

CHLORINATION: A LINK BETWEEN HEART DISEASE AND CANCER

by Martin Fox, Ph.D.

In many parts of the world, people suffer and die from a lack of drinking water. Fortunately, in the United States this is not the case. But, ironically, in the U.S. thousands can die from the chemicals added to the drinking water.

One of the most insidious, dangerous and harmful chemicals is chlorine--the chlorine added to most drinking water supplies.

I believe chlorine triggers the growth of abnormal cells leading to tumor development, both in atherosclerosis and cancer. The origin of heart disease is akin to the origin to cancer. Both can be linked to chlorine and the production of excess free radicals.

Dr. Joseph Price, a medical doctor, wrote a fascinating book in the late 1960's entitled, *Coronaries/Cholesterol/Chlorine*. He states, "The basic cause of atherosclerosis, heart attacks and most forms of strokes is chlorine. The chlorine contained in processed water."

To support this position, Dr. Price did a series of animal experiments on chickens. Within a few months, 95% of the chickens drinking chlorinated water developed atherosclerosis. To retest these results, Dr. Price divided the original control group into two groups, conducted the exact same experiment and obtained the exact same results.

Both chickens and pigeons are excellent laboratory models in the study of atherosclerosis in humans. Recently, Richard Bull of the Environmental Protection Agency studied the effects of chlorinated water on pigeons. His findings support Dr. Price's research and go a step further. Bull found pigeons given chlorinated water with diets low in calcium had serum cholesterol levels 50% greater than the unchlorinated group.

Many people are confused about cholesterol and its relationship to heart disease. Recently, the results of a 10 year government funded research project conclusively linked heart disease to serum (blood) cholesterol levels. Lowering serum cholesterol levels markedly reduces the number of fatal heart attacks. So far so good. But, 70% to 80% of all the cholesterol in our body is produced by the liver regardless of the dietary cholesterol intake. In fact, researchers have shown that serum cholesterol levels in humans are, for the most part, independent of the dietary cholesterol intake. In short, there appears to be no correlation between total dietary cholesterol intake and serum cholesterol levels. I

What caused this tremendous increase in serum cholesterol levels in the pigeons? Obviously, the addition of chlorine played a central role. But what mechanism can explain how chlorine could trigger such an increase in cholesterol levels?

Each cell in the body has a nucleus which contains DNA - the chemical blueprint which determines cell replication. Cells build tissues, tissues build organs. So, if our cells are healthy, we are healthy. If they are malformed, we set the stage for illness.

Now, chlorine and other chemical compounds in our drinking water create what's called 'free radicals'. A free radical is a chemical by-product of metabolism that is "looking for an accident to happen." Free radicals behave like bullets flying indiscriminately and whatever they hit can become damaged or destroyed. If our defense mechanism, our immune system is functioning properly, we can get rid of them. But, if our immune system is overloaded with excess free radicals, like it is when we drink chlorinated water, we can have a very serious problem. Free radicals can attack the cellular blueprint, alter it, change it, to the point that cells will multiply abnormally and then we can get a lump or bump, which can appear in a blood vessel, in the breast, the prostate, the pancreas, wherever.

Chlorine causes excess free radicals. Free radicals lead to cell damage. Once the cells are damaged, we see an elevation in serum cholesterol levels, atherosclerosis, hardening of the arteries and plaque formation. Chlorine can cause all these problems related to heart disease and can also be a cause of cancer. The plaque in atherosclerosis is essentially a benign tumor in the blood vessels.

With cancer, free radicals create malignant cells. In the chlorination process itself chlorine combines with natural organic matter, such as decaying vegetation, to form potent, cancer causing trihalomethanes or haloforms. Trihalomethanes, commonly abbreviated THM's, collectively include such cancer causing agents as chloroforms, bromoforms, carbontetrachloride and many others.

Although the maximum amount of THM's allowed by law is 100 ppb, a 1976 EPA study showed 31 of 112 municipal water systems exceeded this limit; that's around 30%. I wonder how many exceed this limit now. Even 100 ppb of THM's is too much. I believe we should have no more than 10 ppb of these cancer causing agents in our drinking water. The less the better. The safest approach is to have no THM's at all.

The proliferation of chemicals in our drinking water is staggering. Listen to this. In 1975, the number of chemical contaminants found in finished drinking water exceeded 300. In 1984, less than 10 years later, over 700 chemicals have been found in our drinking water. The EPA has targeted 129 as posing the greatest threat to our health. But, to date, requires only 14 to be tested to see if they are in our water!

This is risky business.

Studies in several locations throughout the U.S. revealed that high levels of haloforms or THM's in people's drinking water resulted in higher levels of cancer.

"Chlorine is so dangerous," according to biologist/chemist Dr. Herbert Schwartz, "that it should be banned." He states, "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 aging 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."

Drinking chlorinated water is hazardous, if not deadly, to our health. It is as simple as that. Chlorine in our drinking water creates THM's and haloforms. These potent chemical pollutants trigger the production of excess free radicals leading to cell damage. We do not wake up one morning with heart disease or cancer. These degenerative diseases take years of constant insult to injury to develop. Many doctors estimate the formation of plaque and the hardening of the arteries leading to heart disease can take 10 to 20 years, and cancer takes 20 to 30 years to develop. Day by day, we continually drink chlorinated water adding excess free radicals to our bodies which can lead to serious damage to cells and abnormal cellular growth. Eventually, enough cells are hurt and we experience the problems of heart disease and cancer. The origin of heart disease is akin to the origin of cancer. Both can have their basis in free radical damage.

Many municipalities are experimenting with a variety of other types of disinfectants to replace chlorine or to be used in addition as a way of cutting down on the amount of chlorine added to the water. However, these chemical alternatives can be just as dangerous as chlorine.

What can we do about chlorine, THM's and other organic chemical compounds in our drinking water?

There are two solutions: Buy proper bottled spring water or purchase an effective filter unit.

Many filters on the market that remove chlorine, bad taste and odors from the water are not effective in removing THM's and chemical pollutants

You need to read lab reports on filters and see if the unit you are considering will really solve your water problem. Proper filter systems installed at your tap in the home and office are available. They can efficiently and effectively remove virtually all the THM's, organic chemical pollutants like TCE, PCB, etc., in addition to chlorine and still leave the beneficial minerals in the drinking water.

Chemical pollutants can be odorless and tasteless but harmful and deadly. Proper care of a filter unit can result in safe, healthy drinking water. A complete analysis of what to look for in a lab report can be found in my book, *Healthy Water For A Longer Life*.

In summary, if I had to recommend only one thing that every person should do with regard to their drinking water, I would say: Don't drink chlorinated water. Just this simple safeguard could save thousands from heart disease and cancer - the two major killers in the United States.