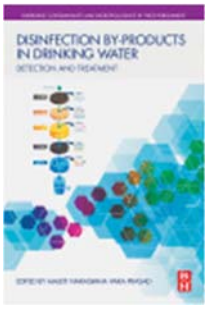
Disinfection By-products in Drinking Water
Detection and Treatment
2020, Pages 185-204



Chapter 8 - Disinfection by-product-induced diseases and human health risk

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Abstract

This chapter examines the spectrum of health-related diseases associated with exposure to disinfection by-products (DBPs) in disinfected drinking water based on evidences adduced from epidemiological data, experimental animal studies, and other models. Critical evaluation of confounding factors in the design, application, interpretation of results of animal studies, epidemiological

evidences, corresponding implications in population health impact assessment was presented. The use of predictors or biomarkers in assessing the overall health implications of the complex mixture of DBPs and why only a few DBPs have been regulated despite emerging evidences of more toxic compounds in the DBPs consortium were highlighted. Specific health-associated references with contacts with trihalomethanes, haloacetic acids, odorous DBPs, 3-chloro-4(dichloromethyl)-5-hydroxy-2(5H) furanone, chlorite, and bromate were discussed. In conclusion the chapter highlighted differences in sourcing and treatment of water by water utilities in developed and developing countries and recommend more elaborate epidemiologicalstudies in defining the actual health implication of exposure to disinfected water.

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Keywords

Health risk
bladder cancer
reproductive health
population health impact assessment
trihalomethanes
haloacetic acids
emerging disinfection by-products

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