

## CHLORINE

Who was the genius who decided to start putting a poisonous chemical, a bleaching agent, in our water supply to kill germs? It certainly does a great job of killing most living things in our water; but it may be killing us too! Chlorine, you may recall, was used as a deadly weapon during World War I.

Chlorine is a pro-oxidant, causing free radical damage in the body, a major factor in aging and every kind of disease.

Nevertheless, chlorine has been used to disinfect public water in the U.S. for the last hundred years. It is not the most effective means of disinfection, and it is certainly not the safest, but it is the cheapest. According to a fairly recent report, it is used to treat water reaching about 75% of American homes.

Not too surprisingly, in the past few decades, chlorine and chlorine by-products have been linked with various forms of cancer (especially bladder, colon and rectal), neurological issues, reproductive problems such as miscarriages and neural tube defects, heart disease (both hardening of the arteries and elevations of blood pressure), decreased immunity and allergies, hypothyroidism and lung problems.

. . . chlorine gas

When you smell chlorine in your shower, it's because chlorine from tap water is escaping into the air as chlorine gas. Heat and increased surface area as the water is sprayed through the shower head accelerate this release. Since showers are usually poorly ventilated, chlorine gas concentrations can be quite high.

In sufficient concentrations, chlorine gas is an irritant to mucous membranes, the respiratory tract and the eyes. You can experience symptoms long before you can smell chlorine -- you can't smell it until levels are over 3.5 parts per million (ppm).

While severe respiratory tract damage occurs at higher concentrations, even at very low concentrations, volunteers experienced irritation of the nose, a weak cough, increased dryness of the throat, coughing, minor difficulty breathing and headache.

Chronic exposure to chlorine, as most Americans experience, creates chronic inflammation that damages cells and tissues faster than the body is able to repair them. This causes repair deficits, resulting in disease and aging -- you start to slowly fall apart.

People with any kind of lung disorders, like asthma, are going to be more sensitive to chlorine's irritating effects. Children inhale more air per unit of body weight than adults, so they will be more adversely affected.

A Belgian study in 2003 of children who swam in chlorinated swimming pools found elevated levels of trichloramine in their blood. Trichloramine is formed when chlorinated water reacts with urine, sweat and other organic matter, and it is believed to initiate a process that destroys the cellular barrier that protects the lungs.

Interestingly, high blood levels of trichloramine were found even among people who never swam in the chlorinated pool but just sat around it.

. . . would you like to age faster?

As a molecule, chlorine likes to grab organic matter and hold on for dear life, changing the nature of that organic matter in the process. This makes it an excellent disinfectant.

However, we must not forget that we are also organic matter. Chlorine attacks hair and skin as well, binding with their molecules. Hair becomes dry and brittle, and sometimes loses color. Skin gets flaky and itchy. Chlorine initiates free radical damage, aging the skin, and is associated with rashes like eczema.

Chlorine reacts with oils in the skin to form chlorinated compounds associated with cancer, which can then be absorbed through the skin into the bloodstream.