

Chlorinated Water Exposure May Boost Cancer Risk

Lyle Loughry, January 2008

A study from the Municipal Institute of Medical Research in Barcelona, Spain, shows that drinking, bathing or swimming in chlorinated water can produce by-products that have been tied to increased cancer risk.

The findings in a study headed by Dr. Cristina M. Villanueva, and her colleagues, suggest that these chemicals can be harmful when they are inhaled or absorbed through the skin, as well as when they are ingested. The most prevalent chlorination by-products, chemicals called trihalomethanes (THM), can be absorbed into the body through the skin or by inhalation, they add.

To investigate lifetime THM exposure and bladder cancer risk, the researchers matched 1,219 men and women with bladder cancer to 1,271 control individuals who did not have the disease, surveying them about their exposure to chlorinated water via drinking water, swimming pools, showering and bathing.

People living in households with an average household water THM level of more than 49 micrograms per liter had **double the bladder cancer risk** of those living in households where water THM concentration was below 8 micrograms per liter, the researchers found. THM levels of about 50 micrograms per liter are common in industrialized societies, they note. recent

Study participants who drank chlorinated water were at **35% greater risk of bladder cancer** than those who didn't, while use of swimming pools boosted bladder cancer risk by 57%. And those who took longer showers or baths and lived in municipalities with higher THM levels were also at increased cancer risk.

When THM is absorbed through the skin or lungs, Villanueva and her team note, it may have a more powerful carcinogenic effect because it does not undergo detoxification via the liver.

This study corroborates other similar studies conducted in the U.S., where health officials are concerned with the chlorinating by-products, also known as "chlorinated hydrocarbons" or trihalomethanes (THM's). Most THM's are formed in drinking water when chlorine reacts with naturally occurring substances such as decomposing plant and animal materials. Risk for certain types of cancer are

now being correlated to the consumption of chlorinated drinking water.

The **President's Council on Environmental Quality** states that "there is increased evidence for an association between rectal, colon and bladder cancer and the consumption of chlorinated drinking water." Suspected carcinogens make the human body more vulnerable through repeated ingestion and **research indicates the incidence of cancer is 44% higher among those using chlorinated water.**

A more complete article, entitled **How Safe is Your Tap Water--Really?** appears in the **Featured Health Articles** section on this website.