# Article information:

Opportunistic pathogens and their health risk in four full-scale drinking water treatment and distribution systems - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S0925857420304225>

# Article summary:

1. Opportunistic pathogens (OPs) were found in tap water despite conventional treatment trains efficiently removing total coliforms.

2. Turbidity removal by coagulation and COD removal by ozonation followed by BAC filtration was the most effective treatment train for OPs removal.

3. Although OPs rebounded in tap water, quantitative microbial risk analysis showed that the potential infection risks were still below WHO and EPA benchmarks.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article "Opportunistic pathogens and their health risk in four full-scale drinking water treatment and distribution systems" provides valuable insights into the occurrence of opportunistic pathogens (OPs) in drinking water treatment and distribution systems in eastern China. The study highlights that conventional treatment trains involving coagulation/sedimentation, filtration, and disinfection efficiently remove total coliforms but fail to eliminate OPs such as Legionella spp., Mycobacterium spp., Mycobacteria avium, Pseudomonas aeruginosa, and Acanthamoeba spp. from treated and tap water.

The article's strengths lie in its use of culture-independent qPCR analysis to detect OPs, which is more sensitive than traditional culture-based methods. The study also employs quantitative microbial risk analysis (QMRA) to assess the potential infection risks posed by tap water. The results show that although OPs rebounded in tap water, the infection risk was below WHO and EPA benchmarks.

However, the article has some limitations that need to be addressed. Firstly, the study only considers four full-scale DWTPs in one city of eastern China, limiting its generalizability to other regions or countries with different infrastructure and environmental conditions. Secondly, the article does not provide a comprehensive overview of all possible OPs that may pose a health risk to humans. Thirdly, the study does not explore counterarguments or alternative approaches for controlling OPs in drinking water systems.

Moreover, the article lacks information on potential biases or conflicts of interest that may influence its findings. For instance, it is unclear whether any funding sources or affiliations with industry or government agencies influenced the research design or interpretation of results.

In conclusion, while this article provides valuable insights into the occurrence of OPs in drinking water treatment and distribution systems in eastern China, it has some limitations that need to be addressed. Future studies should consider a broader range of OPs across different regions and employ more comprehensive approaches for controlling their proliferation in drinking water systems. Additionally, researchers should disclose any potential biases or conflicts of interest that may influence their findings to ensure transparency and credibility.

# Topics for further research:

* Comprehensive overview of opportunistic pathogens in drinking water systems
* Alternative approaches for controlling opportunistic pathogens in drinking water systems
* Occurrence of opportunistic pathogens in different regions and countries
* Factors influencing the proliferation of opportunistic pathogens in drinking water systems
* Health risks associated with exposure to opportunistic pathogens in drinking water
* Conflicts of interest in research on opportunistic pathogens in drinking water systems

# Report location:

<https://www.fullpicture.app/item/51038c6c4fe43df9b15546be43472e50>