

Drinking water significant source of microplastics in human diet

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Emerging environmental contaminants, both chemicals and particulates, have been a concern for risk scientists for many years. Methods for reducing health and environmental risks from particles are still evolving.

Micro/nanoplastic particles are one environmental contaminant that has recently received research and media attention, and scientists are only beginning to study their potential for adverse environmental and human health effects.

In an effort to understand the potential risks associated with exposure to micro/nanoplastics, the Emerging Risks of Micro/nanoplastics: Perspectives From Diverse Sectors symposia at the 2020 Society for Risk Analysis virtual Annual Meeting, December 13-17, 2020, aims to highlight the current state of knowledge associated with physical and chemical transformation, hazard characterization, environmental effects, social implications and policy limitations.

Scott Coffin, Ph.D., California State Water Resources Control Board, will present the world's first regulatory investigation of microplastics in drinking water. His presentation, "Microplastics in drinking water: California's path towards assessing risks and developing regulations," outlines the state's ongoing implementation efforts of a 2018 Senate Bill, that require the State Water Resources Control Board to i) standardize the definition, ii) develop measurement methods for their presence in drinking water, iii) monitor for microplastics in drinking water for four years and publicly disclose the results, iv) consider a health-based guidance level to aid consumer interpretations of the results and v) accredit laboratories to analyze microplastics.

"The standardization of methods to analyze microplastics is urgently needed to reliably compare data from different studies," states Coffin. "In June 2020, California's regulatory definition of [microplastic](#) was adopted, which provides regulatory agencies, policymakers and researchers with a common language for a diverse group of contaminants."

In New York, researchers detected microplastics in the municipal tap

water. James McGrath, University of Rochester, tested [water samples](#) from the 30-mile route of the Hemlock Lake water production facility to Georgen Hall on the University of Rochester campus. McGrath's study, "Silicon nanomembranes for the evaluation of microplastic entrainment along a municipal water delivery route," used tools and methods that are easier than current protocols for the capture and assessment of microplastics. The nanomembrane filtration tools enable rapid detection of microplastics and other debris.

Despite the Hemlock Lake facility producing nearly debris-free water, entrainment increased the amount of debris along the route and the [water](#) delivered to the Hall was polluted with large amounts of—microdebris, including plastics. Broad surveillance, as demonstrated in this study, will need to be implemented to curb the growing level of pollution from plastics.

These studies will be presented on December 17 from 10:00—11:30 a.m. ET as part of the 2020 Society for Risk Analysis virtual Annual Meeting.

Provided by Society for Risk Analysis

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