

Threat and Efficacy in Persuasive Messages About PFAS in Public Drinking Water published in *Science Communication*

Key Recommendation for Health Communicators:

- 1. Our data indicates that high-threat messaging specifically serves as the primary driver for increasing the perceived importance of PFAS contamination as a public health priority. However, high threat messages should also include actionable information to reduce the threat.**
- 2. In contrast to risk, the presence of high-efficacy information is the specific factor that dictates whether an individual intends to adopt protective behaviors like water filtration.**

Executive Summary of Article:

Our research utilizes the Extended Parallel Process Model to evaluate how variations in threat and efficacy framing in messages influence public response to PFAS contamination. In our study of municipal water users in Wisconsin, we tested four message types that varied levels of perceived threat, which include severity and susceptibility, and perceived efficacy, which covers the belief that an action like water filtration is effective and easy to perform. The results provide a clear roadmap for public health professionals seeking to increase both public concern and personal protective actions.

A central finding of this research is that risk and efficacy have distinctive effects. High threat information is the primary driver of perceived importance. When participants were presented with high risk data, they were significantly more likely to view PFAS as a major priority that warrants attention. However, simply making the issue feel important does not automatically lead to action. Instead, we found that efficacy is the primary driver of behavioral intention. Individuals only indicated a strong intent to filter their water when they believed that those actions were truly effective and within their reach.

When these two elements are out of balance, communication often fails. Specifically, high threat messages that lack a strong efficacy component may not affect behavior.

The most successful strategy for PFAS communication is the high threat and high efficacy combination. This pairing ensures that the audience recognizes the importance of the issue while feeling empowered to address it. Our data shows that this specific frame not only maximizes the intent to adopt personal safety measures but also builds the strongest public perception of issue importance. By providing a clear and actionable path alongside risk assessments, communicators can foster a proactive public mandate for environmental safety. In addition, the study found that efficacy information had the strongest effect on people who had already been thinking about PFAS and filtering their water.



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