Emerging Contaminants
Pharmaceuticals and Personal Care Products

What are Pharmaceuticals and Personal Care Products?
According to the Environmental Protection Agency (EPA), Pharmaceuticals and Personal Care Products as Pollutants (PPCPs) refers, in general, to any product used by individuals for personal health or cosmetic reasons or used by agribusiness to enhance growth or health of livestock. PPCPs comprise a diverse collection of thousands of chemical substances, including prescription and over-the-counter therapeutic drugs, veterinary drugs, fragrances, lotions, and cosmetics.

Personal care products
- Hormones and mimics
- Antibiotics
- Blood lipid regulators
- Analgesics and NSAIDs
- Betablockers and bronchodilators
- Antidepressants
- Antiepileptics
- Antineoplastics
- Impotence drugs
- Tranquilizers
- Retinoids
- Diagnostic contrast media


How do PPCPs Get Into the Environment?
PPCPs are found mostly in surface water (but also sometimes in ground water) due to widespread usage in a broad range of human activities. PPCPs may be introduced into water supplies by sources such as hospitals, pharmaceutical manufacturers, facilities that deal with animal operations, surface application of manure, and through use by individuals. They enter the sanitary sewer primarily through excretion of partially metabolized pharmaceuticals by the human body, and the disposal of unwanted medications down the toilet or drain. Sewage effluent may also contain trace amounts of PPCPs because wastewater treatment plants do not have the capability to remove 100 percent of the PPCPs found in their influent.

About 50 million pounds of PPCPs are distributed each year that end up in surface waters. Their use is more widely distributed than industrial chemicals, where chemical usage is often limited to an urban area.

Drug classes
- Fragrances
- Preservatives
- Disinfectants and antiseptics
- Sunscreen agents
- Nutraceuticals and herbal remedies
What are PPCPs known effects on humans?
Just as with nonylphenol, more is known about human exposure to significant amounts of PPCPs than is known about exposure to trace amounts found in surface waters. While the information we have is cause for concern, it should be noted that human health exposure to PPCPs from surface water is many times lower than exposures due to food intake (fats that we consume in our diet) or made naturally by people (ex. estrogen, steroids). This means that much more of our exposure to PPCPs comes from the food we eat and from our bodies’ hormonal processes themselves than it does from the environment.

What are PPCPs known effects on animals?
- Antidepressants affect development, spawning and behavior of shellfish, ciliates, and other aquatic organisms
- Calcium-channel blockers inhibit sperm activity in certain aquatic organisms
- Analgesics and other drugs affect collagen metabolism in fish
- Nitro and amino-nitro musks (used as fragrances in personal care products) are highly toxic to aquatic life

What can you do?
- Don’t flush medications down the toilet or wash down the drain.
- Check with your pharmacy to see if they accept old medications.
- Check with the Colorado Springs Police Department about medication recycling. The number is 444-7270.
- Call us at 448-4800 with questions about how to dispose of old medications.

For more information:
EPA’s PPCP database
EPA Frequently Asked Questions