

## **IonWays Water Quality Alert (3-11-08):**

### **Pharmaceuticals Found in Water Supplies**

#### **Summary:**

Reporters from the Associated Press' National Investigative Team reviewed hundreds of scientific reports, federal databases and environmental studies and interviewed more than 230 officials, academics and scientists and private water suppliers in all 50 states. Following this exhaustive project, it was concluded that a surprising array of pharmaceuticals have been found in water supplies across the U.S.

#### **Partial Findings:**

Following is a partial list of what the Investigative Team uncovered:

- Philadelphia: 56 pharmaceuticals or byproducts in treated drinking water, including medicines for pain, infection, high cholesterol, asthma, epilepsy, mental illness and heart problems. Sixty-three pharmaceuticals or byproducts were found in the city's watersheds.
- Southern California: Anti-epileptic and anti-anxiety medications were detected in a portion of the treated drinking water for 18.5 million people.
- Northern New Jersey: Drinking water treatment plant, which serves 850,000 people, found a metabolized angina medicine and the mood-stabilizing carbamazepine in drinking water.
- San Francisco: A sex hormone was detected in drinking water.
- Washington D.C.: The drinking water for Washington, D.C., and surrounding areas tested positive for six pharmaceuticals.
- Tucson AZ: Three medications, including an antibiotic, were found in drinking water supplied to Tucson, Ariz.

There is NOT a Federal Government mandate for municipalities and well owners to test for pharmaceuticals in water, or have the Agencies set any maximum contaminant levels. As a matter of fact, the common water quality tests available through certified water quality labs would not even detect these levels of pharmaceutical contaminants. NSF ([www.nsf.org](http://www.nsf.org)) the gold standard private water quality certifying organization in the USA, has not established a standard for the testing of these contaminants. Of the 62 major water providers contacted by the Investigative Team, 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.

#### **Health Risks:**

Researchers do not yet understand the exact risks associated with persistent exposure to random combinations of low levels of pharmaceuticals, however, some studies uncovered dangerous effects on humans and animals.

To nobody's surprise, the Pharmaceutical Industry had initially gone on record to state that: "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 last summer, 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."

The reaction from the Federal Government is: "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.

**Removal of contaminants:**

Some time will be needed to determine the optimal solution for removal of pharmaceuticals in drinking water due to the need for extensive testing. However, as with removal of other contaminants in water, the more barriers to treatment that are installed, the greater the particulate removal.

Initial studies indicate that some reduction in pharmaceuticals is achieved from Granular Activated Carbon (GAC). Emco Tech Ionizers employ the 9-stage Biostone Filter System which utilize GAC as the primary filtration media. GAC has been used for decades in water treatment to adsorb many dangerous compounds.

Reverse Osmosis (R/O) treatment was specifically designed to provide a way to remove up to 98% of all dissolved and suspended materials in water. The disadvantage of R/O is the fact that water produced is virtually mineral free and typically highly acidic on the pH scale. Both of those properties in R/O water are not natural for the body. IonWays has a system that incorporates R/O and remineralization before the ionizer. Furthermore, R/O systems can waste between 5 to 20 gallons of water for each gallon of drinking water produced.

Some consumers may see Bottled Water as an alternative, but bottled water in many cases comes from sources that are contaminated, and is typically treated with R/O. Bottled water also has disadvantages due to leaching of plasticides into the water inside and environmental damage created by manufacturing and disposal of the plastic bottle itself.

In fact, the BioStone filter in our products and the ionization process itself provides increased treatment barriers. The process separates acidic from alkaline ions, which will eliminate some contaminants from your drinking water. Laboratory results on the impact of the Biostone filter and Emco Tech Ionizers can be seen in your back office under "Biostone Filter Reports".

The Water Professionals at IonWays will continue to monitor the situation, share our findings and offer the necessary products to work in conjunction with your ionizer if required.