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Boyett Family Rayne® Water Conditioning

Owned and operated by the Boyett family for over 46 years.

# "Prescription drugs are in our water" and they can be removed by Boyett Family Alkalinity Reverse Osmosis process

"We know we are being exposed to other people's drugs through our drinking water, and that can't be good," says Dr. David Carpenter, who directs the Institute for Health and the Environment of the State University of New York at Albany.

02.26.12

In my path of travels I recently met a person who works in the water department of a large municipality in the Phoenix Area. He confirmed that this city has detected birth control medication in fish which they have dissected.

I would like to highlight one important excerpt from the above article:

**One technology, reverse osmosis, removes virtually all pharmaceutical contaminants.**

Here is the solution to this problem:

I have confirmed that the alkalinity reverse osmosis technology we utilize will remove virtually all pharmaceutical contaminants in your drinking water (including birth control medication).

Brian Hayden Boyett CWS-VI, CI

reference to this article: http://www.denverpost.com/news/ci_8844050

update: 10/15/14 10:05 AM

Our Mission is to be the best water treatment company in the United States by providing exceptional customer service and exceptional products and services that exceed our clients' expectations. It is our goal to provide a safe working environment with the best tools to facilitate our work. Our company is committed to following the Water Quality Association's code of ethics; working with our co-workers and clients honorably and with the highest degree of respect and integrity. We are proud that we work drug free.

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A vast array of pharmaceuticals—including antibiotics, anti- convulsants, mood stabilizers and sex hormones—have been found in the drinking water supplies of at least 41 million Americans, an Associated Press investigation shows.

Water providers rarely disclose results of pharmaceutical screenings, unless pressed, the AP found.

How do the drugs get into the water?

People take pills. Their bodies absorb some of the medication, but the rest of it passes through and is flushed down the toilet. The wastewater is treated before it is discharged into reservoirs, rivers or lakes. Then, some of the water is cleansed again at drinking water treatment plants and piped to consumers. But most treatments do not remove all drug residue.

"We recognize it is a growing concern and we're taking it very seriously," said Benjamin H. Grumbles, assistant administrator for water at the U.S. Environmental Protection Agency.

Three medications, including an antibiotic, were found in drinking water supplied to Tucson, Ariz.

The situation is undoubtedly worse than suggested by the positive test results in the major population centers documented by the AP.

The federal government doesn't require any testing and hasn't set safety limits for drugs in water. Of the 62 major water providers contacted, the drinking water for only 28 was tested. Among the 34 that haven't: Houston, Chicago, Miami, Baltimore, Phoenix, Boston and New York City's Department of Environmental Protection, which delivers water to 9 million people.

The AP's investigation also indicates that watersheds, the natural sources of most of the nation's water supply, also are contaminated. Tests were conducted in the watersheds of 35 of the 62 major providers surveyed by the AP, and pharmaceuticals were detected in 28.

Yet officials in six of those 28 metropolitan areas said they did not go on to test their drinking water—Fairfax, Va.; Montgomery County in Maryland; Omaha, Neb.; Oklahoma City; Santa Clara, Calif., and New York City.

City water officials declined repeated requests for an interview. In a statement, they insisted "New York City's drinking water continues to meet all federal and state regulations regarding drinking water quality in the watershed and the distribution system"— regulations that do not address trace pharmaceuticals.

In several cases, officials at municipal or regional water providers told the AP that pharmaceuticals had not been detected, but the AP obtained the results of tests conducted by independent researchers that showed otherwise. For example, water department officials in New Orleans said their water had not been tested for pharmaceuticals, but a Tulane University researcher and his students have published a study that found the pain reliever naproxen, the sex hormone estrone and the anti-cholesterol drug byproduct clofibric acid in treated drinking water.

In the United States, the problem isn't confined to surface waters. Pharmaceuticals also permeate aquifers deep underground, source of 40 percent of the nation's water supply. Federal scientists who drew water in 24 states from aquifers near contaminant sources such as landfills and animal feed lots found minuscule levels of hormones, antibiotics and other drugs.

Perhaps it's because Americans have been taking drugs—and flushing them un-metabolized or unused—in growing amounts. Over the past five years, the number of U.S. prescriptions rose 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion, according to IMS Health and The Nielsen Co.

**One technology, reverse osmosis, removes virtually all pharmaceutical contaminants** but is very expensive for large-scale use and leaves several gallons of polluted water for every one that is made drinkable.

Another issue: There's evidence that adding chlorine, a common process in conventional drinking water treatment plants, makes some pharmaceuticals more toxic.

Human waste isn't the only source of contamination. Cattle, for example, are given ear implants that provide a slow release of trenbolone, an anabolic steroid used by some bodybuilders, which causes cattle to bulk up. But not all the trenbolone circulating in a steer is metabolized. A German study showed 10 percent of the steroid passed right through the animals.

Water sampled downstream of a Nebraska feedlot had steroid levels four times as high as the water taken upstream. Male fathead minnows living in that downstream area had low testosterone levels and small heads.

Other veterinary drugs also play a role. Pets are now treated for arthritis, cancer, heart disease, diabetes, allergies, dementia, and even obesity—sometimes with the same drugs as humans. The inflation- adjusted value of veterinary drugs rose by 8 percent, to $5.2 billion, over the past five years, according to an analysis of data from the Animal Health Institute.



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Ask the pharmaceutical industry whether the contamination of water supplies is a problem, and officials will tell you no. "Based on what we now know, I would say we find there's little or no risk from pharmaceuticals in the environment to human health," said microbiologist Thomas White, a consultant for the Pharmaceutical Research and Manufacturers of America.

But at a conference in 2011, Mary Buzby—director of environmental technology for drug maker Merck & Co. Inc.—said: "There's no doubt about it, pharmaceuticals are being detected in the environment and there is genuine concern that these compounds, in the small concentrations that they're at, could be causing impacts to human health or to aquatic organisms."

Recent laboratory research has found that small amounts of medication have affected human embryonic kidney cells, human blood cells and human breast cancer cells. The cancer cells proliferated too quickly; the kidney cells grew too slowly; and the blood cells showed biological activity associated with inflammation.

"It brings a question to people's minds that if the fish were affected ... might there be a potential problem for humans?" EPA research biologist Vickie Wilson told the AP. "It could be that the fish are just exquisitely sensitive because of their physiology or something. We haven't gotten far enough along."

With limited research funds, said Shane Snyder, research and development project manager at the Southern Nevada Water Authority, a greater emphasis should be put on studying the effects of drugs in water.

"I think it's a shame that so much money is going into monitoring to figure out if these things are out there, and so little is being spent on human health," said Snyder. "They need to just accept that these things are everywhere—every chemical and pharmaceutical could be there. It's time for the EPA to step up to the plate and make a statement about the need to study effects, both human and environmental."

Our bodies may shrug off a relatively big one-time dose, yet suffer from a smaller amount delivered continuously over a half century, perhaps subtly stirring allergies or nerve damage. Pregnant women, the elderly and the very ill might be more sensitive.

Many concerns about chronic low-level exposure focus on certain drug classes: chemotherapy that can act as a powerful poison; hormones that can hamper reproduction or development; medicines for depression and epilepsy that can damage the brain or change behavior; antibiotics that can allow human germs to mutate into more dangerous forms; pain relievers and blood-pressure diuretics.



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For several decades, federal environmental officials and nonprofit watchdog environmental groups have focused on regulated contaminants— pesticides, lead, PCBs—which are present in higher concentrations and clearly pose a health risk.

However, some experts say medications may pose a unique danger because, unlike most pollutants, they were crafted to act on the human body.

"These are chemicals that are designed to have very specific effects at very low concentrations. That's what pharmaceuticals do. So when they get out to the environment, it should not be a shock to people that they have effects," says zoologist John Sumpter at Brunel University in London, who has studied trace hormones, heart medicine and other drugs.

And while drugs are tested to be safe for humans, the timeframe is usually over a matter of months, not a lifetime. Pharmaceuticals also can produce side effects and interact with other drugs at normal medical doses. That's why—aside from therapeutic doses of fluoride injected into potable water supplies—pharmaceuticals are prescribed to people who need them, not delivered to everyone in their drinking water.



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