What People in the United States Are Asking About Per- and Polyfluoroalkyl Substances in Their Drinking Water Based on Online Search Behaviors: Executive Summary

Key Recommendation for Health Communicators:

1. **Use the same language and keywords the public uses—especially "PFAS" and "forever chemicals."**
   People overwhelmingly search using "PFAS" (6× more than "forever chemicals"), and rarely use technical names like PFOS or PFOA. Using these popular terms in headlines, social media, and web content improves search visibility and ensures messages appear in the same digital spaces where people are seeking answers.

2. **Emphasize actionable guidance over background science.**
   Nearly half (48.9%) of PFAS-related searches ask how to *filter or remove* PFAS from water. Far fewer ask about what PFAS are or where they come from. Communicators should prioritize practical self-efficacy information—how to test water, what filters work, and what bottled or tap water is safe—rather than focusing primarily on the chemistry or uncertainty of PFAS hazards

3. **Frame messages around exposure reduction and safety choices, not just risk awareness.**
   Searchers' questions reveal that the public already perceives PFAS as something to *avoid* and wants to know how to act. Effective communication should reinforce this motivation by framing content around clear, feasible behavior changes—such as selecting affordable filtration systems or identifying PFAS-free water sources—especially for communities most affected by contamination

Executive Summary of Article:

This study investigates what people in the United States are asking online about PFAS in their drinking water, using search engine analytics to inform public health communication strategies. The researchers employed Semrush, a digital marketing tool that analyzes Google search data, to identify and categorize the most common PFAS-related questions and keywords used by U.S. internet users. The goal was to align public health messaging with actual public concerns, following the principles of Communication Accommodation Theory (CAT), which emphasizes tailoring messages to audience language and interests.

The analysis revealed that the keyword "PFAS" had the highest search volume, significantly surpassing colloquial terms like "forever chemicals" and specific chemical names such as PFOS and PFOA. The study focused on the combined keyword "PFAS and water," which had an average monthly search volume of 8,840. From this, 97 unique questions were identified and categorized into five themes:

1. **How to filter or avoid PFAS** (48.9% of questions)
2. **General information about PFAS** (26.8%)
3. **Which water products contain PFAS** (16.7%)
4. **How to test for PFAS** (5.7%)
5. **Geographic presence of PFAS** (1.9%)

The dominant concern among searchers was how to remove PFAS from drinking water, including questions about the effectiveness of boiling, specific filter brands, and bottled water safety. This suggests that the public is actively seeking actionable solutions to reduce exposure rather than detailed health impact information.

The study highlights a potential misalignment between existing public health messaging—which often emphasizes scientific uncertainty—and the public's desire for practical advice. It recommends that communicators prioritize clear, actionable guidance on PFAS mitigation strategies, such as the use of reverse osmosis filters, which are most effective but costly, or pitcher filters.

Limitations of the study include its focus on national data, excluding regional variations and underserved populations without internet access. Future research could explore behavioral change stages based on search patterns and refine messaging strategies accordingly.

In conclusion, understanding online search behavior offers valuable insights into public concerns about PFAS in drinking water. By aligning outreach efforts with these concerns, health communicators can enhance message relevance, accessibility, and impact—ultimately empowering individuals to make informed decisions about their water consumption and health.