



### How do pharmaceuticals enter the environment?

- While some pharmaceuticals enter the environment via normal human and livestock excretion into sewer systems or waterways, much enters the environment via direct disposal, such as having been flushed down the toilet or poured down the drain.

### Isn't excretion responsible for more pharmaceuticals entering the environment than improper disposal?

- Pharmaceuticals enter the environment through both excretion and disposal. The portion that we can control right now is improper disposal.
- Pharmaceuticals improperly disposed of down the drain have not been degraded at all by the body and may be more potent.

## **Why don't wastewater treatment plants improve treatment to remove pharmaceuticals?**

- While treatment does remove and reduce some types of pharmaceuticals, wastewater plants are designed to treat human and biological waste, not complex pharmaceutical chemicals. Because some aquatic species have shown sensitivity to the low levels of medications that do pass through treatment plants, the more medication we can prevent from going down the drain, the better.
- Alternative treatment may have other environmental consequences. For example, reverse osmosis results in a brine of contaminants that must be properly disposed of as well. This type of treatment also requires enormous amounts of energy, which could also mean more greenhouse gases emitted into the environment.
- Adding more sophisticated treatment, like ozone or reverse osmosis is always more expensive than prevention. For example, advanced treatment is extremely expensive and requires enormous amounts of energy, costing communities millions of dollars and significantly increasing utility rates.

## **Do pharmaceuticals impact water quality?**

- Several studies have shown that exposure to certain pharmaceuticals results in abnormal development and reproduction in fish and other wildlife, even at very low levels.
  - The antidepressant Fluoxetine delayed development of young Western Mosquitofish.
  - Increased numbers of male fish have been associated with pharmaceuticals in ocean waters in Orange County.
- With the advance of technology and testing, some waterways that supply drinking water have been reported to have trace levels of pharmaceuticals.

## **What should I do with unwanted or expired medication?**

- Help protect people, pets and the environment by taking prescriptions as directed, and then properly disposing of your unused portions.
  - Do not pour medications down the drain or flush them down the toilet.
  - Avoid placing medications in garbage cans where they can be ingested by children or pets, or scatter and pollute the soil and groundwater at the landfill.
- Regularly check [www.BayWise.org](http://www.BayWise.org) for updated information on local disposal options and collection events.
- Remember: No Drugs Down the Drain Please!