

## The Fact Sheet (series no.6) – Chlorination

### **Chlorination by-products in Iowa and the risk of brain cancer.**

**Authors :** Cantor KP; Lynch CF; Hildesheim ME; Dosemeci M; Lubin J; Alavanja M; Craun G.

**Address :** Division of Cancer Epidemiology and Genetics, National Cancer Institute, Bethesda, MD 20892-7240, USA.

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**Abstract :** The authors conducted a population-based case-control study in Iowa of 375 brain cancer patients and 2,434 controls.

A postal questionnaire was used to gather information on lifetime residential history, sources of drinking water, beverage intake, and other potential risk factors. Exposure to chlorination by-products in drinking water was estimated by combining questionnaire data with historical information from water utilities and trihalomethane levels in recent samples.

The analysis included 291 cases (77.6%) and 1,983 controls (81.5%), for whom water quality information was available for at least 70% of lifetime years. Proxies represented 74.4% of cases. The mean number and mean duration of places of residence were comparable between direct and proxy respondents, suggesting little contribution to bias.

After multivariate adjustment, odds ratios for brain cancer were 1.0, 1.1, 1.6, and 1.3 for exposure to chlorinated surface water of 0, 1-19, 20-39, and > or =40 years ( $p$  trend = 0.1). Among men, odds ratios were 1.0, 1.3, 1.7, and 2.5 ( $p$  trend = 0.04), and among women, 1.0, 1.0, 1.6, and 0.7 ( $p$  trend = 0.7)). Similar findings were found with estimates of average lifetime level of trihalomethanes.

The association was stronger among men with above-median tap water consumption. These observations deserve further attention, especially in view of increasing glioma rates.

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.

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