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## Chlorine poisoning

Chlorine is a chemical that prevents bacteria from growing. Chlorine poisoning occurs when someone swallows or breathes in (inhales) chlorine.

This article is for information only. DO NOT use it to treat or manage an actual poison exposure. If you or someone you are with has an exposure, call your local emergency number (such as 911), or your local poison control center can be reached directly by calling the national toll-free Poison Help hotline (1-800-222-1222) from anywhere in the United States.

### Poisonous Ingredient

Chlorine reacts with water in and out of the body to form hydrochloric acid and hypochlorous acid. Both are extremely poisonous.

### Where Found

Chlorine is present in:

- Gas released when mixing bleach with some of the powdered cleansing products and ammonia (chloramine gas)
- Gas released when opening a partially filled industrial container of chlorine tablets that have been sitting for several months (for example, the first opening of a container after a pool has been closed all winter)
- Mild cleaners
- Some bleach products
- Swimming pool water (and tablets used in swimming pool water)

Note: This list may not include all uses and sources of chlorine.

### Symptoms

Chlorine poisoning can cause symptoms in many parts of the body:

#### AIRWAYS AND LUNGS

- Breathing difficulty (from breathing in the chlorine)
- Throat swelling (may also cause breathing difficulty)

- Water filling the lungs (pulmonary edema)

## BLOOD

- Severe change in acid level of the blood (pH balance), which leads to damage in all of the body organs

## EYES, EARS, NOSE, AND THROAT

- Loss of vision
- Severe pain in the throat
- Severe pain or burning in the nose, eyes, ears, lips, or tongue

## GASTROINTESTINAL SYSTEM

- Blood in the stool
- Burns of the food pipe (esophagus)
- Severe abdominal pain
- Vomiting
- Vomiting blood

## HEART AND BLOOD VESSELS

- Collapse
- Low blood pressure that develops rapidly (shock)

## SKIN

- Burns
- Holes (necrosis) in the skin or tissues underneath
- Irritation

## Home Care

Seek medical help right away. Do not make a person throw up unless told to do so by the poison control center or a health care provider.

If the chemical is on the skin or in the eyes, flush with lots of water for at least 15 minutes.

If the chemical was swallowed, immediately give the person water or milk, unless instructed otherwise by a provider. Do not give water or milk if the patient is having symptoms (such as vomiting, convulsions, or a decreased level of alertness) that make it hard to swallow.

If the person breathed in the poison, immediately move them to fresh air.

## Before Calling Emergency

Get the following information:

- Person's age, weight, and condition
- Name of the product (and ingredients and strengths, if known)
- Time it was swallowed
- Amount swallowed

## Poison Control

Your local poison control center can be reached directly by calling the national toll-free Poison Help hotline (1-800-222-1222) from anywhere in the United States. This national hotline will let you talk to experts in poisoning. They will give you further instructions.

This is a free and confidential service. All local poison control centers in the United States use this national number. You should call if you have any questions about poisoning or poison prevention. It does NOT need to be an emergency. You can call for any reason, 24 hours a day, 7 days a week.

## What to Expect at the Emergency Room

The provider will measure and monitor the person's vital signs, including temperature, pulse, breathing rate, and blood pressure. Symptoms will be treated as appropriate. The person may receive:

- Blood and urine tests.
- Breathing support, including oxygen delivered through a tube through the mouth into the lungs, and a breathing machine (ventilator).
- Bronchoscopy -- camera down the throat to look for burns in the airways and lungs.
- Chest x-ray.
- Electrocardiogram (ECG).
- Endoscopy -- camera down the throat to look for burns in the esophagus and the stomach.
- Fluids through a vein (by IV).
- Medicine to reverse the effect of the poison and treat symptoms.
- Surgical removal of burned skin (skin debridement).
- Tube through the mouth into the stomach to aspirate (suck out) the stomach. This is only done when the person gets medical care within 30 to 45 minutes of the poisoning, and a very large amount of chlorine has been swallowed.
- Washing of the skin (irrigation) -- perhaps every few hours for several days.

## Outlook (Prognosis)

How well a person does depends on the amount of poison swallowed and how quickly treatment is received. The sooner a person gets medical help, the better the chance for recovery.

Swallowing such poisons can have severe effects on many parts of the body. Burns in the airway or gastrointestinal tract can lead to tissue death. This may result in infection, shock, and death, even several months after the substance was swallowed. Scar tissue in the affected areas can lead to long-term problems with breathing, swallowing, and digestion.

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