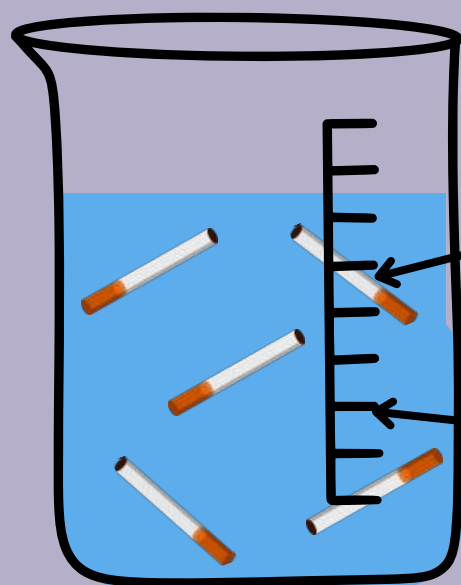


New Study Shows Cigarette Butt Waste Releases Chemical Pollutants into Waterways

1.



**Carbon-based
compounds
leaching**

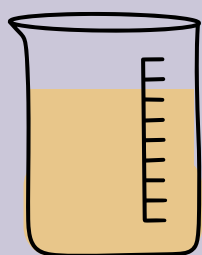
**Nitrogen-based
compounds leaching**

Researchers compared cellulose acetate, unused filters, and smoked filters.

- How much does each contribute to water pollution?
- How quickly are compounds leached over time?

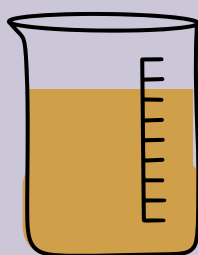
2.

99% of pollutants released within 1 hour



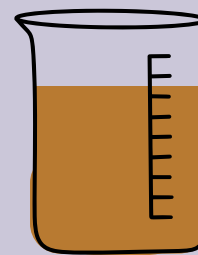
**Cellulose acetate filter
material**

Barely leaches



Unsmoked filter

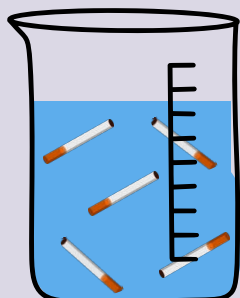
Some leaching



Smoked filter

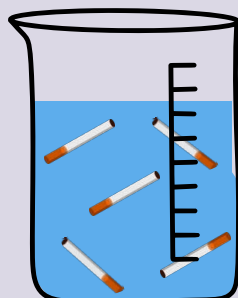
Heavy leaching

3.



Before sunlight

Chemicals present in water



After sunlight

Chemicals changed

Sunlight transforms these compounds and new ones are created.

Key Finding

Manufacturing additives and smoke residue contribute the most to leaching. Cellulose acetate itself contributed little to leaching.

Why Do These Findings Matter?

Sunlight **transformed smoke chemicals** into new toxic compounds.



Cigarette butt waste is a water pollution issue, not just an eyesore. Filters become **an immediate source of chemical pollution** when they get wet.

Findings support limiting the sale of **filtered** tobacco products, **benefiting youth**, and **reducing environmental pollution**.



Science in Action!

