

## WHAT CAN I DO?

### CONSUMERS

- Dispose of unused or unwanted medications at take-back sites
- Do NOT dispose of any medication down the toilet or in the trash
- Purchase drugs in small amounts, limiting expired medications
- Ask for medications with low environmental impact
- Encourage your health provider to take back unused and expired drugs
- Commit to health and wellness strategies to reduce your reliance on medications
- Donate to Teleosis' Green Pharmacy Pollution Prevention Campaign

### PHARMACISTS AND PROVIDERS

- Do not prescribe more medication than can be used
- Prescribe starter packs and refill packs
- Review and regularly reassess the patient's total consumption of medication
- Learn which drugs have the highest eco-toxicity
- Consider environmental impact when prescribing medications
- Educate patients, consumers, and colleagues about the importance of proper disposal of pharmaceutical waste
- Partner/Donate to Teleosis' Green Pharmacy Pollution Prevention Campaign



## GREEN PHARMACY POLLUTION PREVENTION CAMPAIGN

The Teleosis Institute's Green Pharmacy Program goal is zero pharmaceutical waste in the environment. Our program is a partnership with local pharmacies, health professionals, public and private organizations that are committed to providing proper disposal sites for unwanted drugs and nutritional supplements. Our Green Pharmacy Program provides the education and opportunity for everyone involved in the life cycle of pharmaceutical medicine to participate. Green Pharmacy take-back sites are located in the San Francisco Bay Area, and provide environmentally positive alternatives to improper disposal of unwanted drugs. To find a take-back site, visit [www.teleosis.org/greenpharmacy](http://www.teleosis.org/greenpharmacy)

### DONATE NOW!

Support Green Pharmacy and help keep drugs out of our water. Find out more about how you can become part of the solution, visit us at: [www.teleosis.org](http://www.teleosis.org)

### ABOUT THE TELEOSIS INSTITUTE

The Teleosis Institute is an educational 501(c)(3) non-profit organization devoted to reducing the environmental impact of health care through sustainable medical practices. We work with the health care community to build a movement for positive social and environmental change.



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## DRUGS IN OUR WATER

*Prevent Pollution • Dispose Medicines Safely*



TELEOSIS INSTITUTE

*Health Professionals Promoting a Healthy Environment*



## WHY ARE THERE DRUGS IN OUR WATER?

Drugs enter the environment in two ways:

- Unmetabolized medicines and supplements excreted by people are difficult to remove through wastewater treatment
- Unwanted drugs are improperly disposed of in the trash or toilet.

Over 80% of waterways tested in the U.S. show traces of common medications such as acetaminophen, hormones, blood pressure medicine, codeine, and antibiotics. These fall under a class of chemicals known as PPCPs.

## WHAT ARE PPCPs?

Pharmaceutical and Personal Care Products (PPCPs) includes prescription and over-the-counter therapeutic drugs, fragrances, cosmetics, sun-screen agents, nutritional supplements and herbs.

The U.S. EPA considers the presence PPCPs in the environment one of the most significant emerging threats of the 21st Century.

## HOW DO DRUGS AFFECT OUR ENVIRONMENT?

Current research provides evidence on a range of impacts to living organisms. Estrogens cause male fish to become female. Antidepressants cause lobsters to be more aggressive. Prozac induces reproduction in shellfish. These are just a few examples of PPCPs impact on the environment.

## HOW DO PPCPs AFFECT HUMAN HEALTH?

The evidence for the direct consequences of PPCPs on humans is only beginning to be investigated. A landmark study in 2006 found that a mix of 13 common medications common to drinking water inhibits cell growth in *human* embryonic cells. This is one of the few studies that looks at how mixtures of prevalent medications can affect biological activity even at low concentrations.

## WHY ARE THERE UNUSED MEDICINES?

We rely heavily on pharmaceuticals in our current medical system. Drug consumption in the U.S. has grown 109% from 2000-2004. 4 out of 5 patients leave their doctor's office with at least one prescription. Doctors often discontinue medications, causing others to go unused. Consumers also purchase certain drugs in large quantities that eventually expire. A recent take-back program in San Francisco found the average household had 2.7 pounds of unwanted or expired drugs.



## WHO IS RESPONSIBLE FOR DISPOSING UNUSED MEDICINES?

Currently, pharmacists, law enforcement agencies and municipal waste organizations are taking the most responsibility for properly disposing of unused drugs. To achieve zero waste, 'cradle to cradle' product stewardship is necessary. This means everyone including the manufacturers, distributors, retail pharmacies, physicians, veterinarians, and consumers all participate in unused product recycling and disposal. The Teleosis Institute's Green Pharmacy Program engages all parties for the responsible and safe disposal of unused medicines.

## WHAT'S BEING DONE ABOUT PPCPs?

PPCPs are found to be *pseudo-persistent* because they enter the environment faster than they can be removed. In response to research, countries such as Europe, Australia, and Canada have implemented product stewardship models for unused drugs. In the U.S., take-back programs are being created, and product stewardship models investigated. For a list of take-back efforts visit [www.teleosis.org](http://www.teleosis.org).

\* References for all studies can be found at [www.teleosis.org/brochurerefs](http://www.teleosis.org/brochurerefs)