



Chemicals from agriculture, industry, and other sources have invaded our water supply—but you *can* keep your family's drinking water free of dangerous toxins.

by Jennifer Abbasi

How is safe our water?

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Pause for a moment to consider how many ways our families use tap water. We mix it with oatmeal and brush budding teeth with it. We run the dishwasher and the washing machine, rinse the lettuce for our salads, and bathe our kids in it. And every day, Americans drink 1 billion glasses of water from the tap—and we're fortunate here, where we enjoy some of the highest-quality drinking water in the world.

Yet even in the U.S., that clear liquid contains a hidden threat: toxic contaminants from sources such as agriculture, industry, and even, ironically, water-treatment itself. Many of these pollutants have been linked to cancer, and some are associated with negative cognitive, developmental, and reproductive effects. Kids are generally at a higher risk from these toxins than adults because they're still growing and developing. "Babies and toddlers also may not be as good at detoxifying as adults," says Caroline Cox, research director at the Center for Environmental Health, an Oakland, California-based organization working to eliminate the threat from toxic chemicals.

Invisible toxins

All public water that comes through your tap has been treated to remove toxins and bacteria (see "From lake to tap," page 66). On top of that, the Environmental Protection Agency (EPA) requires water treatment plants to test periodically for toxins, including asbestos, lead, and mercury, as well as less-familiar toxins, like disinfectant byproducts. The plants are also required to test the levels of regulated contaminants according to a schedule set by the EPA (the timing varies on the location and size of your public water system). That means your water is treated every day, but not actually tested as often.

The bigger concern, though, is unregulated toxins, says Nneka Leiba, research analyst at the Environmental Working Group (EWG), a nonprofit organization devoted to public health and the environment, located in Washington, D.C. In 2009, the EWG published a landmark

report identifying more than 200 unregulated contaminants in drinking water based on 20 million tap water quality tests from around the country. One of the pollutants they found is perchlorate, a chemical used in rocket fuels, fireworks, and airbags. The American Academy of Pediatrics' (AAP) Council on Environmental Health says that the chemical interferes with the function of thyroid hormones and has the potential to cause brain damage. Although as many as 16.6 million Americans may be exposed to the chemical through their drinking water, it isn't regulated—yet. In February, the EPA announced that it had initiated the process of creating a standard to regulate perchlorate levels in drinking water.

That's not the only good news. The EWG report also found the vast majority of regulated contaminants—92 percent—to be within legal limits. "It's important to take the steps to improve the quality of our water over time, but it's not necessary to panic over what we're drinking today," Cox says. Plus, this past March, the EPA proposed monitoring 30 unregulated contaminants, including perfluorochemicals, or PFCs. These toxins originate in products such as nonstick pots and pans and have even been found in infant cord blood. Earlier this year, the EPA took steps to help water utilities monitor cancer-causing chromium-6, the so-called Erin Brockovich chemical. The agency is also looking at lowering the amount of fluoride in our drinking water to prevent fluorosis, a condition that causes white spots on kids' teeth.

Here, answers to four important questions to help you make sure the water that comes into your family's home is safe. ►

Q Should I filter our water? That depends. The EWG recommends that everyone use filters at home; the organization says that while most water standards in the U.S. are good, they are often not fully protective of the health of vulnerable populations. Plus, even water systems that usually meet all of the EPA's standards may occasionally be compromised. However, other groups, like the AAP, say that you need to filter only if a problem has been identified in your water.

"Not all drinking water is created equally," says Philip Landrigan, M.D., dean of the global health program at Mount Sinai Medical Center in New York City and one of the leading experts on the effects of environmental toxins on children's health. "But the drinking water in big cities most of the time is very, very

from lake to tap

Unless your water comes from a well, this is how it typically gets to your home:

- 1 Public drinking water comes from surface water (rivers, lakes, and reservoirs, for example) and ground water (pumped up from underground aquifers, which are geologic formations that hold water).
- 2 Utility companies add chemicals that attach to dirt and other particles, making them heavy enough to sink to the bottom. They're then removed.
- 3 Filters (layers of sand, gravel, and charcoal) remove even smaller particles.
- 4 Chlorine or another disinfectant is added to kill microorganisms such as bacteria.
- 5 The water is sent to our homes through an underground network of pipes.

Bottled water is packaged in landfill-clogging, ocean-polluting plastics that can be laced with chemical additives.

good," he says. In fact, he encourages drinking tap water in his New York City office, where he doesn't allow those 5-gallon jugs of water you often see in doctors' waiting rooms.

What should *you* do? Start by finding out what's in your water—and then decide for yourself whether you should filter it (if you plan to, see "How to Choose a Water Filter"). You can learn all about your local water by reading your area's Consumer Confidence Report (CCR), a document the EPA requires water utilities to mail to consumers by July 1 of every year. The report includes information on your water sources, pollutants detected during testing that year, and any violations to the EPA's maximum contaminant levels. If you do not receive a CCR, you can request it directly from your utility company. The EPA's Safe Drinking Water Hotline (800-426-4791) and website (water.epa.gov/drink/local) can help you locate your utility. Some utilities also post water quality information online.

You may also want to test your water yourself. This is especially recommended if your house was built before 1986, when lead was still used in residential plumbing. You can buy a water-testing kit online or pay a laboratory to analyze your water. A list of state-certified labs is available at water.epa.gov/drink (click on Analytical Methods and Laboratories). In the meantime, if you suspect there is

lead in your water, Landrigan recommends running your cold water for 30 seconds every morning to flush out the metal. And use cold water for drinking and cooking because hot water dissolves more lead from pipes, fixtures, and solder (metal often used in plumbing joints)—and therefore contains more lead—than cold water does.

Q What if I have a well? Test the water yourself. The biggest risk from well water is bacteria and nitrates from sewage or fertilizer. In infants, nitrates can contribute to methemoglobinemia, or blue-baby syndrome, a relatively rare but potentially fatal condition in which hemoglobin cannot effectively carry oxygen to the body. According to the AAP, infants younger than 4 months who are fed formula with well water containing nitrates are at the greatest risk.

Ten percent of Americans get their drinking water from private wells that serve fewer than 25 people. These wells aren't regulated by the EPA, so it's up to you to test your well at least once a year to see that it meets federal and state standards. You should also test for nitrates when you become pregnant, before bringing your newborn home, and again before he turns 6 months old. Be sure to use a state-certified testing lab (see "Should I filter our water?" for how to find one).



Q Is bottled water safer? No. Just like tap water, bottled water can come from surface or ground water sources; it can even be sourced from public water utilities. The regulations are no different from tap water, but there's

actually less transparency—the bottled water industry is not required to disclose the results of contaminant testing to the public. The EWG “2011 Bottled Water Scorecard” reports that of the 10 best-selling brands, only one (Nestlé’s Pure Life Purified Water) includes its water source and treatment method on the label and offers a way for consumers to request a water-quality report. Plus, bottled water is packaged in landfill-clogging, ocean-polluting plastics that can be laced with chemical additives that leach into water, defeating the whole purpose of buying it bottled. The bottom line: If you want purer water than what’s coming out of the tap, filter it.

Q How can I improve our water quality? Three longer-term steps you can take to improve the quality of your drinking water:

PROTECT YOUR WATER SOURCE: The EPA encourages the public to attend local hearings on new construction, storm water permitting, and town planning, and to ask leaders and developers questions about any issues that may impact the

community’s water sources. “Make sure that the land around your water source is not going to be developed and is protected from chemicals,” Cox says.

RECYCLE: Keep pollutants out of landfills. Electronics are a big concern because they contain heavy metals, flame retardants, and plastic chemicals that can end up in our water sources. Find recycling options for your electronics at epa.gov/wastes (click on Electronics Recycling).

BUY ORGANIC: The herbicide atrazine is one of the most widely used pesticides in the world (it’s mainly applied on corn fields) and, unsurprisingly, also one of the most commonly found in water, especially in the Midwest. “It has the potential to impact our hormone systems and cause problems for our health,” Cox says. The European Union banned the application of atrazine in 2004. “Organic growers grow corn without atrazine, and there’s data that their yields and profits are just as good,” Cox says. “So you have to ask, ‘Shouldn’t all of our corn be grown that way?’” ●

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HOW TO CHOOSE A WATER FILTER

The first step in finding the right filter for your home is to determine which contaminants you need to remove (check out the Consumer Confidence Report provided by your water utility company or have your water tested yourself). That will help you determine which filter technology is best:

CARBON

Some carbon filters—the type usually found in pitchers and faucet-mounted units—may just remove chlorine to improve taste, while others take out pollutants such as lead, mercury, and volatile organic compounds (VOCs), which are emitted as gases from certain solids or liquids (paint, cleaning supplies, pesticides) and can be harmful to people’s health. Be sure to read the fine print on a product’s packaging or website to determine which contaminants it removes. Carbon filters come in two varieties: carbon block and granulated activated carbon; the latter may be less effective because it has less surface area to catch pollutants, according to the Environmental Working Group.

REVERSE OSMOSIS

This type of filter removes inorganic contaminants, such as chromium-6, nitrates, and perchlorate. Almost all reverse osmosis filters also include a carbon filter.

Opting for a pitcher or a faucet filter is up to you: Are you concerned mainly about drinking water, or do you want to be sure your cooking water is filtered as well? You may want to go for a whole-house filter if your home’s water contains high levels of VOCs, which can penetrate the skin and be released by shower vapor. Whole-house filters can often be customized to your specific tap-water contaminants as well. They are installed at the point water enters your home.

Finally, be sure to keep your filter up-to-date: Follow the manufacturer’s recommended guidelines or your filter could be harboring dangerous bacteria.

To learn more about choosing a water filter, and to search for one that meets the needs of your family, go to ewg.org/tap-water/getwaterfilter.