

**Connecticut Department of Public Health Drinking Water Section****Fact Sheet****Pharmaceuticals in the Environment**

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According to the United States Environmental Protection Agency (USEPA), water quality studies have shown that pharmaceuticals are present in our nation's waterbodies and recent reports have documented that some pharmaceuticals have been found at low levels in some drinking water supplies. Further research suggests that certain drugs may cause ecological harm; however, more research is needed to determine the extent of ecological harm and any role the pharmaceuticals may have relative to potential human health effects. To date, scientists have found no direct evidence of adverse human health effects from pharmaceuticals in the environment.

**Where Do The Pharmaceuticals Come From?**

Pharmaceuticals are a group of compounds consisting of human and veterinary drugs. These compounds can be introduced into the environment in several ways including:

- Prescription and over the counter medication residues that pass out of the body and into sewer lines.
- Externally-applied drugs and personal care products that are washed down the drain when we shower or bathe.
- Unused or expired medications that are flushed down the toilet.
- Veterinary drug use.

**What Are The Concerns?**

- Pharmaceuticals can enter the environment after use by individuals or domestic animals.
- Septic systems and sewage treatment plants are not equipped for the removal of pharmaceuticals.
- Public drinking water treatment systems are not engineered to remove pharmaceuticals.
- Health concerns centered on pharmaceuticals in the environment and some drinking water sources are based on the theoretical interactions of various pharmaceuticals with each other and the potential for long-term exposure to low levels. Research on fish in polluted environments confirms that pharmaceuticals can have biological effects. Whether or not these environmental findings support the possibility of human health effects at low exposures is not likely to be answered in the near future. However, pharmaceuticals have been tested and approved for use in humans according to strict scientific protocols. It is thus highly unlikely that exposures to very low levels will have adverse health effects on humans. The Department of Public Health has been, and will continue, to track this emerging issue in drinking water quality.

## **Water Quality Testing for Public Water Supplies:**

Presently, the United States Environmental Protection Agency (USEPA) and State of Connecticut water quality testing requirements for public water systems do not include testing for pharmaceutical compounds. Also, the USEPA currently does not regulate or have standards for pharmaceutical compounds in drinking water supplies.

Because the presence of low levels of pharmaceuticals in drinking water does not appear to be associated with any known human health effects at this time, the Department of Public Health will look to the USEPA for guidance and carefully examine the research before requiring any pharmaceutical testing in Connecticut's public drinking water supplies.

## **How Connecticut's Sources of Public Drinking Water are Protected**

Connecticut's sources of public drinking water only use the highest quality and most protected waters in the state. Our state's pristine public drinking water sources are guarded by numerous laws intended to protect public health and to minimize any unreasonable risk to health.

Key public health-based laws for the protection of public drinking water sources require:

1. Prohibition of wastewater treatment plant discharges within the state's public drinking water supply drainage areas (also known as watershed areas).
2. Treatment of all surface waters used for public drinking water supply.
3. Oversight of the use and ownership of approximately 100,000 acres of watershed land owned by public water systems for the protection of drinking water quality.
4. New groundwater sources for public drinking water to be properly sited and separated away from potential sources of pollution.
5. Periodic inspection of public water systems and sources to ensure that public health protection measures are being upheld.
6. Prohibition of swimming in drinking water reservoirs and additional controls that oversee other activities within public water supply watershed areas.
7. Mandated water quality testing for more than 83 contaminants in the state's public drinking water sources.

The prohibition of wastewater treatment plant discharges into any water body that is used as a drinking water supply is unique to only Connecticut and Rhode Island. Therefore, because the presence of pharmaceuticals in drinking water is often associated with wastewater treatment plant discharges, Connecticut's prohibition of such discharges greatly reduces the likelihood of their occurrence in the state's drinking water sources.

To help keep unused prescription and over-the-counter medications out of the environment the Department recommends that they be properly disposed of as described in the Department of Environmental Protection factsheet which is available on-line at [DEP: Disposing of Prescription Medicines and Over-the-Counter \(OTC\) Products](#)

For more information please visit the USEPA website <http://www.epa.gov/ppcp/>