Drug Pollution
OR
Pharmaceutical Pollution



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Introduction

- **Water pollution** is the contamination of water bodies This form of environmental degradation occurs when pollutants are directly or indirectly discharged into water bodies without adequate treatments to remove harmful compounds.
- Water pollution affects the entire biosphere – plants and organisms living in these bodies of the water In almost all cases the effect is damaging not only to individual species and population, but also to the natural biological communities And the drug pollution consider type of the water pollution

Definition

- **Drug pollution or pharmaceutical pollution** is pollution of the environment with pharmaceutical drugs and their metabolites, which reach the marine environment (groundwater, rivers, lakes, and oceans) through wastewater. Drug pollution is therefore mainly a form of water pollution.

- Prescription drug pollution may harm humans, aquatic life because of millions of doses of prescription drugs that been swallow annually to combat cancer, pain, depression and other ailments do not disappear harmlessly into their digestive systems.

Sources

Most such pollution comes simply from the drugs having been cleared and excreted in the urine.

- Chemical ,also get into the water from the drugs we use, most of the it is excreted get into waste.
- Healthcare institutions are another source of pharmaceutical water pollution, hospitals are probably less of problems than nursing homes because they typically have on site pharmacies with arrangements in place to return unused drugs to manufacturers for credit or disposal.
- Other sources include agricultural runoff (because of antibiotic use in livestock) pharmaceutical manufacturing. Drug pollution is implicated in the sex effects of water pollution.
- pharmaceutical manufacturing contributes to the problem

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Types

- **"Pharmaceuticals",** or prescription and over-the-counter medications made for human use .
- **"Personal care products"** may include cosmetics, fragrances, menstrual care products, lotions, shampoos, soaps, toothpastes, and sunscreen.
- **Traces of illicit drugs** can be found in waterways and may even be carried by many.

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Effects

Effects on Human :

- No studies have shown a direct impact on human health. However, the absence of empirical data cannot rule out the possibility of adverse outcomes due to interactions or long-term exposures to these substances.

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Effect on environment :

- While the full effects on the environment are not understood, there is concern about the potential they have for harm because they may act unpredictably when mixed with other chemicals from the environment or concentrate in the food chain.

Effect on fishes :

- numerous studies have shown that estrogen and chemicals that behave like it has feminizing effect on male fish and can alter female-to- male ratios
- other research has uncovered popular antidepressant medication concentrated in the brain of the fishes from water waste treatment plants

Solution

there 4 ways to reduce your pharmaceuticals footprints

- **Limit bulk purchase**

volume discounts make the price attractive but big bottle of unused pills creation opportunity for medications to end up in the water

- **Use drug take back programs**

the federal drug enforcement agency , has held tow national drug take back days and is likely to organize the issue



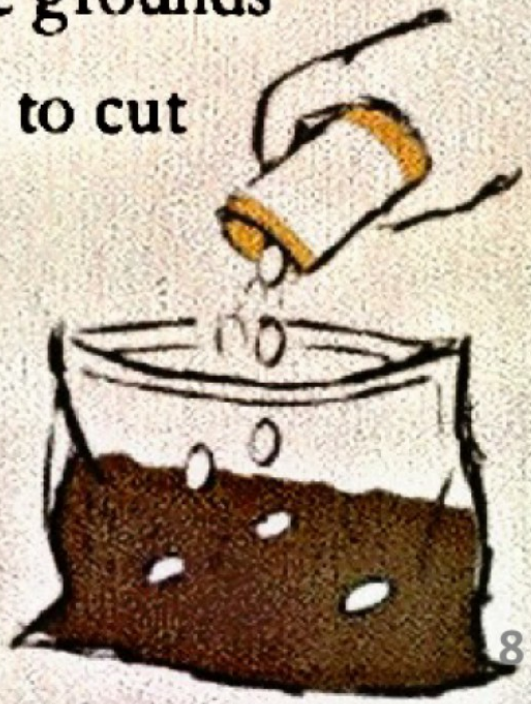
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- **Do not flush unused medicines or pour them down**

you can find a drug take back program that will accept the medication which you do not use

- **Be careful about how you throw medication into the trash:**

if you put them in the trash remove them from the packaging , crash them and seal them in a plastic bag with some water are supposed to add some sawdust, cat litter, coffee grounds or some other unappealing materials to the bag to cut down the contents .



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Safe Disposal

Depending on the source and ingredients:

- **pharmaceutical products,** the most environmentally safe disposal method is to take advantage of a community drug take-back programs that collect drugs at a central location for proper disposal .
- **Personal Care Products:** participants may bring in vitamins and homeopathic remedies and other personal care products.

- **Another method used is biodegradation,** and through this method microorganisms, such as bacteria, feed or break down these pollutants thus eliminating them from the contaminated media.

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Prevention

- Burning them chemically degrades their active molecules, with few exceptions. The resulting ash can be further processed before land filling,
- There are now programs in many cities that provide collection points at places including drug stores, grocery stores, and police stations.
- Another aspect of drug pollution prevention is environmental law and regulation.



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Conclusion

- In conclusion , drug pollution or pharmaceutical pollution is harmful type of pollution happens when humans from drug industries are irresponsible for their actions and contaminate the water with their unwanted drugs and pharmaceutical products.
- it is not affecting the environment only , but also organisms living in water and becomes another dangerous reasons of humans behavior . therefore , to prevent issue like such , we human should tack our actions into consideration and do things that prevent drug pollution as well as raise awareness to educate those who do not know the consequences of this issue.

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Thank You

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