

Studies Show Link Between Chlorinated Water and Cancer

By Apollo

Tuesday, January 22nd, 2013



If you visit the US Environmental Protection Agency (EPA) website and look up "Chlorine", you will find under "Cancer Risk" the following:

*"Several human studies have investigated the relationship between exposure to chlorinated drinking water and cancer. These studies were not designed to assess whether chlorine itself causes cancer, but whether **trihalomethanes (THMs) or other organic compounds** occurring in drinking water **as a result of chlorination** are associated with an increased risk of cancer. **These studies show an association between bladder and rectal cancer and chlorination byproducts in drinking water.**"*

Astoundingly, they then state, "EPA has not classified chlorine for carcinogenicity."

Extensive research and case studies over the past two decades show that drinking chlorinated water is linked to bladder cancer, rectal cancer, colon cancer and breast cancer.

US Cities like Minneapolis and Saint Paul that rely on surface water and groundwater, such as the Mississippi River and lakes, heavily chlorinate at the water treatment plants. Over the years, the Minneapolis Drinking Water Quality Report consistently shows levels of chlorine at 2.1-3.1 ppm.

Suburbs generally tend to have lower levels of chlorine since they rely more on well water coming from aquifers. Most suburban cities have chlorine levels below 1 ppm. However, the cities who purchase water from Minneapolis will also have the elevated levels of chlorine: Columbia Heights, Crystal, Golden Valley, Hilltop, New Hope, the Morningside neighborhood in Edina, and some neighborhoods in Bloomington, as well as the Minneapolis/St. Paul Airport.

Why is there chlorine in the tap water?

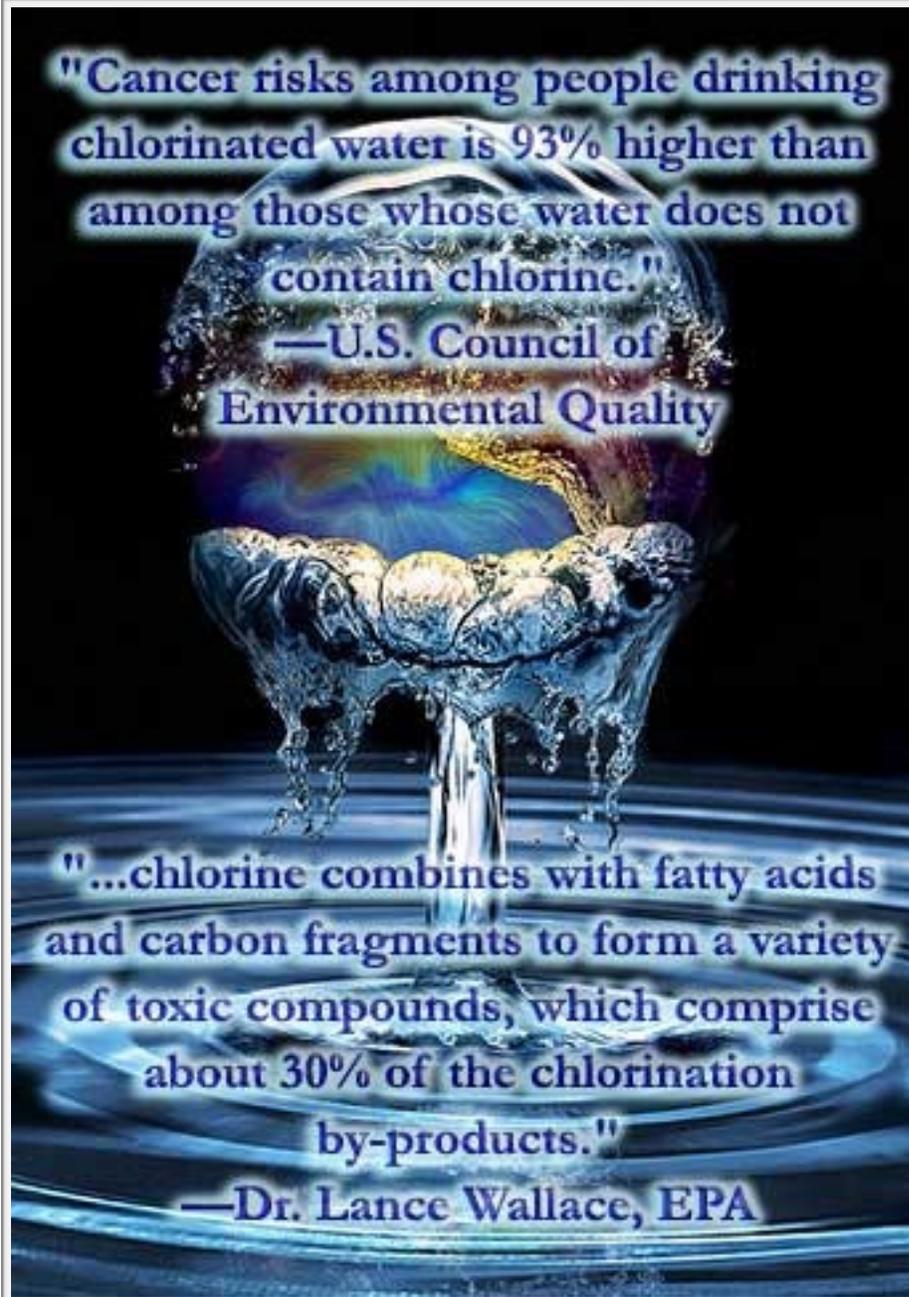


Chlorine is an inexpensive method to destroy a wide variety of water-borne pathogens such as bacteria, most viruses, and some protozoa. Chlorine helps prevent diseases like typhoid fever, cholera, dysentery, and hepatitis.

This water treatment method does not kill everything, however, as some **parasites like cryptosporidium and giardia are resistant to chlorine**. Cryptosporidium is a parasite found in fecal matter.

Research shows chlorine in drinking water linked to cancer

Because so much of the water we drink ends up in the bladder and/or rectum, ingestions of THMs in drinking water are particularly damaging to these organs. A recent study conducted in Hartford, Connecticut found that women with breast cancer have 50-60 percent higher levels of organochlorines (chlorine by-products) in their breast tissue than cancer-free women.

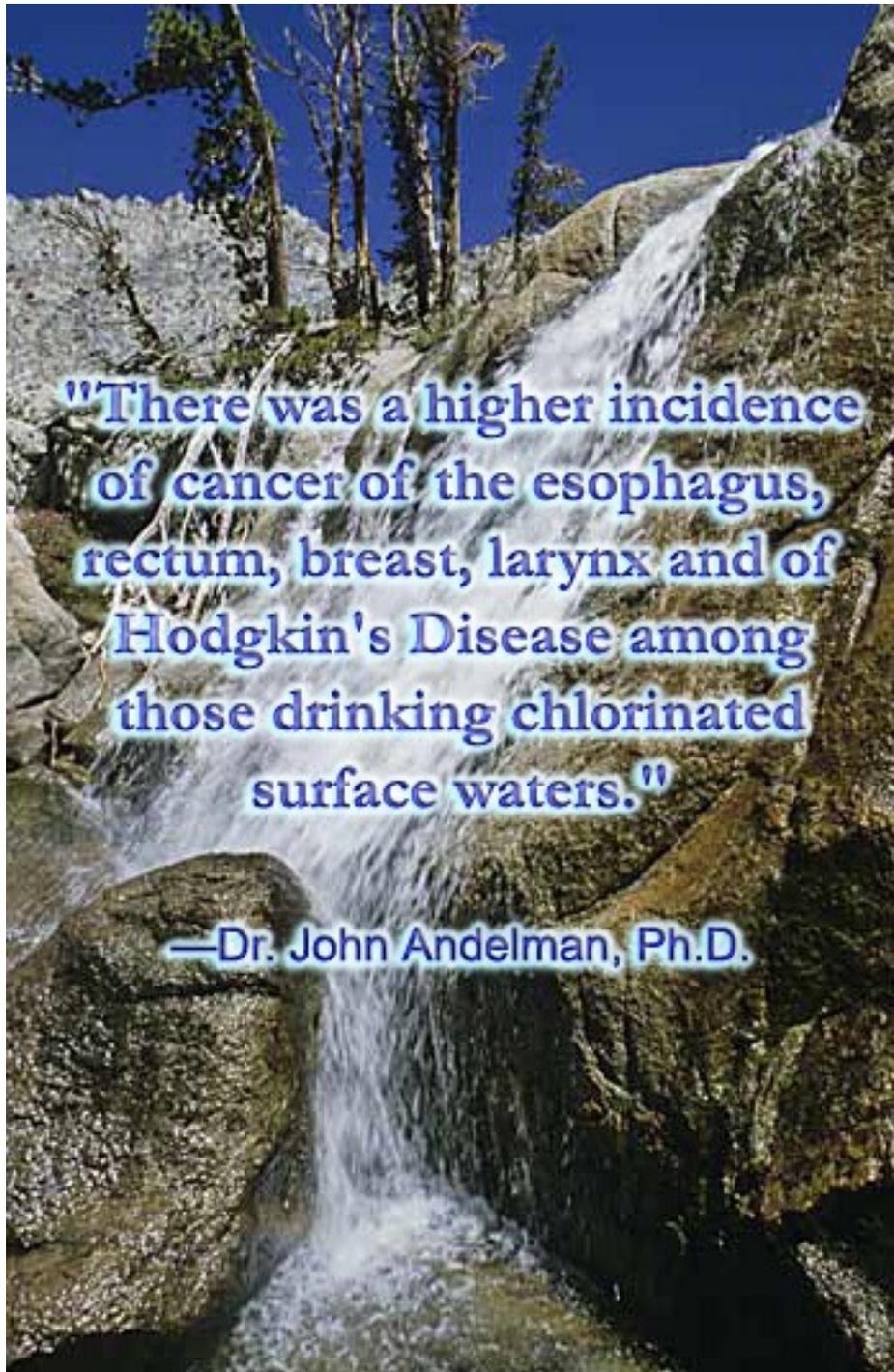


"A Professor of Water Chemistry at the University of Pittsburgh claims that exposure to vaporized chemicals in the water supplies

through showering, bathing, and inhalation is 100 times greater than through drinking water." "As chlorine is added to kill pathogenic microorganisms, the highly reactive chlorine combines with fatty acids and carbon fragments to form a variety of toxic compounds, which comprise about 30% of the chlorination by-products." "During the mid-1970's monitoring efforts began to identify widespread toxic contamination of the nation's drinking water supplies, epidemiological studies began to suggest a link between ingestion of toxic chemicals in the water and elevated cancer mortality risks. Since those studies were completed a variety of additional studies have strengthened the statistical connection between consumption of toxins in water and elevated cancer risks. Moreover, this basic concern has been heightened by other research discoveries. EPA – Dr Lance Wallace.

"The drinking of chlorinated water has finally been officially linked to an increased incidence of colon cancer. An epidemiologist at Oak Ridge Associated Universities completed a study of colon cancer victims and non-cancer patients and concluded that the drinking of chlorinated water for 15 years or more was conducive to a high rate of colon cancer." Health Freedom News, January/February 1987.

The largest long term study ever done, on 56 Finnish municipalities, "Drinking Water Mutagenicity and Gastrointestinal and Urinary Tract Cancers; an Ecological Study in Finland" was reported in the American Journal of Public Health, August 1994. The Reported results: **Statistically significant exposure-response association was observed between exposure to chlorinated water and incidence of bladder, kidney and stomach cancers.** In an ordinary municipality using chlorinated surface water, this exposure would indicate a relative risk of 1.2 for bladder cancer and 1.2 to 1.4 for kidney cancer compared with municipalities where non-mutagenic drinking water was consumed.



"There was a higher incidence of cancer of the esophagus, rectum, breast, larynx and of Hodgkin's Disease among those drinking chlorinated surface waters."

—Dr. John Andelman, Ph.D.

"Chlorine is the greatestcrippler and killer of modern times. While it prevented epidemics of one disease, it was creating another. Two decades ago, after the start of chlorinating our drinking water in 1904, the present epidemic of heart trouble, cancer, and senility began." Dr. J.M Price, M.D. Saginaw Hospital.

“Long-term drinking of chlorinated water appears to increase a person’s risk of developing bladder cancer as much as 80%,” according to a study published in the Journal of the National Cancer Institute. Some 45,000 Americans are diagnosed every year with bladder cancer. St. Paul Dispatch & Pioneer Press, December 17, 1987

“Although concentrations of these carcinogens are low...it is precisely these low levels which cancer scientists believe are responsible for the majority of human cancers in the United States.” Report Issued By The Environmental Defense Fund.

Chlorine does not actually cause cancer, it is the DBP’s that are dangerous

The health risks of chlorine come from disinfection by-products (DBP’s) that primarily fall into two umbrella category of carcinogens: THM’s, which stands for total (there are 4 of them total) trihalomethanes; and HAA5’s, which stands for the 5 haloacetic acids.

These DBP’s are carcinogenic toxins that are formed when chlorine reacts with organic matter such as decaying leaves and grass or pharmaceuticals.

According to a 1998-2001 case-control study, “bladder cancer risk was associated with long-term exposure to THMs in chlorinated water at levels regularly occurring in industrialized countries.” (Bladder Cancer and Exposure to Water Disinfection By-Products through Ingestion, Bathing, Showering, and Swimming in Pools by Cristina M. Villanueva et al. American Journal of Epidemiology, 2007)

Lead researcher Dr Cristina Villanueva said: “Inhaling or absorbing THMs may lead to a higher concentration in target organs, such as the kidney, bladder or colon.”

Is Swimming & Showering in Chlorinated Water Hazardous?



In a 2010 study — one of three published in *Environmental Health Perspectives* — chemists for the first time analyzed exactly what was in chlorinated water from a public swimming pool in Barcelona. They identified more than 100 chemical byproducts in the water. Many were toxic. Some had never been found in swimming pools or in chlorine-treated drinking water.

For the other two studies, 50 healthy adults swam laps for 40 minutes. The researchers measured levels of a number of substances in the blood, urine and breaths of the swimmers, both before they got in the pool and after they emerged. Each measurement looked at a marker, or sign of what was happening in the body.

The scientists expected to find some sign of respiratory distress. Previous studies have shown higher rates of asthma in lifeguards and competitive swimmers, as well as higher rates of eye, nose and throat irritation in pool workers.

Among a variety of markers for respiratory problems, though, the new work found that swimming led to a rise in just one. This marker showed an increase in how easy it is to penetrate the lining of the lungs. That's a sign, scientists think, of inflammation and a higher risk for asthma allergic diseases.

The most striking results came from the part of the research that looked at markers for cancer. After 40 minutes of swimming, the study found, people showed a large rise in markers of DNA damage that can lead to cancer. Concentrations of four of the most common byproducts were seven times higher after people swam.

One of several studies on the effects of chlorine related damage to hair and nails was published in 2000 in the journal *Dermatology*. In that study, a team of researchers examined 67 professional swimmers and 54 non-swimmers. The researchers found that 61 percent of the swimmers showed signs of hair breakage and discoloration, compared with none of the non-swimmers. The scientists also found that the hair discoloration coincided with surface damage of the swimmers' nail plates, apparently due to chlorine.



The THMs and other disinfectant byproducts we inhale during showers and baths may be much more harmful, since the chlorine gas we inhale enters directly into our blood stream. Therefore, even if you filter your drinking water, the amount of toxins you are exposed to from your daily shower or bath, through inhalation or skin absorption, may be cause for greater concern.

“Taking a warm shower or lounging in a tub filled with hot chlorinated water, one inhales chloroform. **Researchers recorded increases in chloroform concentration in bathers' lungs of about 2.7 ppb after a 10-minute shower. Worse, warm water causes the skin to act like a sponge; and so**

one will absorb and inhale more chlorine in a 10-minute shower than by drinking eight glasses of the same water." (*Heart Disease Bypass Surgery*).

There is another disinfectant that is also of concern. Some local water services use chloramine (chlorine + ammonia) to disinfect the water supply. Chloramine exposure may be even more damaging to the lung epithelium than chlorine, and may release ammonia as another toxic byproduct as well.

There are no shower filters on the market that *completely* remove chloramine. There are, however, whole house water filters that remove chlorine, chloramine, and other contaminants.