

Canterbury

District Health Board

Te Poari Hauora o Waitaha

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RE Official Information Act request CDHB 10234

I refer to your email, dated 21 November 2019 sent to Christchurch City Council which they partially transferred to Canterbury DHB on 28 November 2019 requesting the following information under the Official Information Act regarding the use of sodium hypochlorite in the Christchurch drinking water. We will respond to questions two, three and four: Specifically:

2. What part of the system gets checked for chloroform or THMs and are they also measured at individual homes which are on this supply?

The Institute of Environmental Science and Research (ESR) provided this response to the Canterbury DHB:

Chloroform is part of the disinfection by-product suite, i.e. we would include THMs (of which chloroform is one) in an analytical screen if we had reason to believe that THMs might be formed in a body of water. One of those reasons would be the supply being chlorinated. However, we would not expect to find THMs at levels of concern unless there was evidence of substantial levels of natural organic matter coming in contact with the chlorine, and we would not expect to find health-significant levels of THMs in a good quality groundwater that was chlorinated – the levels of total organic carbon in the water are too low.

The only other situation in which we might consider looking for chloroform in water is if we had reason to believe there was an industrial operation in a catchment, or groundwater capture zone, that might lead to contamination of a source.

'The concentration of disinfection by-products [DBPs] in a water increases (non-linearly) with time after the chlorine is added to the water. In a water supply system, time converts to distance, i.e. the farther away from the treatment plant a sample is taken, the higher the DBP concentration will tend to be. For this reason, samples taken for compliance purposes must be taken at the extremities of the reticulation system – i.e. worst case'.

Sampling results we receive from Christchurch City Council (CCC) clearly identify the sampling location as fire hydrants in particular streets.

3. Can you guarantee this is a safe water supply currently and does not lead to higher rates of bladder cancer? (Inhaled or Ingested).

A recent review of the relationship between bladder cancer and disinfection by products (DBPs) concluded:

Causal drinking water-related bladder cancer risks remain questionable and likely small compared to other factors, although surrogate-based DBP management is an appropriate strategy for maintaining drinking water quality as long as it does not compromise microbial disinfection.¹

The New Zealand Drinking Water Standards apply this precautionary approach and require public drinking water supplies to monitor DBPs. No drinking water supply which is compliant with the New Zealand Drinking Water Standards (NZDWS) will present any risk of bladder cancer.

4. Can you guarantee this treated water is safe to ingest for those that are immunocompromised by contact of inhalation of sodium hypochlorite, absorption through skin or ingested?

Drinking water delivered in strict accordance with the NZDWS is safe for immunocompromised people to consume. Immunocompromised patients face health risks from microbial contaminants of water which are adequately mitigated by the multi-barrier approach of the NZDWS. Dialysed patients have all been provided with carbon filters by the nephrology department to remove chlorine from the water used for dialysis, with test strips to ensure that the carbon filters are working.

I trust that this satisfies your interest in this matter.

Please note that this response, or an edited version of this response, may be published on the Canterbury DHB website after your receipt of this response.

Yours sincerely



Carolyn Gullery
Executive Director
Planning, Funding & Decision Support

¹ Cotruvo, J. A., & Amato, H. (2019). National Trends of Bladder Cancer and Trihalomethanes in Drinking Water: A Review and Multicountry Ecological Study. Dose-Response. <https://doi.org/10.1177/1559325818807781>