PFAS AT THE TAP

HOW DO AT-HOME WATER FILTERS COMPARE?

PFAS (per- and polyfluoroalkyl substances): a group of thousands of unique, human-made chemicals.

Many well-studied PFAS are linked to cancer, high cholesterol, decreased immune function, and low birth weights in infants and stay in the human body for long periods of time (up to several years). **Contaminated drinking water is an important source of PFAS exposure.**

Eliminating PFAS at the source is the most equitable and effective response to PFAS contamination. However, there are multiple reasons why PFAS end up at your tap...

- PFAS are an "emerging" contaminant. No federal drinking water regulations existed until 2024 and only 6 PFAS are covered by these limits.
- PFAS sources can be difficult to identify. Chemical plants, landfills, and military sites are clear point sources, but PFAS are also present in the environment at low levels due to their widespread use.

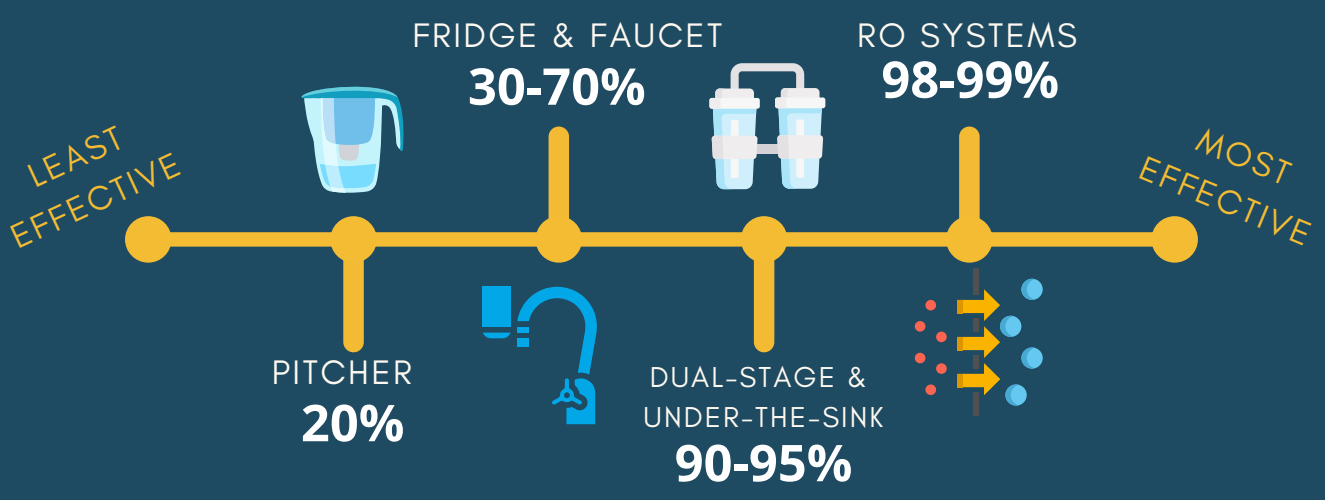
WHAT ARE YOUR IN-HOME FILTER OPTIONS?

The most common in-home water filters that remove PFAS use **activated carbon** and **reverse osmosis** membranes. Under sink, dual-stage filters (sediment filter + activated carbon block) are also an option.

Activated Carbon	vs.	Reverse Osmosis
COSTS LESS		COSTS MORE
OPTIONS: FAUCET FILTERS, PITCHER FILTERS, FRIDGE FILTERS, AND UNDER-THE-SINK FILTERS		GENERATES WASTEWATER
		INSTALLED UNDER THE SINK

REVERSE OSMOSIS FILTERS REMOVE PFAS BETTER THAN ACTIVATED CARBON FILTERS.

Below we've compared their removal rates for different PFAS...



A FEW NOTES: Dual-stage filters perform similarly to reverse osmosis filters. Also, despite having activated carbon, pitcher filters do not remove PFAS as effectively because of how quickly water passes through the filter material.

Partial removal of PFAS is better than none at all. It is important to complete the manufacturer's recommended maintenance to ensure maximum exposure reduction.

The National Sanitation Foundation certifies water filters that lower PFAS levels in drinking water to below 20 parts per trillion (PPT). The NSF certification process (standards 53 and 58) is strict and requires that manufacturers employ stringent health and safety measures.

You can find all NSF certified filters **HERE.**

Financial support for filtration may be available via the Bernard Allen Fund.

WHAT DO WATER FILTERS HAVE TO DO WITH ENVIRONMENTAL JUSTICE?

At-home water filters can be cost-prohibitive for many folks, which causes disparities in water quality and in turn disparities in health. It would be most equitable to have clean water at the source rather than it be the burden of the consumer.

Private well-owners in the Cape Fear River Basin may qualify for free testing and filtration. Eligibility for testing and the Sampling Request Form can be found online.

Content Sources:

1) CDC. "About Choosing Home Water Filters " (2024).
2) EPA. "Masters List of PFAS Substances" (2021).
3) Fenton, et al. Per- and Polyfluoroalkyl Substance Toxicity and Human Health Review: Current State of Knowledge and Strategies for Informing Future Research. Environmental Toxicology and Chemistry 2020 40(3):606-630. DOI: 10.1002/etc.4890.
4) Herkert, et al. Assessing the Effectiveness of Point-of-Use Residential Drinking Water Filters for Perfluoroalkyl Substances (PFASs). Environmental Science and Technology Letters 2020 7 (3):178-184. DOI: 10.1021/acs.estlett.0c00004.
5) NSF. "PFAS in Drinking Water" (2024).
6) NCDEQ. "BERNARD ALLEN EMERGENCY DRINKING WATER FUND PILOT PFAS TREATMENT SYSTEM REIMBURSEMENT PROGRAM FOR PRIVATE WELL OWNERS" (2023)

NC STATE UNIVERSITY Center for Environmental and Health Effects of PFAS