

Environmental Health Issues

Water

Cancer & Chlorine

Is the chlorine in our drinking water acting as catalyst triggering tumor development both in atherosclerosis and cancer? The addition of chlorine to our drinking water started in the late 1890's and had wide acceptance in the United States by 1920. Joseph Price, M. D, wrote a fascinating yet largely ignored book in the late 1960's, entitled Coronaries Cholesterol. Chlorine, Dr Price believes, is the primary and essential cause of atherosclerosis is chlorine. "Nothing can negate the incontrovertible fact the basic cause of atherosclerosis and resulting entities, such as heart attacks and most common forms of strokes is chlorine. The chlorine contained in processed drinking water." (1)

This conclusion is based on experiments using chlorine in the drinking water of chickens. The results: 95% of the chickens given chlorine added to distilled water developed atherosclerosis within a few months.

Atherosclerosis, heart attacks and the resulting problems of hardening of the arteries and plaque formation is really the last step in a series of biochemical malfunctions. Price points out it takes ten to twenty years before symptoms in humans become evident In many ways, this is reminiscent of cancer which can take twenty to thirty years to develop.

Can chlorine be linked to cancer too? In the chlorination process itself, chlorine combines with natural organic matter decaying vegetation to form potent cancer causing trihalomethanes (THM's) or haloforms. Trihalomethanes collectively include such carcinogens as chloroforms, bromoforms carbon tetrachloride, dichloroethane and others. The amount of THM's in our drinking water is theoretically regulated by the EPA. Although the maximum amount allowed by law is 100 ppb, a 1976 study showed 31 of 112 municipal water systems exceeded this limit. (2)

According to some studies by 1975, the number of chemical contaminants found in finished drinking water exceeded 300. (3) In 1984 over 700 chemicals had been found in our drinking water The EPA has targeted 129 as posing the greatest threat to our health, Currently the EPA enforces federal standards for 34 drinking water contaminants. In July, 1990 they proposed adding 23 new ones and expects this list increasing to 85 in 1992. (4)

Another report claims the picture is much worse. According to Troubled Waters on Tap "over 2100 contaminants have been detected in U. S. drinking water since 1974 with 190 known or suspected to cause adverse health effects at certain concentration levels. In total, 97 carcinogens and suspected carcinogens, 82 mutagens and suspected mutagens, 28 acute and chronic toxic contaminants and 23 tumor promoters have been detected in U. S. drinking water since 1974. The remaining 90% of the organic matter present in drinking water has not been identified by testing to-date.

Compounds in these concentration could pose serious toxic effects, either alone or in combination with other chemicals found in drinking water. Overall, available scientific evidence continues to substantiate the link between consumption of toxins in drinking water and serious public health concerns, Studies have strengthened the association between ingestion of toxins and elevated cancer mortality risks"(5)

Studies in New Orleans, Louisiana; Erie County, New York, Washington County Maryland, Ohio County, Ohio reveal high levels of haloforms or THM 's in drinking water The result – higher levels of cancer. (6) (7) (8) (9)

'The continued use of chlorine as the main drinking water disinfectant in the United States only adds to the organic chemical contamination of drinking water supplies. The current federal standard regulation of trihalomethanes do not adequately protect water consumers from the

multitude of other organic chlorination by-products that have been shown in many studies to be mutagenic and toxic'(5)

"Chlorine is so dangerous" according to biologist/chemist Dr. Herbert Schwartz," that it should be banned. Putting chlorine in the water is like starting a time bomb. Cancer heart trouble, premature senility, both mental and physical are conditions attributable to chlorine, treated water supplies. It is making us grow old before our time by producing symptoms of ageing such as hardening of the arteries. I believe if chlorine were now proposed for the first time to be used in drinking water it would be banned by the Food and Drug Administration."(10)

Many municipalities are experimenting with a variety of disinfectants to either take the place of chlorine or to be used in addition, as a way of cutting down on the amount of chlorine added to the water. However, these alternatives such as chlorine dioxide, bromine chloride, chloramines, etc., are just as dangerous as chlorine. We're replacing one toxic chemical with another.

On the positive side, some cities are starting to use aeration, carbon filtration, ultraviolet light and ozone as safe alternatives to chemical disinfectants. But the number of cities and the number of people getting water from these methods is minimal.

How can chlorination be linked to heart disease and cancer? In *Super Nutrition for Healthy Hearts* Dr. Richard Passwater shows how "the origin of heart disease is akin to the origin of cancer." Chlorination could very well be a key factor linking these two major diseases. Chlorine creates THM's and haloforms. These potent chemical pollutants can trigger the production of excess free radicals in our bodies. Free radicals cause cell damage. Excess free radicals can cause normal smooth muscle cells in the arterial wall to go haywire, to mutate. The fibrous plaque consequently formed is essentially a benign tumor. (11) Unfortunately, this tumor is linked with the origin of heart disease.

If your drinking water is chlorinated, don't drink it. You can purchase very effective filters which will remove 99% of the THM's or purchase proper bottled spring water. Just this simple safeguard may save thousands from heart disease and cancer - the two major degenerative killers in the United States.

1. Price JM. *Coronaries Cholesterol/Chlorine*. NY: Pyramid, 1969.
2. Maugh TH. *New Study Links Chlorination and Cancer* *Science* 1983; 211 (February 13): 694.
3. Wilkins JR, Reiches NA, Kruse CW. *Organic Chemical Contaminants in Drinking Water and Cancer* *AM. J. Epidemiology* 1979; 114: 179-190.
4. *U.S. Water News*. EPA Seeking to Expand Number of Drinking Water Contaminants to 34. August 1990: 8
5. Conacher D. *Troubled Waters on Tap: Organic Chemicals in Public Drinking Water Systems and the Failure of Regulation*. Wash D. C: Center for Study of Responsive Law, 1988: 114.
6. Page T, Harris RH, Epstein SS. *Drinking Water and Cancer: Morality in Louisiana*. *Science* 1976; 193: 55-57.
7. Gottlieb DG, Osborne RH. *Preliminary Report on Nationwide Study of Drinking Water and Cardiovascular Diseases*. *J. Environmental Pathology and Toxicology*. 1980; 3: 65-76.
8. Carlo GL, Mettlin CJ. *Cancer Incidence and Trihalomethane Concentrations in a Public Water System*. *AM. J. Public Health* 1980; 70 (May): 523-525
9. Wilkins JR, Comstock GW. *Source of Drinking Water at Home and Site-Specific Cancer Incidence in Washington County, Maryland*. *AM J. Epidemiology*. 1981; 114: 178-190.
10. Donsbach KW, Walker M. *Drinking Water*. Huntington Beach, CA: Int'l Institute of Natural Health Sciences, 1981.
11. Passwater R. *Supernutrition for Healthy Hearts*. NY: Jova 1978.

Source: - *Healthy Water*, Martin Fox, PH.d.