2.4-liter 4-cyl. (185 hp)	2.0-liter 4-cyl. (155 hp)	2.0-liter 4-cyl. (148 hp)	2.0-liter 4-cyl. (164 hp)	3.5-liter V6 (302 hp)	3.0-liter 6-cyl. (300 hp) turbo
Transmission	5-speed automatic	6-speed automatic	CVT	6-speed automatic	7-speed automatic	8-speed automatic
Drive wheels	AWD	AWD	AWD	Front	AWD	AWD
TIRES TESTED	Bridgestone Dueler H/P Sport	Yokohama Geolandar G91,	Yokohama Avid S34,	Hankook Optimo H426,	Pirelli Scorpion Verde All	Bridgestone Dueler H/L 400*
Model & size	AS, size 225/65R17 102T	size P225/65R17 100H	size P205/50R17 88V	size P205/55R16 89H	Season, size 255/50R19 107H	RFT, size 255/50R19 107H
RATINGS						
PERFORMANCE						
Acceleration	○	○	○	●	●	●
0 to 60 mph, sec.	9.2	10.0	9.4	8.6	6.8	7.0
45 to 65 mph, sec.	5.8	6.4	6.1	5.9	4.9	5.0
Quarter-mile, sec.	17.0	17.7	17.3	16.7	15.2	15.4
Transmission	●	●	●	●	●	●
Routine handling	●	●	●	●	●	●
Emergency handling	●	●	●	●	●	○
Avoid. maneuver, speed, mph	50.0	53.5	52.5	54.0	48.0	50.5
Braking	●	●	●	○	●	●
From 60 mph, dry/wet, ft.	128/135	133/138	127/138	149/172	138/156	131/149
Headlights	●	○	○	●	●	○
COMFORT AND CONVENIENCE						
Ride	●	○	●	○	●	○
Noise	○	○	○	○	●	●
Driving position	●	●	○	●	●	●
Front-seat comfort	●	●	●	●	●	●
Rear/third-seat comfort	●	●	●	●	●	●/●
Access	●	●	●	●	●	●
Controls and displays	●	●	●	●	●	●
Interior fit and finish	○	○	●	○	●	●
Cargo area	○	○	●	●	○	○
PREDICTED RELIABILITY	●	New	●	○	New	●
FUEL						
Overall mpg	23	25	26	26	18	18
City/highway mpg	16/32	19/32	19/33	20/33	13/25	12/25
Type	regular	regular	regular	regular	premium	premium
Capacity, gal./Cruising range, mi.	15.3/355	15.3/385	14.5/375	12.7/335	24.6/450	22.4/405
Annual cost, 12K mi. at \$4.00/gal.	\$2,055	\$1,895	\$1,860	\$1,825	\$2,750 @ \$4.20/gal.	\$2,790 @ \$4.20/gal.
SAFETY						
CRASH TESTS						
IIHS frontal offset	Good	Good	Good	Good	Good	Good
IIHS side	Good	Good	Good	Good	Good	Good
IIHS rear	Good	Good	Good	Good	Good	Good
IIHS roof strength	Good	Good	Good	Good	Good	NA
NHTSA front, driver/pass.	●/●	NA/NA	●/○	●/●	NA/NA	NA/NA
NHTSA side, driver/rear	●/●	NA/NA	●/○	●/●	NA/NA	NA/NA
NHTSA rollover 2WD/4WD	○/○	NA/NA	NA/●	○/NA	NA/NA	NA/●
AIR BAGS						
Side, front/rear	std./no	std./no	std./no	std./no	std./std.	std./no
Head protection	standard	std. w/rollover	standard	standard	std. w/rollover	std. w/rollover
ACTIVE SAFETY						
Antilock brakes	standard	standard	standard	standard	standard	standard
Traction control	standard	standard	standard	standard	standard	standard
Stability control	standard	standard	standard	standard	standard	standard
SPECIFICATIONS						
DIMENSIONS AND WEIGHT						
Length/width/height, in.	178/72/65	179/72/66	174/69/60	162/70/63	189/76/71	191/76/70
Wheelbase, in.	103	106	104	100	115	116
Turning circle, ft.	39	39	38	37	40	42
Ground clearance, in.	5.5	7.0	5.0	5.5	7.5	8.5
Curb weight, lb. (% front/rear)	3,450 (58/42)	3,420 (56/44)	3,055 (60/40)	2,845 (62/38)	4,915 (52/48)	5,045 (47/53)
Maximum load, lb.	850	850	900	850	1,080	1,290
Cargo volume, cu. ft.	36.0	33.0	23.0	24.5	37.5	36.0
Towing capacity, lb.	1,500	2,000	NR	NR	7,200	6,000
INTERIOR ROOM						
Front shoulder room, in.	58.0	56.5	55.5	55.0	58.0	59.5
Front leg room, in.	40.5	42.0	42.0	40.0	41.5	40.5
Front head room, in. ^②	4.0	4.0	5.0	5.0	4.5	3.5
Rear shoulder room, in.	54.5	54.0	53.0	53.5	57.5	57.0
Rear leg room, in.	29.0	28.5	29.5	27.0	27.0	26.5
Rear head room, in. ^②	4.0	4.5	3.0	5.5	4.5	3.0
Third-row shoulder room, in.	—	—	—	—	—	45.0
Third-row leg room, in.	—	—	—	—	—	20.0
Third-row head room, in. ^②	—	—	—	—	—	0.0

^① Based on sticker price at time of purchase. ^② Above a person 5'9" tall.

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Define 'better'

An Ohio reader wondered why the newer Campbell's Select Harvest Vegetable Medley Soup was "now even better!" It has more sodium, more sugars, and less protein than the old. A customer-service rep said the company changed some soups "because although we were getting praise for their healthfulness, they did not meet taste expectations."



Calling all lawyers

How complicated could a step stool be (one with the name Simplify, no less)? The label lists four cautions under "Inspection," two under "Set-up," and seven under "Proper use." Our favorite: "Do not leave step stool unattended."



Oyster Award

Great—a gadget to open annoying plastic packaging. But wait. It's packaged in ... annoying plastic packaging. At least the makers have a sense of humor.

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Hi-YAH!

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That's health, folks

"Must be why they don't get many complaints!" notes a Louisiana reader.

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You think?



Next, decorative crutches

This rosewood and brass walking stick may have "beautiful craftsmanship!" and elegance that "never goes out of style!" It may even be "the perfect gift!" But it lacks one essential trait.

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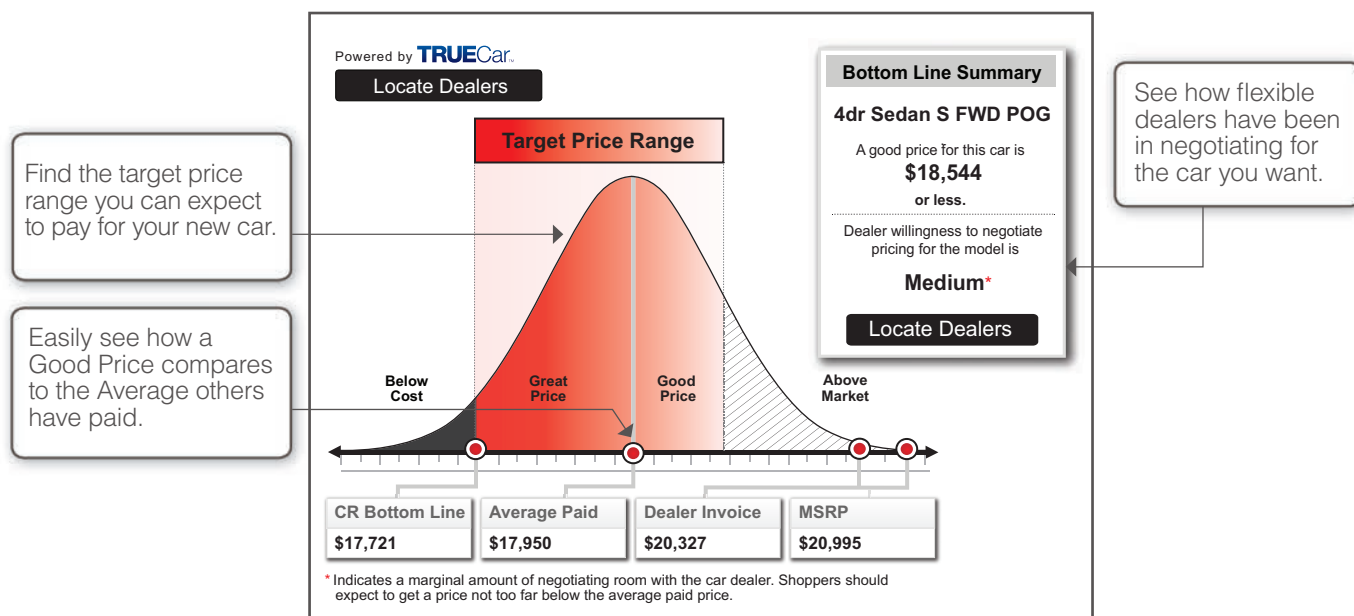
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Canada Extra

Information from CONSUMER REPORTS® for Canadian readers

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How to use the Canada Extra section

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




You can use this section in either of two ways: Start with the main report, read about the products that interest you, and turn to this section to find whether they're sold—and for what price—in Canada. Or start here, find products sold in Canada whose price and overall score appear promising, and read more about them in the main report and full Ratings chart; page numbers appear with each Canadian report. (For some products, the Canadian model designation differs slightly from the one used in the U.S.)

In most cases, the prices we list here

are the approximate retail in Canadian dollars; manufacturers' list prices are indicated by an asterisk (*). Check marks 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 32D, the manufacturer's phone number and Web address in Canada, so that you can call or go online to get information on a model you can't find in the stores. (Many products that aren't available in Canadian stores can be bought online.)

We appreciate your support but we don't take it for granted. Please write to CanadaExtra@cu.consumer.org and tell us what you think. We can't reply to every e-mail message or implement every suggestion, but with your help we'll try to keep growing to serve your needs.

Paul Reynolds, *Canada Extra editor*

-  **CR Best Buy** Products with this icon offer the best combination of performance and price. All are recommended.
-  **Recommended** Models with this designation perform well and stand out for reasons we note.
-  **Don't Buy** We label products with this icon when we judge them to be safety risks or to have serious performance problems.


Cookware

Report and Ratings, page 40

Five of the 15 tested models are available, including one of the recommended models.

Rec.	Rank	Brand & model	Price	Overall score
				0 100 P F G VG E

NONSTICK COOKWARE Most are made of aluminum.

	3	EarthPan Hard Anodized	\$160	72
	7	Cuisinart Green Gourmet	230	62
	8	Berndes Signo Classic 697101 	235	61

Rec.	Rank	Brand & model	Price	Overall score
				0 100 P F G VG E

NONSTICK COOKWARE continued

	12	EarthPan II 	\$155	40
	13	Nordic Ware Rangeware	110	40

 Dishwasher safe.

Gas grills

Report, page 42; Ratings, pages 44-45

Forty-six of the 85 tested medium, large, and small grills are available, including 11 of the recommended models.

Rec.	Rank	Brand & model	Price	Overall score
				0 100 P F G VG E

A MEDIUM These have a 370- to 520-inch cooking area, room for 16 to 30 burgers.

✓	1	Vermont Castings Signature Series VCS322SSP ¹	NA	85
✓	2	Char-Broil Gourmet TRU-Infrared 463250512 (Home Depot) ¹	\$ 480	84
✓	3	Weber Genesis E-330	1,000	80
✓	5	Weber Genesis S-330 ¹	1050	79
✓	7	Blue Ember BE50070-584 (Home Depot)	800	78
✓	13	Weber Summit S-470	2,000	74
	14	KitchenAid Item #6702 (Lowe's)	900	70
	15	Grill Master 4 Burner Item #134489 (Lowe's)	230	69
	16	Char-Broil Commercial TRU-Infrared 463247512 (Lowe's) ¹	650	69
	18	Saber R50CC0312 ¹	NA	67
	19	Vermont Castings VCS401SSP ¹	NA	67
	23	Napoleon Prestige P500RSIB ¹ ²	NA	64
	25	Char-Broil Commercial TRU-Infrared 463247412 (Lowe's) ¹	500	63
	26	Weber Spirit E-310 ¹	600	62
	27	Brinkmann 810-2410-F (Home Depot)	260	61
	28	Master Forge Item #97709 (Lowe's) ²	450	61
	31	Weber Spirit SP-320 SP-310 ¹	NA	60
	32	Napoleon Prestige P500 ¹ ²	NA	60
	33	Broil King Signet 90 986784 LP	NA	58
	34	Brinkmann Elite 810-3660-F (Home Depot)	350	57
	35	Uniflame GBC1134WS-C (Walmart)	200	57
	38	Ducane Affinity 4100 Series	500	53
	41	Stok Quattro SGP4330 (Home Depot) ¹	340	48
	42	Char-Griller Item #296447 (Lowe's)	200	47
	45	Broil King Regal 440	NA	38

Rec.	Rank	Brand & model	Price	Overall score
				0 100 P F G VG E

B LARGE These have more than 520 square inches of cooking area, room for 30 or more burgers.

✓	3	Weber Summit E-670 ¹	\$2,600	76
✓	4	Master Forge 3218LTN (Lowe's)	700	76
✓	6	Blue Ember BE65078-584 (Home Depot)	1,000	75
✓	8	Brinkmann 810-2575-F (Walmart)	450	73
	11	Saber R67SC0012 ¹	NA	67
	12	Weber Summit S-650 ¹	2,200	66
	16	Brinkmann 810-8502-F (Home Depot) ¹	500	60
	17	Master Forge Item #221894 (Lowe's) ²	1,600	54
	18	Char-Broil 463230712 (Walmart)	400	41

C SMALL These have less than 370 square inches of cooking area, room for 10 to 15 burgers.

✓	1	Char-Broil Gourmet TRU-Infrared 463250212 (Home Depot) ¹	350	72
	3	Saber R33CC0312 ¹	NA	64
	4	Fiesta 24025	100	62
	5	Weber Spirit E210 ¹	500	61
	8	Master Forge SH3118B (Lowe's)	450	59
	9	Master Forge Smart Space Living (Lowe's) ²	200	58
	10	Weber Q 320 586002	440	58
	12	Char-Broil Commercial TRU-Infrared 463243812 (Lowe's)	300	56
	13	Dyna-Glo 2 Burner Smart Space Living	400	56
	14	KitchenAid Item #97896 (Lowe's)	500	55
	15	TEC G-Sport	1,980	49
	21	Minden Master II ²	NA	32

¹ Burners have warranty for 10 years or more. ² This grill flared up more than others we tested.

Dehumidifiers

Report and Ratings, page 38

Four of the 18 tested dehumidifiers are available.

Rec.	Rank	Brand & model	Price	Specs	Overall score
				Tank size (pt.) Claimed pt. (per day)	0 100 P F G VG E

A LARGE CAPACITY Best for large or very wet spaces, this captures the most moisture per day.

	6	Danby DDR6009REE*	\$250	15 60	77
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Rec.	Rank	Brand & model	Price	Specs	Overall score
				Tank size (pt.) Claimed pt. (per day)	0 100 P F G VG E

B MEDIUM CAPACITY Best for medium or small spaces that are damp but not wet.

	6	DeLonghi DD50PCA	\$300	12 50	71
	7	LG LD450EAL ^D	250	17 45	69
	8	Danby DDR5009REE*	230	14 50	69

^D Discontinued, but similar model is available. *Fan stays on until bin is full, using more energy.

Air purifiers

Report, page 36; Ratings, pages 36-37

Twenty of the 36 tested portable and whole-house air purifiers are available, including six of the recommended models. In addition, there is one model that is designated as Don't Buy: Performance Problem.

Rec.	Rank	Brand & model	Price	Annual operating cost	Overall score
					0 100 P F G V E

A PORTABLES All are filter-based units.

✓	1	Whirlpool AP51030K	\$ 330	\$120	74
✓	3	Blueair 503	660	160	67
✓	5	Blueair 650E	880	160	65
	8	Honeywell True HEPA 50250 & 50255	270	60	56
	9	Blueair 403	550	120	55
	12	3M Filtrete Ultra Clean Air Purifier FAP03-RS	300	210	54
	13	FilterStream AirTamer A710	330	180	53
	14	Amway Atmosphere 101076	1,290	155	51
	17	Vollara FreshAir HEPA US40726B	500	80	48
	19	Humanscale Zon HZAB	310	100	44
	23	Honeywell Hepa Clean HHT-145 or HHT-149	240	40	38
	25	Whirlpool APT40010R	200	90	34
	26	Germ Guardian AC5000BCA	190	80	33
	29	Hoover WH10600	200	45	19

Rec.	Rank	Brand & model	Price	Annual operating cost	Overall score
					0 100 P F G V E

DON'T BUY: PERFORMANCE PROBLEM INEFFECTIVE AT REMOVING DUST AND SMOKE.

X		Lightair IonFlow 50 Surface	\$300		
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B WHOLE-HOUSE SYSTEM These filter-based systems require professional installation.

✓	1	Lennox Healthy Climate HC16	320	\$100	94
✓	2	Carrier EZ Flex Filter Cabinet	300	100	72

C WHOLE-HOUSE FURNACE FILTERS These filter-based products can be installed by the do-it-yourselfer.

✓	1	3M Filtrete Elite Allergen 2200 MPR	40	40	65
	2	3M Filtrete 1900 MPR	30	30	54
	3	3M Filtrete Micro Allergen 1000 MPR	20	20	46
	5	Flanders NaturalAire FPR 8	10	40	28

Blood pressure monitors

Report and Ratings, page 41

Twelve of the 21 tested arm and wrist blood pressure monitors are available, including seven of the recommended models.

Rec.	Rank	Brand & model	Price	Overall score
				0 100 P F G V E

A ARM MONITORS

✓	1	Omron 10 Series BP785CAN	\$40*	89
✓	4	Omron 5 Series BP742CAN	100	86
✓	5	LifeSource UA-787EJCN	95*	86
✓	8	iHealth Dock BP3	100*	81
✓	9	LifeSource Advanced One Step UA-767-PlusAC	90	81
✓	11	Withings BP-800	130	80
	13	HoMedics Automatic BPA-A04 OOCA	65	65
	14	LifeSource Premium UA-853ACNAC	110	56

Rec.	Rank	Brand & model	Price	Overall score
				0 100 P F G V E

B WRIST MODELS

✓	1	Omron 7 Series BP652CAN	\$120	95
	3	LifeSource Advanced Memory UB-512	80	75
	4	Omron Ultra Premium HEM-670ITCAN	120	59
	6	HoMedics Automatic BP-W040-00CA	30	53

Autos

Report, page 50; Ratings, page 52

All of the tested vehicles are available in Canada.

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
SMALL SUVs								
Honda CR-V	\$25,990-\$34,990	3.6	9.7	3.9	19.5	14.8	7.2	10.1
Mazda CX-5	22,995-32,495	3.8	10.6	4.4	20.3	12.5	7.4	9.3
SMALL HATCHBACKS/WAGONS								
Subaru Impreza	19,995-28,095	3.9	10.0	4.2	19.9	12.3	7.2	9.1
Kia Soul	16,695-25,495	3.4	9.2	4.0	19.3	12.0	7.1	9.0
LUXURY SUVs								
Mercedes M-Class	57,900-99,900	2.6	7.2	3.7	17.5	18.7	9.3	12.8
BMW X5	61,800-98,300	2.8	7.4	3.6	17.7	19.3	9.3	13.0
Volvo XC90	48,900-60,025	3.7	10.2	4.4	19.9	19.8	9.9	13.6

Contact info

How to reach manufacturers in Canada.

Amway
800-253-6500
amway.ca

Berndes
419-331-8000
berndes.de.us

Blueair
888-258-3247
info@blueair.com

Blue Ember
800-265-2150
blueembergrills.com

Brinkmann
800-468-5252
brinkmann.net

Broil King
800-265-2150
broilkingbbq.com

Carrier
800-227-7437
residential.carrier.com

Char-Broil
Call local retailer
charbroil.com

Char-Griller
Call local Lowe's
lowes.ca

Cuisinart
800-472-7606
cuisinart.ca

Danby
800-263-2629
danby.com

DeLonghi
888-335-6644
delonghicanada.com

Ducane
800-265-2150
ducane.com

Dyna-Glo
Call local Walmart
walmart.ca

EarthPan
800-450-0156
www.potsandpans.com

Fiesta
519-885-4540
fiestagrills.com

FilterStream
866-625-3218
filterstream.com

Filtrete
800-364-3577
3M.com/ca

Flanders
800-800-2210
flanderscorp.com

Germ Guardian
866-603-5900
germguardian.com

Grill Master
Call local Lowe's
lowes.ca

HoMedics
888-225-7378
homedics.ca

Honeywell
800-477-0457
honeywell.com

Hoover
800-944-9200
hoover.com

Humanscale
800-400-0625
humanscale.com

iHealth
855-816-7705
ihealth99.com

KitchenAid
Call local Lowe's
lowes.ca

Lennox
800-953-6669
lennox.com

LG
888-542-2623
lg.com/ca

LifeSource
800-461-0991
autocontrolmedical.com

Lightair
877-714-7444
lightair.com

Master Forge
Call local Lowe's
lowes.ca

Minden
888-985-2249
minden.com

Napoleon
705-726-4278
napoleongrills.ca

Nordic Ware
877-466-7342
nordicware.com

Omron
877-216-1333
omronhealthcare.ca

Saber
888-947-2237
sabergrills.com

Stok
Call local Home Depot
homedepot.ca

TEC
800-331-0097
techinfrared.com

3M
3M.com/ca

Uniflame
Call local Walmart
walmart.ca

Vermont Castings
vermontcastings.com

Vollara
800-989-2299
vollara.com

Weber
800-265-2150
weber.com

Whirlpool
866-990-7365
whirlpoolairpurifiers.com

Withings
withings.com