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# RealMoney

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## Article Summary

### what?

Learn about the different types of water filters, and how to choose the right model for you.

### why?

The right filter will help you reduce or eliminate contaminants from your water.

### wow!

Feeling secure about your tap water may encourage you to avoid bottled water, which isn't any safer than tap and comes with hefty social and environmental costs.

## FEATURE ARTICLE - JULY/AUGUST 2007

### The Facts About Water Filters

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**You may think that one water filter is as good as another, but think again.**

**The filter you buy on impulse may not be keeping your family safe.**

Beverage companies have made a fortune on marketing bottled water on the premise that it's "pure," from "pristine, natural sources," and thereby safer than tap water. Bottled water marketing campaigns have been so successful in making people suspicious of their tap water, that sales skyrocketed 700 percent between 1997 and 2005. Skyrocketing as well—the environmental degradation, landfill waste, and human rights abuses associated with bottled water. Plus, studies have shown that it's no safer than tap water ([see below](#)).



There's a much better option for ensuring that the water you and your family drink is as safe as it can be: a water filter. Putting a water filter in your home is less expensive and far less environmentally damaging than bottled water. And if you choose the right filter, you can minimize or eliminate the contaminants of highest concern in your area. Here's what you need to know. ...

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### How Safe Is Public Water?

Under the Safe Water Drinking Act, the US Environmental Protection Agency (EPA) is responsible for setting national drinking water standards. The EPA regulates over 80 contaminants—including arsenic, e-coli, cryptosporidia, chlorine, and lead—that may be found in drinking water from public water systems. While the EPA says that 90 percent of US public water systems meet its standards, you may want to use a water filter to further ensure your water's safety.

A 2003 study by the nonprofit Natural Resources Defence Council (NRDC) found that due to a combination of pollution and deteriorating equipment and pipes, the public water supplies in 19 of America's largest cities delivered drinking water that contained contaminant levels exceeding EPA limits (either legal limits or unenforceable suggested limits) and may pose health risks to some residents. So even though it may test fine at its source, public water may still pick up contaminants on the way to your house.

Contaminants that sneaked into city water supplies studied by the NRDC include rocket fuel, arsenic, lead, fecal waste, and chemical by-products created during water

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treatment.

"Exposure to the contaminants [sometimes found in public and private drinking water] can cause a number of health problems, ranging from nausea and stomach pain to developmental problems and cancer," notes Physicians for Social Responsibility (PSR) in its booklet, *Drinking Water: What Health Care Providers Should Know*. PSR estimates that up to 900,000 people get sick and 900 die in the US per year from contaminated public and private drinking water. Despite the problems with public water, it's still just as safe as bottled water, despite the billions of dollars beverage companies spend to make you think bottled is better. (For more information, [see below](#).)

## Step One: Assess Your Tap Water

There isn't a one-type-fits-all kind of water filter: not every filter type will eliminate every contaminant. You'll save money and ensure that you're targeting the contaminants of concern in your area by doing a little research up front.

"Most people purchase the wrong equipment because they skip this very important step, and then they've wasted money and resources on a system that isn't making their water any safer," says James P. McMahon, owner of [Sweetwater, LLC](#) (866/691-4214), which provides consulting and products for people wanting to purify their air or water.

To start, check your water utility's "Consumer Confidence Report," which it must mail to you each year before July 1 by law. The report details where your drinking water comes from, what contaminants have been found in it, and how contaminant levels compare to national standards. You can also call your utility and ask for a copy, or visit [www.epa.gov/safewater](http://www.epa.gov/safewater) to see if it's online.

For help reading the report, visit [NSF International's Web site](#).

While your report can tell you what's going on with the water in your area, only a test of the water coming out of your tap will tell you what you and your family are drinking for sure. To find a state-certified lab to test your water (which will charge a fee) visit [the EPA's Safe water Web site](#), or call the EPA's Safe Water Hotline at 800/426-4791.

If your water comes from a private well, it's not regulated at all by the EPA, so you should have your water tested annually in late spring (when pesticide runoff will be at its worst), and anytime you notice a change in your water.

## Step Two: Find the Best Type

Water filters come in a dizzying variety, from plastic pitcher filters and built-in refrigerator filters, to faucet and under-the-sink filters, to whole-house models that combine a variety of media types and treat all of the water in your house. What type you want depends on your needs.

If, after examining your Consumer Confidence Report (or, preferably, your current and several past reports), you find that your water **regularly tests better than EPA levels**, you may just want a filter that can remove the chemicals your local utility uses to treat the water.

These chemicals may or may not show up on your report. Call and ask your utility if it uses chlorine, a suspected respiratory and neurological toxin, or chloramine, a suspected blood and respiratory toxin. Chlorine combines with organic elements during the water treatment process to produce carcinogenic by-products.

The best type of filter to remove chlorine and its byproducts is a combination carbon/KDF adsorption filter (not to be confused with "absorption"), which range from shower and faucet filters to sink and whole-house filters, like those from Sweetwater and [BestFilters.com](#). A regular carbon filter won't remove chloramine, so look for a catalytic carbon filter instead (Sweetwater and the [Water Exchange](#), 888/297-4887, offer these).

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If you only have **one or two contaminants**, a smaller unit, such as a countertop or under-the-sink filter, may meet your needs. To find a filter certified to remove the contaminants you're most concerned about, visit the [NSF's online database](#).

Finally, if you find your water has **serious safety issues**, consider a multi-stage filter that can tackle a variety of contaminants. Many combine a variety of filter types (see the box below for an overview). Sweetwater sells multi-stage whole-house or sink filters, for example, that combine KDF and carbon adsorption with ultraviolet light, among other steps—and it also sells customized filters. BestFilters.com and [Gaiam](#) (877/989-6321) sell multi-stage sink filters that combine a variety of media types.

### Step Three: Look at the Labels

Some experts recommend looking for a filter certified by NSF International, a nonprofit organization that conducts safety testing for the food and water industries. NSF tests and certifies water filters to ensure that they both meet NSF safety standards and are effective at removing contaminants as claimed by the manufacturer. Underwriters Laboratories and the Water Quality Association also offer similar certification, based on NSF standards.

NSF has different certifications, so when you read the label, first make sure it says the filter will remove the contaminants you're most concerned about. A filter certified by NSF to remove chlorine isn't going to be helpful if you need it to remove nitrates. Then, look for the NSF seal, Underwriters Laboratories' "UL Water Quality" mark, or the Water Quality Association Gold Seal for added assurance that your filter will actually do what the box claims.

### Better Water for the Future

Filters aren't perfect—they can be expensive and energy intensive, and the filter cartridges are nearly impossible to recycle. But when you compare throwing away a couple cartridges to the billions of water bottles we toss each year, filters are a preferable option. When it comes to ensuring better water for the future, here are the most important steps:

First, we need to stop drinking bottled water. It's not any safer than tap, and it wastes a mind-boggling number of resources ([see below](#)).

Then, we need to ask companies to take back and recycle their cartridges. Besides using up resources, filter cartridges trap and hold contaminants. If the cartridges are not disposed of in a sealed landfill, those contaminants could end up right back in the environment.

Brita—which sells a popular carbon adsorption pitcher filter, faucet-mounted filters, and cartridges for refrigerator filters—used to accept its used cartridges for recycling in the US. However, a representative for the company says "that program has been discontinued until further notice." Brita does take back its cartridges in parts of Europe for recycling. Call Brita (800/24-BRITA) and tell the company you want to see it restart its US recycling program. If you buy a filter from another manufacturer, let them know you want them to recycle their used filter cartridges.

Finally, US water treatment and distribution systems date back several decades, and they need repairs and upgrades to make water safer for human and environmental health. While the EPA won't attach a dollar amount, Dale Kemery at the agency says more money is needed to make these upgrades. [Food and Water Watch](#) is demanding that Congress increase funding to secure our public water system. Visit their Web site to help.

That said, public utilities will be using treatment chemicals well into the future, and our systems may never be perfect. Take responsibility for your family's health by carefully considering whether you need to take additional steps to make your water the

healthiest it can be.

—Tracy Fernandez Rysavy

## Resources

- To find more screened green companies offering water filters, consult the “Water Purification” category of our [National Green Pages™](#).
- For water on the go, [Gaiam](#) sells a portable, plastic Filtering Water Bottle that can block bacteria and cysts like cryptosporidia, and a Purifying Water Bottle that keeps out bacteria, cysts, and viruses (877/989-6321).

## Filters by Type

Here’s a brief overview of the different filter types:

- **Adsorption:** These filters run water past an adsorbent medium—like carbon, charcoal, KDF (a copper-zinc formulation), and ceramic—to which liquids, gases, and dissolved or suspended matter will adhere. These are best at removing organic contaminants and chlorine, and they may also make your water taste better. They won’t remove nitrates, some heavy metals, and fluoride, and they can become bacteria havens if you don’t change your filter cartridge regularly. **Types:** Whole-house and point-of-use kitchen-sink, shower, and faucet filters, as well as pitcher filters like Brita and built-in refrigerator filters.
- **Distillers:** These systems heat water to the boiling point and then collect the water vapor as it condenses, leaving many of the contaminants behind, particularly the heavy metals. Some contaminants that convert readily into gases, such as volatile organic chemicals, may be carried over with the water vapor, so some distillation systems also use carbon filters to remove some of those contaminants. These are best at removing inorganic contaminants, like heavy metals, nitrates, and hardness (i.e. calcium and magnesium). They can remove some bacteria. Some consumers complain that the water tastes “flat” after distillation. These filters won’t remove chloramines. **Types:** Point-of-use sink filters.
- **Filter membranes:** These consist of a membrane or series of membranes that trap particles above a certain size and allow everything else to pass through. The filtration openings are generally larger than reverse-osmosis membranes, and they can be used in conjunction with other filter types, such as UV. A “1 micron” filter will remove particulates and most bacteria, cryptosporidia, and viruses. **Types:** Point-of-use and whole-house filters.
- **Reverse osmosis filters** use normal household water pressure to force water through a semi permeable membrane, which separates contaminants from the water. These are best for removing bacteria. However, for every three gallons you run through the filter, you’ll only get one gallon of water. You can redirect the waste water to a graywater system. **Types:** Point-of use kitchen sink filters.
- **Ultraviolet treatment filters** use ultraviolet light to disinfect water or reduce bacteria. They’re great for removing bacteria and viruses, but they won’t remove chemical pollutants. **Types:** Whole house filters, and point-of-use sink filters.

## Why Bottled Water Isn’t Better

US consumption of bottled water reached 29.8 billion bottles in 2005, an astonishing seven times the 3.8 billion sold in 1997, according to the Container Recycling Institute (CRI). That enormous rise in bottled water consumption wasn't just more expensive for consumers—who the CRI says pay 240 to 10,000 times more for bottled water than tap; it also came with some hefty social and environmental costs. Here's why bottled water isn't worth the price many pay for it:

- **No safer:** A four-year study conducted by the nonprofit National Resources Defense Council (NRDC) in 1999 found that "bottled water regulations are inadequate to assure consumers of either purity or safety." Bottled water is regulated by the Food and Drug Administration (FDA), while the Environmental Protection Agency (EPA) oversees tap water standards. FDA testing for bottled water is more lax than EPA testing for public water—tests are conducted less often, and for fewer contaminants. For example, the FDA does not mandate testing of bottled water for cryptosporidium, a parasite that poses a serious health threat to those with weakened immune systems and the elderly. Tap water is regularly tested for cryptosporidium. The NRDC study authors also tested 1,000 bottled water samples from 103 brands, and found that one-third contained contaminants that exceeded FDA-mandated levels.
- **Not always from a pristine source:** The NRDC found that one-fourth of bottled water is actually just tap water, with or without extra filtration (labeled "from a municipal source.") FDA rules allow bottlers to label their water "spring water," even though it may be treated with chemicals or mechanically pumped to the surface. And there's no guarantee that the spring itself is a pure one: One brand of spring water traced to its source by the NRDC came from a spring that bubbled up into an industrial parking lot, adjacent to a hazardous waste site.
- **Worse for the environment:** The production and transport of bottled water unnecessarily uses large amounts of fossil fuels. (Fiji-brand water, for example, is transported to the US from Fiji, over 6,000 miles away.) And the plastic water bottles Americans use and toss in one year use up more than 47 million gallons of oil, the equivalent of taking 100,000 cars off the road and removing 1 billion pounds of carbon dioxide from the atmosphere, says the CRI. Sadly, about 84 percent of those bottles aren't even recycled.
- **Bad for human rights:** Today, more than one billion people do not have access to safe drinking water. Bottled water corporations are exacerbating the world water crisis by privatizing aquifers around the world and pumping them dry. For example, Nestlé has been criticized by activists for heavy water extraction in areas of Pakistan that suffer from severe public water shortages. For more on how specific bottled water companies affect communities—and how to join consumer campaigns fighting this practice—visit our [ResponsibleShopper.org](http://ResponsibleShopper.org) database.

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