Changing Personal Care Habits to Protect Our Drinking Water

Operation Clean Water

As personal care products evolve and we take more medications, the waste from our society changes. Today's waste includes ingredients from soap, like microbeads and anti-bacterial agents, and trace amounts of prescription drugs. These waste byproducts are showing up in our nation's rivers and lakes in low levels. While public health has not been impacted, we need to look at how we use and dispose of these products to protect our drinking water supplies and environment.

Pharmaceuticals and personal care products, known as PPCPs, provide a daily source of contaminants to our waste stream. Wastewater treatment plants were not designed to fully remove these contaminants. Trace amounts can remain in the final effluent discharged to our waterways.

"Understanding how PPCPs impact our waterways and how to help reduce the levels of these contaminants in the environment is important," explains Mary Lynn Semegen, Water Quality Manager for the Great Lakes Water Authority (GLWA). "Everyone can help protect our waterways through proper disposal of drugs and reading labels of the products to make an informed decision before purchasing."

Widespread Use of Pharmaceuticals Increases Need for Proper Disposal

According to the Mayo Clinic, nearly 70% of Americans take at least one prescription drug. More than half of the population takes two drugs. Antibiotics, anti-depressants, painkilling opioids and drugs to lower lipids are the most commonly prescribed medications. Trace contaminants from these and other drugs get into our waterways from people excreting them, flushing them down the toilet, or washing them off their bodies.

Some pharmaceuticals contain endocrine disrupting chemicals (EDCs) that mimic or block the function of natural hormones in the body. So far, scientific evidence has not determined that trace amounts of pharmaceuticals and EDCs in drinking water have an impact on human health. Further research is needed. However, scientific studies have concluded EDCs can affect the growth and development of fish and wildlife.

Proper use and disposal of prescription and over-the-counter (OTC) drugs is crucial. The old guideline of flushing expired or unneeded drugs down the toilet is no longer valid. Follow the steps outlined in the adjacent box to limit your environmental impact.

Reduce the Ecological Footprint of Prescription and OTC Drugs

1. Limit bulk purchases. Large quantities of unused pills can accumulate and require disposal.

2. Dispose of unused prescription drugs through a National Prescription Drug Take-Back Day held at local police stations and operated through the Drug Enforcement Agency. These occur annually in the Spring and Fall. In addition, some local government agencies and pharmacies host take-back medication programs.

3. Never flush drugs down the toilet unless the label specifically tells you to do so and you can't wait until the next Take Back Day. (Some narcotic pain relievers and other controlled substances include instructions for flushing to reduce risk of illegal abuse.)

4. When disposing of prescription and OTC drugs at home, take the drugs out of the original packaging and mix them in a bag with an undesirable substance, such as coffee grounds or cat litter, and place the bag in your garbage. Use a permanent marker to cover personal information on discarded bottles.

Changes in Personal Care Product Ingredients Address Environmental Concerns

Personal care products include soap, shampoo, toothpaste, deodorant, lotion, make-up and other products. Ingredients used in these products are not regulated, but manufacturers must verify safety before products go to market. Color additives are subject to Federal Drug Administration (FDA) premarket approval and products that make therapeutic claims are treated as drugs and require approval.

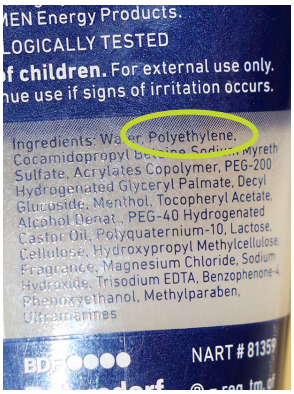
While products are safe for personal use, some ingredients have proved harmful to the environment. Microbeads and anti-bacterial agents were recently banned and are being phased out of products.

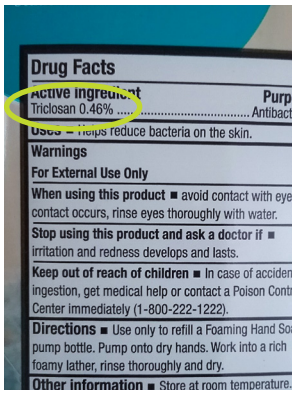
Microbeads are small plastic particles used in soaps, body washes and toothpaste for scrubbing skin and teeth. The plastic beads are too small to remove during the wastewater or water treatment processes. They have been found in waters throughout the world. Fish eat these beads which can block their digestive systems.

A new law prohibits the manufacture and use of microbeads in cosmetics over a 3-year phase-out of all products by July 2019. Some manufacturers have pledged to stop using microbeads before the deadline. Consumers can quit using microbeads by not purchasing products with polyethylene and polypropylene, the chemical ingredients of microbeads.

This fall, the FDA announced that it is banning the use of 19 antibacterial chemicals in soaps and body washes. The two most common ingredients are triclosan, used in liquid soap, and triclocarban, used in bar soap. There is no evidence to support that these ingredients are better than regular soap. Triclosan and triclocarban could act as EDCs and impact algae's ability to perform photosynthesis.

The ban becomes effective September 2017. It only applies to consumer soap products, not toothpaste or hand sanitizers. Some manufacturers started removing the chemicals before the ban in response to rising consumer demand. Since plain soap and water has been proven just as effective, consumers can start buying products that do not contain these ingredients right away. The Centers for Disease Control and Prevention (CDC) suggests using alcohol-based hand sanitizers if soap is not available.





Microbeads and anti-bacterial agents are being phased out of products. Consumers can get a head start on water protection by reading labels and purchasing products that do not contain these ingredients.

Monitoring for PPCP Contaminants in the GLWA Service Area

PPCPs and EDCs are considered to be contaminants of emerging concern (CECs) by the US Environmental Protection Agency (USEPA). CECs are chemicals and other substances that have been recently discovered in natural streams, have no regulatory standard, and are potentially harmful to aquatic life and humans. Every five years, the USEPA identifies up to 30 CECs to be monitored in public water supplies throughout the country as part of the Safe Drinking Water Act's Unregulated Contaminant Monitoring Rule.

The most recent USEPA testing occurred in 2014 and 2015 and included seven hormones found in human and veterinary pharmaceuticals. Communities within the GLWA service area that participated in the testing all found non-detectable levels of the hormones. Source water from the three intakes serving the GLWA water treatment plants also had non-detectable levels. Some other naturally occurring metals on the list of CECs were found in very low levels.

Monitoring for contaminants contributed by PPCPs will continue as part of regulatory requirements. Consumers can do their part to support stewardship of our water resources by reading personal care product labels to make environmentally-conscious purchasing decisions and properly disposing of unused medications.

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Operation Clean Water features articles on how GLWA and its suburban wholesale customers manage our water and sewer infrastructure to protect public health and the environment. It was created by the GLWA Customer Outreach Public Education Work Group that includes individuals from wholesale customers (Macomb, Oakland and Wayne Counties and DWSD), GLWA, MDEQ, SEMCOG and consultants. Operation Clean Water is published on the GLWA Customer Outreach Portal at outreach.glwater.org.

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