

Don't Drink the Water

Water Warnings

This is a warning you are used to hearing when you travel abroad, but now it's hitting home.

According to the Washington, D.C. based Environmental Working Group (EWG), manufacturers dumped more than one billion pounds of toxic chemicals into rivers, lakes and other bodies of water between 1990 and 1994. EWG also estimates that manufacturers contributed about 450 million additional pounds via sewage.

In the 1940's, a billion pounds of synthetic chemicals were produced each year. By the 1980's, production was up to 500 billion pounds. And 1000 new chemicals are introduced each year. Yet the Federal Safe Drinking Water Act only addresses 100 contaminants.

Pesticides are another problem. Two billion pounds of pesticides are used every year. That's eight pounds for every American. These pesticides enter water systems via disposal sites, animal waste, runoff, sewage, etc. After reviewing published (but not publicized) State data and conducting its own tests, EWG found that a single glass of Midwestern tap water has three or more pesticides in it.

The following excerpt from **Tap Water Blues**, produced by the EWG and Physicians for Social Responsibility, states: "Every spring, farmers across the Corn Belt apply 150 million pounds of five herbicides--atrazine, cyanazine, simazine, alachlor and metolachlor to their corn and soybean fields. Every spring, rains wash a substantial portion of those chemicals into the drinking water of 11.7 million people in the Midwest and Louisiana. According to this article, none of these herbicides are removed by the conventional city municipalities drinking water treatment technologies that are used by more than 90% of all water utilities in the United States."

As recently as July 1999, a USA Today article outlined a wide-ranging government report which concludes that much of the nation's ground water and many of its streams are contaminated with pesticides and unhealthy levels of fertilizer chemicals. Many of the streams that are most heavily polluted with insecticides were in metropolitan areas such as those of Dallas-Fort Worth, Denver, Indianapolis, Las Vegas, Nev., Portland, Ore., Tallahassee, Fla., and Washington. However, to researchers' surprise, some of the worst contamination by insecticides was in urban streams.

Though banned in 1972, DDT turned up in stream sediment and fish in both urban and rural areas across the US. So did similar insecticides that were banned years ago. Most of the test sites had more than one contaminant. No one knows how combinations of contaminants, at low levels, affect human health or wildlife.



Clean air, contaminated water.

The additive, MTBE, is used in "reformulated" gasoline required by the Environmental Protection Agency in all or parts of 17 states. That accounts for about a third of the gasoline sold in the country. This additive allows gasoline to burn cleaner, but with terrible consequences.

Federal research shows that MTBE causes tumors in rats and may do the same in humans. A University of California study showed that the additive has affected at least 10,000 groundwater sites throughout the state. These discoveries are causing a national furor since MTBE travels farther and faster in groundwater and doesn't breakdown naturally.

Who is protecting our children?

EWG tests show that atrazine contaminates the tap water of almost 10 million people in 800 cities and towns in the Midwest. In many places, children receive their lifetime dose of this carcinogen in their first 4 months. Atrazine levels in water are highest in spring and summer, when farmers are spraying their fields, and kids get hot and drink a lot of water.

European countries do a much better job of protecting their children from atrazine. It's banned in many countries, including Germany, Italy and Sweden. In Switzerland where Novartis, the manufacturer of atrazine, is based, the drinking water standard for the substance is 30 times stricter than in the U.S.

Debugging the clean water myth

In this country, cities purify drinking water by using sedimentation, filtration, ion exchange and disinfection. Disinfection uses ozonation, and, particularly, chlorination to kill disease-causing microbes. Chlorine, once the salvation of the twentieth century, controls cholera, typhoid fever and other water-borne diseases. Now, scientists know it combines easily with other chemicals and naturally occurring organic materials to create organochlorines--potentially carcinogenic substances. Over 96% of agricultural chemicals contain chlorine.

Incidents in the United States -such as the outbreak of the microorganism cryptosporidium in Milwaukee's water supply in 1993 that killed more than one hundred people and sickened over 400,000, and lead and pesticide contamination-while not affecting most, threaten the tap water of millions Americans.

Beware. Bottled water may not be your answer.

Bottled water is regulated, but not stringently. It's only requirement is that is as safe as tap water. It may be nothing more than filtered tap water from some municipality. Point of use, multi-stage filtration is best. If the water is to be stored for any length of time, glass containers should be used whenever possible.

You aren't even safe in the shower!



As hot water steams, chemicals evaporate and are inhaled.

The amount of chlorine absorbed by your body in a 10-minute shower equals about two gallons of tap water consumption. Taking showers is a health risk, according to research presented in a meeting of the American Chemical Society. Showers-and to a lesser extent baths-lead to a greater exposure to toxic chemicals contained in water supplies than does drinking water. The chemicals evaporate out of the water and are inhaled. They can also spread through the house and be inhaled by others.

Thus far the most effective line of defense against the chemicals that may be absorbed or inhaled are point of use shower filters.

October 1, 1999 will prove to be a landmark day in the health of your family. A Federal law will require all city water municipalities disclose a water quality report to each of its customers.

The following excerpts pulled from headlines and periodicals across the country descriptively explain the hidden dangers in our water...

HIT THE BOTTLE

New Scientist, 9/18/86

Some 36 million Americans drink water that's contaminated with toxins, microbes or other pollutants, according to a survey by the Natural Resources Defense Council. And the number of those imbibing potentially unhealthy water shoots up to 50 million people - - 1 in 5 Americans - - if you include those whose water is inadequately treated for contaminants. The study is designed to influence Congress, which appears set to dilute the Safe Drinking Water Act, up for renewal later this year.

CHLORINATED WATER - NOT FIT FOR HUMAN CONSUMPTION

New Scientist, 9/18/86

Experts agree, MEDICAL COLLEGE OF WISCONSIN'S Dr. Robert Morris has been the featured health and water expert on Dateline NBC. Dr. Morris and colleagues at the medical center have concluded after examination of 10 previous studies of the cancer-causing problems of chlorinated water, "There is a clear pattern between consumption of chlorinated water and rectal and bladder cancer." It is projected that by the year 2015 the combined death rate from bladder, rectal and pancreatic cancer will exceed the lung cancer death rates due to carcinogens in water and food.

CHLORINE AND YOUR SHOWER

New Scientist, 9/18/86

"Taking long hot showers is a health risk, according to research presented last week in Anaheim, California, at a meeting of the American Chemical Society. Showers--and to a lesser extent baths--lead to a greater exposure to toxic chemicals contained in water supplies than does drinking the water. The chemicals evaporate out of the water and are inhaled. they can also spread through the house and be inhaled by others. House holders can receive 6 to 100 times more of the chemical by breathing the air around showers and bath than they would by drinking the water."

NEW SCIENTIST 18 September 1986

Ian Anderson

"Studies indicate the suspect chemicals can also be inhaled and absorbed through the skin during showering and bathing."

"Ironically, even the Chlorine widely used to disinfect water produces Carcinogenic traces."

"Though 7 out of 10 Americans drink chlorinated water, its safety over the long term is uncertain."

"Drinking chlorinated water may as much as double the risk of the Bladder Cancer, which strikes 40,000 people a year."

U.S. NEWS & WORLD REPORT - Jul 29 1991

Is Your Water Safe - The Dangerous State of Your Water! A long, hot shower can be dangerous. The toxic chemicals are inhaled in high concentrations."

BOTTOM LINE August 1987

Dr. John Andelman, Ph.D..

"On one hand, chlorination has freed civilisation from the constant dangers of waterborne epidemics. On the other hand in the mid - 70s scientists discovered that chlorination could create carcinogens in water."

"80% of the population drinks chlorinated water."

"There was a higher incidence of cancer of the oesophagus, rectum, breast, and larynx and of

Hodgkins Disease among those drinking chlorinated surface waters."

"Volatile organics can evaporate from water in a shower or bath."

"Conservative calculations indicate that inhalation exposures can be as significant as exposure from drinking the water, that is, one can be exposed to just as much by inhalation during a shower as by drinking 2 litres of water a day."

"People who shower frequently could be exposed through ingestion, inhalation and/or dermal absorption."

IS YOUR WATER SAFE TO DRINK?

Consumer Reports Books

"Skin absorption of contaminant has been underestimated and ingestion may not constitute the sole or even primary route of exposure."

AMERICAN JOURNAL OF PUBLIC HEALTH

Dr. Halina Brown

"Showering is suspected as the primary cause of elevated levels of chloroform in nearly every home because of the chlorine in the water."

ENVIRONMENTAL PROTECTION AGENCY

Dr. Lance Wallace

"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 the water."

"As chlorine is added to kill pathogenic micro-organisms, 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-1970s 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."

THE NADER REPORT - TROUBLED WATERS ON TAP

Centre For Study of Responsive Law

"The National Academy of Sciences estimate that 200 to 1000 people die in the United States each year from cancers caused by ingesting the contaminants in water. The major health threat posed by these pollutants is far more likely to be from their inhalation as air pollutants. The reason that emissions are high is that because water droplets dispersed by the shower head

have a larger surface-to-volume ratio than water streaming into the bath."

SCIENCE NEWS, VOL. 130

Janet Raloff

"The cause of atherosclerosis and resulting heart attacks and strokes is none other than the ubiquitous chlorine in our drinking water."

CORONARIES/CHOLESTEROL/CHLORINE

Dr. J.M. Price, M.D

"In the vast majority of cases where germ-free water is required whether for public supply, or in the swimming pool, the process of disinfection will involve the use of chlorine in one form or another."

CHEMISTRY AND CONTROL OF MODERN CHLORINATION

Dr. A.T. Palin, Ph.D.. (O.B.E.)

"Chlorine gas was despicably used during WWI. When the war was over, the use of chlorine was diverted to poisoning germs in our drinking water. All water supplies throughout the country were chlorinated. The combination of chlorine (when in drinking water) and animal fats results in atherosclerosis, heart attacks, and death."

WATER CAN UNDERMINE YOUR HEALTH

Dr. N.W. Walker, D.S.

"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."

SAGINAW HOSPITAL

Dr. J.M. Price, MD.

"Cancer risk among people drinking chlorinated water is 93% higher than among those whose water does not contain chlorine."

U.S. COUNCIL OF ENVIRONMENTAL QUALITY

"Drinking tap water that is chlorinated is hazardous, if not deadly to your health."

HEALTHY WATER FOR A LONGER LIFE

Dr. Martin Fox

"Known carcinogens are found in drinking water as a direct consequence of the practice of chlorination. A long established public health practice for the disinfection of drinking water."

MUNICIPAL ENVIRONMENTAL RESEARCH LABORATORY

Francis T. Mayo, Director

"Chlorine is used almost universally in the treatment of public drinking water because of its toxic effect on harmful bacteria and other waterborne, disease-causing organisms. But there is a growing body of scientific evidence that shows that chlorine in drinking water may actually pose greater long term dangers than those for which it was used to eliminate. These effects of chlorine may result from either ingestion or absorption through the skin. Scientific studies have linked chlorine and chlorination by-products to cancer of the bladder, liver, stomach, rectum, and colon, as well as heart disease, atherosclerosis (hardening of the arteries), anaemia, high blood pressure, and allergic reactions. There is also evidence that shows that chlorine can destroy protein in our body and cause adverse effects on skin and hair.

The presence of chlorine in water may also contribute to the formation of chloramines in the water, which can cause taste and odour problems.

"Since chlorine is required by public health regulations to be present in all public drinking water supplies, it is up to the individual to remove it at the point-of-use in the home.

KEMYSTS LABORATORY

Dr. Riddle, Ph.D.

BIBLIOGRAPHY

1. "SHOWERS POSE A RISK TO HEALTH", Ian Anderson, New Scientist, 9/18/86
2. "NON - INGESTION EXPOSURE TO CHEMICALS IN POTABLE WATER" Julian Andelman Working Paper 84-03, University of Pittsburgh, 1984.
- 3 "THE ROLE OF SKIN ABSORPTION AS A ROUTE OF EXPOSURE FOR VOLATILE ORGANIC COMPOUNDS (VOCS) IN DRINKING WATER", Halina Brown. American Journal of Public Health, Vol 74, 5/84.
4. "TOXIC SHOWERS AND BATHS", Janet Raloff. Science News, Vol. 130, Page 190.
5. "WATER", John F. Ashton and Ronald S. Laura. Nature & Health, 1988.
6. "HUMAN EXPOSURE TO VOLATILE ORGANIC COMPOUNDS IN HOUSEHOLD TAP WATER: THE INHALATION PATHWAY", T.E. McKone Environ. SCI, Technology, Vo1.21,No. 12, 1987, PP. 1194-1201.
7. "THE NADER REPORT - TROUBLED WATERS ON TAP", Duff Conacher and Assc.Centre For Study of Responsive Law, January 1988.
8. "DID YOU KNOW THAT... A LONG HOT SHOWER", Bottom Line/Personal, Aug.15, 1987
- 9 .MADEMOISELLE, Prior to August 15, 1987.
10. "CORONARIES/CHOLESTEROUCHLORINE", Joseph M. Price, Jove Book,Alta Enterprises, 1969.
11. "WATER CAN UNDERMINE YOUR HEALTH", N. W. Walker D.S., Norwalk Press, 1974.
12. "WATER-SAFE TO DRINK? SAFE TO BATHE IN?", Kurt W. Donsbach D.C., PH., 1989.

13. "PROTEINS IN NATURAL WATERS AND THEIR RELATION TO THE FORMATION OF CHLORINATED ORGANICS DURING WATER DISINFECTION", Scully. Environ, SCI.Tech., Vol. 22, No. 5, 1988.537-542.
14. "ORGANIC CHEMICAL CONTAMINANTS IN DRINKING WATER AND CANCER", A.M. J. Epidemiology, Vol. 110, 1979, P. 420.
15. "CANCER INCIDENCE AND TRIHALOMETHANE CONCENTRATIONS IN A PUBLIC DRINKING WATER SYSTEM", George L. Carlo. American Journal of Public health, Vol. 74, No. 5, 1984, PP. 479-484.
16. "STUDIES OF DIFFUSION OF WATER THROUGH DEAD HUMAN SKIN: THE EFFECT OF DIFFERENT ENVIRONMENTAL STATES AND OF CHEMICAL ALTERATIONS OF THE EPIDERMIS", G.S. Berenson and G.E. Burch, AM. J. of Tropical Medicine, 1951, No. 31 PP. 842-853.
17. "REGIONAL VARIATION IN PERCUTANEOUS PENETRATION IN MAN: PESTICIDES", H.J. Maiback. Arch. Environ. Health, Vol. 23, Sep. 1971, P. 209.
18. "STUDIES OF EPIDERMAL WATER BARRIER, PART 2: INVESTIGATION OF THE CHEMICAL NATURE OF THE WATER BARRIER", A. Mololtsy. J. of Invest. Derm, 1968, No. 50. PP. 19-20.
19. "TEMPORAL VARIATIONS IN TRIHALOMETHANE CONTENT OF DRINKING WATER", V.L. Smith. Environs. SCI. & TechNet., Vol. 14 No. 2, 1987, PP. 190-196.
20. "THMS IN DRINKING WATER", J.A. Court. Environs. SCI & TechNet., Vol. 15, No. 3, 1981, PP. 268-274.
21. "VOLATILE SYNTHETIC ORGANIC CHEMICALS (VOCS)", K.V. Dyke. Water TechNet. Vol. 13, No. 4, Apr. 1990, P. 38.
22. "IS YOUR WATER SAFE?" Carpenter, Hedges, Crab, Really and Bounds. U.S. News & World Report, July 29, 1991, PP, 48-55.
23. "IS YOUR WATER SAFE TO DRINK?", Raymond Gabber. Consumer Reports Book, 1987. ■