

## عنوان مقاله:

Health Risk Assessment and Spatio-Seasonal Variation of THMs' Level in Urban Public Water: A Case Study in Central Iran

## محل انتشار:

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## خلاصه مقاله:

Trihalomethanes (THMs) in drinking water can cause carcinogenic and non-carcinogenic risks through oral ingestion, dermal absorption, and inhalation exposure. The aim of this study is determination of the spatial and seasonal trend of THMs and their health risk assessment in the drinking water distribution network of Yazd in central Iran. Sampling was performed in the fall and winter of ۲۰۱۸ in ۳۰ points. The concentration of THMs was measured by a chromatograph-mass spectrometer (GC-MS). The order of THMs was: chloroform > CHCl<sub>2</sub>Br > CHClBr<sub>2</sub> > bromoform. The northern part of city had the highest values of THMs. The maximum level of THMs in fall and winter equaled to ۳۹ and ۳۱ ppb, respectively, which were less than the WHO recommended limits for drinking, i.e. <۲۰۰ ppb. The mean value lifetime cancer risks of THMs from oral, dermal, and inhalation exposure were in the acceptable and low risk levels of class A carcinogens as USEPA. Also, the inhalation route for THMs had the highest cancer risk from among the three mentioned exposure routes. Hazard index was found to be <۱ through oral and dermal routes. Moreover, the sensitivity analysis revealed that the level of THMs for ingestion exposer and body weight for dermal and inhalation exposure had the highest impact on Chronic Daily Intake (CDI) and cancer risk. Therefore, the level of THMs was found to lie in the permissible range for drinking water, but much effort is required to control the concentration of THMs and manage their health risks in future.

## کلمات کلیدی:

Trihalomethanes, water, health risk, geography information system

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1630729>



