

Acetaminophen in Drinking Water

Acetaminophen is a contaminant that has been found in waters that could be used as drinking water sources in Minnesota. The Minnesota Department of Health (MDH) developed a health-based guidance value for acetaminophen in drinking water and, based on this value, does not expect levels in drinking water to harm Minnesotans.

What is acetaminophen?

Acetaminophen is a medication widely used to reduce fever and pain. It is used in many brands of non-prescription medications and can be combined with other drugs in some prescription pain medications.

How much acetaminophen is in Minnesota drinking water?

Acetaminophen was found only once in untreated drinking water at a concentration of 0.010 parts per billion (ppb).¹ However, only a few studies have looked for acetaminophen in treated drinking water.

Has acetaminophen been found in other waters in Minnesota?

The United States Geological Survey (USGS) has detected acetaminophen at low levels in surface water and treated wastewater in Minnesota.¹ It is less commonly found in Minnesota groundwater, with only a single known detection in a well that is not used as a drinking water source.²

What is the MDH guidance value for acetaminophen in drinking water?

Based on available information, MDH developed a guidance value of 200 ppb for acetaminophen in drinking water.³ MDH considers the liver to be the organ most sensitive to acetaminophen exposure.

How can I safely use products containing acetaminophen?

If you are taking acetaminophen, it is important that you take the right amount. Taking more than directed can cause serious liver damage. If you are taking more than one medication with acetaminophen at the same time, the total amount you are taking is the amount in each of the products added together. Refer to the Food and Drug Administration websites about reducing risks from acetaminophen use and safely reducing fever in children.^{4,5}

At a Glance

Acetaminophen is...

- a medication widely used to reduce fever and pain.

Acetaminophen enters your body...

- primarily from taking it as medication.

Your exposure to acetaminophen can be reduced by....

- being aware of the amount of acetaminophen-containing products you are taking.

Your environmental impact can be reduced by....

- never flushing unused or unwanted medications down your toilet or a drain. Dispose of unwanted acetaminophen-containing products responsibly.

Acetaminophen in drinking water is safe if...

The level is lower than the MDH guidance value of 200 ppb.

Can acetaminophen in drinking water affect my health?

High doses of acetaminophen can cause serious liver damage. Based on the levels of acetaminophen detected in Minnesota waters, exposure to acetaminophen in drinking water is expected to have little to no health risk.

How does acetaminophen get into the environment?

Acetaminophen enters the environment through wastewater. When a person takes acetaminophen, up to 9 percent of it passes out of the body (unchanged) in urine.⁶ This means it gets flushed down the toilet and mixes with wastewater. Acetaminophen also enters wastewater when excess or expired medication is discarded in the sink or toilet.

Some acetaminophen is removed from wastewater during treatment and acetaminophen in surface water can break down through the action of sunlight. However, acetaminophen is constantly replenished in surface water from new wastewater. We expect acetaminophen to be present in surface water over the long term, but at low concentrations.

What are the potential environmental impacts of acetaminophen?

Studies show that Acetaminophen may interfere with normal embryonic development, reproduction, growth, behavior, survival, and endocrine system function of fish. These laboratory effects occurred at higher Acetaminophen levels than the levels found in Minnesota waters. However, limited data suggest that exposure to low levels of chemical mixtures that include Acetaminophen, may be harmful to fish.

What Minnesotans Need to Know...

Acetaminophen is a medication widely used to reduce fever and pain. If you take one or more medications with acetaminophen, make sure you are taking a proper amount. One way to reduce acetaminophen in the environment is to dispose of it properly. Never flush unused or unwanted medications down the toilet or drain. The Minnesota Pollution Control Agency provides easy steps for getting rid of unwanted medications: <http://www.pca.state.mn.us/index.php/living-green/living-green-citizen/household-hazardous-waste/disposing-of-unwanted-medications.html>.⁷

The Contaminants of Emerging Concern (CEC) Program...

Evaluates health risks from contaminants in drinking water and develops drinking water guidance. MDH works in collaboration with the Minnesota Pollution Control Agency and the Minnesota Department of Agriculture to understand the occurrence and environmental effects of contaminants.

References

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3. www.health.state.mn.us/divs/eh/risk/guidance/dwec/sumacetamin.pdf
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