The Fact Sheet (series no.8) – CBPs

Safe drinking water: A public heath challenge

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Abstract : Disinfection of drinking water through processes including filtration and chlorination was one of the major achievements of public health, beginning in the late 1800s and the early 1900s.

Chloroform and other chlorination disinfection by-products (CBPs) in drinking water were first reported in 1974. Chloroform and several other CBPs are known to cause cancer in experimental animals, and there is growing epidemiologic evidence of a causal role for CBPs in human cancer, particularly for bladder cancer.

It has been estimated that 14-16% of bladder cancers in Ontario may be attributable to drinking water containing relatively high levels of CBPs; the US Environmental Protection Agency has estimated the attributable risk to be 2-17%.

These estimates are based on the assumption that the associations observed between bladder cancer and CBP exposure reflect a cause-effect relation. An expert working group (see Workshop Report in this issue) concluded that it was possible (60% of the group) to probable (40% of the group) that CBPs pose a significant cancer risk, particularly of bladder cancer.

The group concluded that the risk of bladder and possibly other types of cancer is a moderately important public health problem. There is an urgent need to resolve this and to consider actions based on the body of evidence which, at a minimum, suggests that lowering of CBP levels would prevent a significant fraction of bladder cancers.

In fact, given the widespread and prolonged exposure to CBPs and the epidemiologic evidence of associations with several cancer sites, future research may establish CBPs as the most important environmental carcinogens in terms of the number of cancers attributable to it per year.

If you wish to protect yourself and your family from a wide range of undesirable substances commonly found in tap water, you should select point-of-use ceramic water filtration.