



YOUR QUESTIONS ANSWERED

# PHARMACEUTICALS AND EMERGING CONTAMINANTS



## What are pharmaceuticals and other emerging contaminants?

Pharmaceuticals found in water are prescription drugs or over-the-counter drugs used by humans and animals. In addition, personal care products (fragrances, cosmetics, lotions, and other compounds) and the broad range of substances we use daily can enter the environment and eventually find its way into the Potomac River, our source water that is treated and used for drinking in Washington DC.

## How do pharmaceuticals and other compounds enter the Potomac River?

Pharmaceuticals, personal care products, and other compounds are found at extremely low levels in water. Human, animal, agricultural, and other activities can affect the Potomac River.

We are all responsible for contaminants found in water. The pharmaceuticals we take are not completely absorbed by the body and enter wastewater during excretion. Directly flushing pharmaceuticals also adds to its presence in the source water. Herbicides, pesticides, and other compounds used in agriculture and farming industries run off into source waters.

## Is my water safe to drink?

Yes, the drinking water produced by the Washington Aqueduct and delivered to District residents by DC Water meets all U.S. Environmental Protection Agency (EPA) drinking water standards. DC Water has also set more stringent target levels than is required by EPA for many contaminants and regularly meets these levels. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care providers about drinking water.

The Washington Aqueduct and DC Water routinely lab-test water for about 350 different substances. Over the course of a year, we conduct about 65,000 tests throughout the District and report data to EPA. Water quality is reported to the public in the Annual Water Quality Report. The report can be found at [dcwater.com/testresults](http://dcwater.com/testresults).

## Why are more pharmaceuticals and other compounds being detected in water?

With advancements in technology, a more diverse group of compounds is found at extremely low levels in water. Improved detection and increased use of pharmaceuticals contribute to levels found in parts per billion and parts per trillion. It is likely that these low level compounds have been present in our water for as long as humans have been using them. The difference is that now technology can detect them.

## What does the detection of low levels mean?

Low levels of pharmaceuticals and other compounds found in parts per billion and parts per trillion are below levels known to harm human health. Advances in research and technology improve our understanding of the types and levels of chemicals present in water across the U.S. and to date does not show evidence of risks to human health.

### Parts per billion is equal to:

- One second in 32 years
- Drinking 2 liters of water per day for 274 years to consume the dose of one ibuprofen tablet (200mg)

### Parts per trillion is equal to:

- One drop in 16 Olympic size swimming pools
- Drinking 2 liters of water per day for 274,000 years to consume the dose of one ibuprofen tablet (200mg)

## How is DC Water addressing pharmaceuticals and emerging contaminants in water?

DC Water continues to focus on delivering safe drinking water to DC residents and meeting EPA drinking water standards. The Washington Aqueduct, responsible for treating the water, has participated in multiple studies to understand pharmaceuticals and emerging contaminants in water.

## What have recent studies found in area source and treated water?

The Washington Aqueduct has participated in studies with the U.S. Department of Agriculture (USDA), U.S. Geological Survey (USGS), and Metropolitan Washington Council of Governments (COG) to improve our knowledge and understanding of pharmaceuticals and emerging contaminants in source and treated water.

**What is being done at the national level to address this issue?**

The EPA Contaminant Candidate List (CCL) identifies contaminants in public drinking water that may require research on occurrence and impacts on human health. The CCL does not currently include any pharmaceuticals or personal care products. The EPA is supporting research to strengthen science, improve public understanding, promote community disposal options, and take regulatory action. Many other federal, state, and local agencies and organizations are involved in research and activities on pharmaceuticals and emerging contaminants.

**What can I do to prevent pharmaceuticals and other compounds from entering our water?**

The primary goal to prevent the presence of pharmaceuticals and other compounds in water is to remove sources and pathways of contamination. You can reduce the presence of pharmaceuticals and other household products in drinking water by properly disposing of these products. The federal Office of National Drug Control Policy recommends not flushing prescription drugs down the toilet.

**Participation in National Studies**

*USDA Pesticide Data Program, Finished Drinking Water Monitoring Survey (2006-2007)* The USDA study monitored for 25 pharmaceuticals and personal care products and 173 pesticides and residues. Trace amounts (parts per trillion) of 5 pharmaceuticals and personal care products and 19 pesticides were detected in source and treated water. The Washington

Aqueduct routinely tests for a number of pharmaceuticals and pesticides that were detected in this study. The report can be found under the "Pesticides Data Program" at <http://www.ams.usda.gov/science>.

*USGS National Water-Quality Assessment Program, Source Water Quality Assessment (2003-2005)* The USGS study monitored for 277 compounds, including pesticides, solvents, gasoline hydrocarbons, disinfection by-products and personal care products. A total of 192 compounds were not detected and only 26 of those found were commonly detected in source samples. The levels detected (parts per trillion) did not exceed EPA drinking water standards or USGS health based screening levels and indicate no known risks to human health. More information can be found at <http://pubs.usgs.gov/ds/2007/268>.

**Participation in Regional Studies**

*Metropolitan Washington Council of Governments (2008)*

In 2008, Washington Aqueduct participated in a regional effort coordinated by the Metropolitan Washington Council of Governments to monitor for select pharmaceuticals, personal care products, and other potential compounds in source and treated water. Twenty factors were analyzed and only two contaminants were detected in parts per billion. For more information, please visit: <http://www.mwcog.org/environment/water/watersupply/tracecompounds.asp>.

**Additional information can be found at the following web sites:**

U.S. Environmental Protection Agency

<http://www.epa.gov/ppcp/>

<http://www.epa.gov/waterscience/ppcp/basic.html>

<http://www.epa.gov/safewater/ccl/>

Water Research Foundation

<http://www.waterresearchfoundation.org/research/TopicsAndProjects/topicSnapshot.aspx?topic=EDCS>

American Water Works Association

<http://www.drinktap.org/consumerdnn/Home/WaterInformation/WaterQuality/PharmaceuticalsPPCPs/tabid/73/Default.aspx>

U.S. Geological Survey

<http://toxics.usgs.gov/highlights/whatsin.html>

Office of National Drug Control Policy

[http://www.whitehousedrugpolicy.gov/publications/pdf/prescrip\\_disposal.pdf](http://www.whitehousedrugpolicy.gov/publications/pdf/prescrip_disposal.pdf)

**For more information on drinking water quality:**

**Visit our web site at [dcwater.com](http://dcwater.com)**

**Contact the Water Quality Division at 202-612-3440**

**Email [waterquality@dcwater.com](mailto:waterquality@dcwater.com)**

