

CHLORINE

EFFECT AND DRAWBACKS

According to (CDC) Center for Disease Control and Prevention

Facts about Chlorine

Chlorine is an element used in industry and found in some household products. Chlorine is sometimes in the form of a **poisonous gas**. When liquid chlorine is released, it quickly turns into a gas which is heavier than air, stays close to the ground and spreads rapidly. The exposure of chlorine would provide adequate warning to people and long term **health effects**. [\(CDC, 2018\)](#)

How chlorine works

The extent of poisoning caused by chlorine depends on the amount of chlorine a person is exposed to, how the person was exposed, and the length of time of the exposure.

When chlorine gas comes into contact with moist tissues such as the **eyes, throat, and lungs**, an acid is produced that can damage tissues.



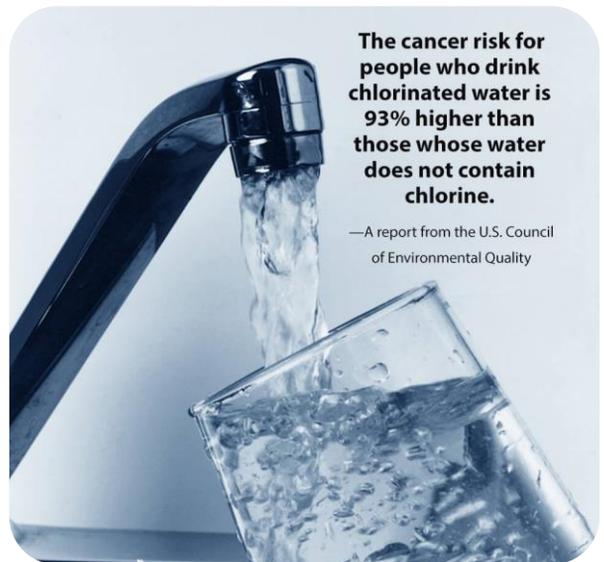
Chlorine

Chlorine exposure Signs and Symptoms

On exposure to dangerous concentrations of chlorine, the following signs and symptoms may cause: [\(CDC, Facts about chlorine 2018\)](#)

- Blurred vision
- Burning pain, redness, and blisters on the skin if exposed to gas.
- Skin injuries similar to frostbite can occur if exposed to liquid chlorine
- Burning sensation in nose, throat, and eyes
- Coughing
- Chest tightness
- Breathing difficulty or shortness of breath.
- Pulmonary edema (a potentially fatal accumulation of fluid in lungs)
- Nausea and vomiting
- Watery eyes
- Wheezing
- Long-term complications may occur after breathing in high concentrations of chlorine.

The by-products of chlorine Trihalomethanes (THMs) are highly carcinogenic and trigger cell damages and can lead to severe diseases. Exposure to chlorine gas causes effects ranging from severe respiratory and lung effects and can result in fatalities. [\(US, EPA R.E.D Facts. Water Research 43, 2009 Steve E. Hrudey\)](#)



The cancer risk for people who drink chlorinated water is **93% higher** than those whose water does not contain chlorine.

—A report from the U.S. Council of Environmental Quality

According to the U.S. Council of Environmental Quality

Chlorine is added to water supplies because it neutralizes many pathogens, including E.coli and Giardia but ultimately causing **health effects** and **toxic by products**.

Disadvantages

- Corrosive
- High Toxicity
- High Chemical hazard
- Highly sensitive to inorganic and organic loads
- Formation of harmful disinfection by-products
- Required careful handling, storage
- Lower disinfection effectiveness in turbid waters

[\(ATSDR, General information 2014.](#)

[CDC, Chlorination and disinfection by products\)](#)