

Study Finds Bong Water Doesn't Filter Cannabis Smoke Effectively

Smoking Cannabis With a Water Bong Doesn't Effectively Filter Compounds From Smoke, Study Suggests

For decades, cannabis consumers have debated whether using a bong—where smoke is pulled through water before inhalation—offers a safer alternative to smoking joints. The common belief has been that water filtration makes for a cleaner and less harmful experience.

But a new study from researchers affiliated with the University of Wisconsin-Madison and colleagues in Thailand challenges that assumption, concluding that bong water appears to do little to filter chemical compounds from cannabis smoke.

Breaking Down the Research

The study, posted as a pre-print on bioRxiv, compared smoke produced by three popular cannabis strains—Bubble Gum, Silver Haze, and Hang Over OG—when consumed through both joints and bongs. Using gas chromatography-mass spectrometry (GC-MS), a method capable of identifying compounds by molecular weight, the researchers analyzed differences in smoke composition between the two methods.

The results were striking in their similarity. According to the paper, “bong water does not seem to significantly filter out any compound from the smoke.” In the range of compounds measurable by the GC-MS device—between 5 to 350 g/mol—there were no significant differences in smoke composition.

“No compounds were completely filtered by the bong water,” the authors wrote, adding that there were no cases where compounds appeared in joint smoke but not in bong smoke.

What Bongs May (and May Not) Catch

The researchers noted, however, that their methods had limitations. The GC-MS tool was not designed to capture larger particles, aerosols, or metals—substances that water could theoretically help trap. For this reason, the team stopped short of declaring bongs entirely ineffective at filtration. Still, the data suggest that for many commonly discussed compounds, bongs do not meaningfully reduce exposure.

“Although the effectiveness of the filtration of the bong is not clear, this study sheds light on the chemical composition of cannabis smoke,” the researchers concluded.

Beyond THC and CBD: Other Compounds of Interest

One interesting finding from the analysis was the consistent presence of β -caryophyllene in high concentrations across all samples. The compound, less studied than THC and CBD, has been linked in preliminary research to anti-inflammatory, antibiotic, antioxidant, anticarcinogenic, and local anesthetic properties. Its prominence in cannabis smoke suggests it could play an underappreciated role in the plant's physiological effects.

The Need for Standardized Cannabis Research

The study also underscores a broader challenge in cannabis science: the lack of standardized tools to assess the composition of smoke. Unlike tobacco research, which benefits from decades of uniform testing methods, cannabis studies often use disparate techniques, making it difficult to compare results across strains or regions.

“Establishing standardized analytical approaches could support more accurate assessments of cannabis quality, health risks, and therapeutic potential, while enabling comparisons across strains, cultivation methods, and global research efforts,” the authors wrote.

They emphasized the need for future research to incorporate larger sample sizes, improved smoke capture methods, and direct analysis of bong water to determine whether it absorbs harmful substances not captured in the current study.

Limitations and Withdrawal

Importantly, the study has not undergone peer review. In fact, the authors temporarily withdrew the paper from the pre-print server, citing “a conflicting bureaucracy issue due to the location this research was performed.” This procedural note does not necessarily invalidate the findings but highlights the preliminary nature of the research.

Policy and Legal Context

Bong water has long been a curious topic in U.S. drug policy. In 2009, the Minnesota Supreme Court ruled that bong water could legally be classified as a controlled substance, after testimony from a state patrol officer suggested that marijuana users sometimes saved bong water for later use. That ruling meant possession of bong water could trigger decades-long prison sentences.

The law was changed in 2025, when Minnesota legislators and the governor reformed statutes to prevent harsh penalties for drug residue. The issue gained national attention in 2024 when a Fargo woman faced the possibility of a 30-year sentence over bong water possession, prompting the ACLU to intervene.

Looking Ahead

While the new research does not close the book on the health implications of bong use, it does call into question the long-held belief that water filtration substantially reduces exposure to harmful cannabis smoke compounds. As cannabis legalization expands and more consumers weigh different consumption methods, studies like this underscore the need for rigorous, standardized science to inform both health decisions and public policy.

For now, the notion that bongs deliver a “cleaner” high may be more myth than fact.

Email: info@cannabisriskmanager.com | Phone: +415-226-4060

© Copyright 2025 Cannabis Risk Manager. All Rights Reserved