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# Water Filtration

*It is estimated that about half of Americans use some type of water filter in their home. There are a variety of unwanted substances that can contaminate drinking water, including heavy metals (like lead and mercury), pesticides, and industrial pollutants. While there are established national standards for tap water, those are not always met. Additionally, a water filter is especially important for people with a compromised immune system or those using well water.*

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Water filters can be included in water pitchers, attached directly to water faucets or pipes, or installed into refrigerators for ice makers and water dispensers. These filters also vary in their ability to filter out tiny particles. The tiny holes in filter screens are measured in microns, and they are scored by either an “absolute” (referring to the largest hole size) or “nominal” (average hole size) rating. Look for filters with an “absolute” rating. **The EPA and CDC recommend an absolute 1 micron pore size or smaller filter.**



## *Most Common Types of Water Filters*

**Carbon-based:** Most water pitcher filters use carbon filters. The carbon traps contaminants, removing them from the filtered water. These can be simple and affordable options, though they vary in effectiveness. High quality carbon-based filters reduce contaminants in water, however the filters need to be replaced regularly in order to be effective.

**Ceramic:** Ceramic filters are another simple and affordable option, though their effectiveness depends on its production quality. These filters have tiny holes that remove larger contaminants from water. Most ceramic filters are effective in reducing bacteria but not viruses. Some ceramic filtration systems also include carbon-based filters.

**Reverse Osmosis:** This filtration method is installed directly to your home’s plumbing and uses pressure to force water through the filter, leaving any contaminants behind in wastewater. While these filters need to be replaced less frequently than other options, they typically cost more initially and require a significant amount of water to function (the majority of the water used becomes wastewater). These filtration systems are considered the most

effective at removing contaminants, because they are able to filter much smaller particles than the other types of filters. One downside to its effective filtering is healthy minerals naturally found in water are also removed. Because of this, some reverse osmosis systems add minerals to the filtered water.

### *How to Choose a Water Filter*

NSF International is an independent, third-party certification and water testing organization. NSF has several set standards for both harmful contaminants and non-health aspects (like the taste and smell of water). To reduce harmful contaminants in tap water, look for the NSF certifications below. Check the filter's data sheet to see which specific contaminants the filter has been certified to remove.

- **NSF/ANSI 53-certified:** for carbon-based filters
- **NSF/ANSI 58-certified:** for reverse osmosis systems
- **NSF/ANSI 401-certified:** This certification is for “emerging contaminants” that are not yet regulated by the EPA, including new types of pesticides, pharmaceutical drugs, and traces of chemicals like flame retardants and detergents.

### REFERENCES

1. Choosing home water filters & other water treatment systems. Centers for Disease Control and Prevention. <https://www.cdc.gov/healthywater/drinking/home-water-treatment/water-filters.html>. Published August 4, 2020. Accessed September 21, 2021.
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