CONDITION

Chlorophyll poisoning

Learn about possible symptoms after swallowing too much chlorophyll or chlorophyllin, what to do after an exposure, and when to seek urgent care.

WHAT IT IS
Illness after excessive chlorophyll or chlorophyllin ingestion

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Nausea, vomiting, abdominal cramps, diarrhea

WHAT CAUSES IT
Swallowing too much chlorophyll product

HOW IT IS DIAGNOSED
Exposure history and symptoms, no routine confirmatory test

MAIN TREATMENT
Supportive care

CAN IT BE CURED?
Yes, most improve with supportive care

IS IT AN EMERGENCY?
Sometimes, with trouble breathing

LONG-TERM OUTLOOK
Lasting complications unlikely after most small exposures

Overview

Chlorophyll is the green pigment that helps plants absorb light. Eating chlorophyll as part of vegetables and other foods is not considered poisoning. The term chlorophyll poisoning usually refers to symptoms after someone swallows a large amount of a chlorophyll product, such as a concentrated liquid, powder, tablet, or gummy.

Many products marketed as "liquid chlorophyll" contain chlorophyllin rather than natural chlorophyll. Chlorophyllin is a water-soluble substance made from chlorophyll. Some forms contain copper and may be listed on the label as sodium copper chlorophyllin or chlorophyllin copper complex.

Chlorophyll and chlorophyllin are generally considered to have low toxicity when used in ordinary food or supplement amounts. The more common effects of excess exposure are

digestive symptoms and temporary green discoloration of the tongue, stool, or urine. Serious illness is not expected from most small, accidental exposures.

However, the name "chlorophyll product" does not identify everything in the container. Supplements may contain sweeteners, herbs, vitamins, minerals, alcohol, or other ingredients. A concentrated product may also cause more symptoms than chlorophyll in food. The risk depends on the exact product, the amount swallowed, the person's age and health, and whether symptoms are developing.

Eating an unknown green plant is a different situation. A plant can contain chlorophyll and still be poisonous. Do not assume that a leaf, berry, mushroom, or garden product is safe because it is green or described as natural.

In the United States, contact Poison Control at 1-800-222-1222 or use the Poison Control online tool after a suspected overdose or accidental exposure. The service can give advice based on the product and circumstances.

Symptoms

Symptoms, when they occur, usually involve the digestive system. They may begin soon after swallowing a concentrated product, although timing varies by formulation and other ingredients.

Possible effects include:

Green stool or urine can be startling, but color change alone does not necessarily mean that an organ has been damaged. It often reflects the pigment passing through the body. Persistent discoloration should still be discussed with a clinician, especially if the product has been stopped or other symptoms are present.

A skin spill may cause temporary staining or irritation. An eye exposure can cause redness, burning, or tearing, particularly if the product contains alcohol, flavorings, or other additives.

More serious symptoms may point to a large exposure, dehydration, an allergic reaction, aspiration into the lungs, or toxicity from another ingredient. Seek emergency care now for:

Do not wait for symptoms before contacting Poison Control if a child swallowed a concentrated product, the amount is unknown, the label lists additional potentially harmful ingredients, or the exposure may have been intentional.

- Nausea or an upset stomach
- Vomiting

- Abdominal cramps
- Loose stools or diarrhea
- Green or dark discoloration of the tongue, stool, or urine
- Irritation of the mouth or throat
- Trouble breathing, wheezing, or swelling of the lips, tongue, or throat
- Collapse, a seizure, severe confusion, or difficulty waking the person
- Repeated vomiting with inability to keep fluids down
- Vomit containing blood or material that looks like coffee grounds
- Severe or worsening abdominal pain
- Signs of severe dehydration, such as fainting, very little urine, or unusual sleepiness
- Choking, coughing, or breathing problems after vomiting

Causes and risk factors

Most reported concerns involve concentrated dietary supplements rather than chlorophyll naturally present in food. Accidental exposure can occur when a child drinks a flavored liquid, eats several gummies, or mistakes tablets for candy. Adults may take repeated servings because they believe a larger amount will provide greater benefit.

Factors that can increase concern include:

Copper-containing chlorophyllin is not the same as swallowing a copper coin or a concentrated copper chemical. Approved food-coloring forms must meet composition standards. Still, Poison Control or a clinician may review the total copper content after a very large ingestion or when the product's quality is uncertain.

Dietary supplements are regulated differently from medicines. Their labels may list several active and inactive ingredients, and the actual concern may be something other than chlorophyll. Keep the original container so professionals can check the serving size, concentration, ingredient list, and manufacturer.

- Swallowing much more than the label's serving amount
- Using several supplements with overlapping ingredients
- Taking a concentrated liquid directly rather than measuring it
- Exposure involving a young child or an older adult

- An unknown product, damaged container, or incomplete label
- A product bought from an unreliable source
- Significant vomiting or diarrhea that causes fluid loss
- Existing liver or kidney disease, which may affect how some ingredients are handled
- Other medicines or supplements that could contribute to symptoms

Diagnosis

There is no routine test that confirms "chlorophyll poisoning." Diagnosis is based mainly on the exposure history and the person's symptoms.

A poison specialist or healthcare professional may ask:

Bring the container, packaging, or a clear photograph of the label to the emergency department. Do not rely only on the product's front label or marketing name.

For a small exposure in a person without symptoms, laboratory tests are often unnecessary. If symptoms are significant, clinicians may check blood pressure, heart rate, breathing, hydration, and mental alertness. Blood tests may be used to assess electrolytes, blood cell counts, kidney function, or liver function. Testing for copper or another specific ingredient is considered only when the exposure history or symptoms make it relevant.

An electrocardiogram, which records the heart's electrical activity, may be needed if the product contains ingredients that can affect heart rhythm. Chest imaging may be considered if vomiting was followed by coughing or breathing difficulty.

- What is the exact product name?
- Does it contain chlorophyll, chlorophyllin, or sodium copper chlorophyllin?
- What other ingredients are listed?
- How much may have been swallowed?
- When did the exposure happen?
- What is the person's age and approximate weight?
- Are vomiting, diarrhea, breathing problems, or behavior changes present?
- Was the exposure accidental or intentional?

Treatment and management

Treatment depends on the product, amount, symptoms, and time since exposure. Most minor exposures need observation and supportive care rather than a specific antidote.

After something has been swallowed, remove any remaining material from the mouth. Do not make the person vomit. Do not give activated charcoal, salt water, or another home remedy unless a poison specialist specifically recommends it.

Call Poison Control for instructions tailored to the exposure. A specialist may recommend watching for symptoms at home when the amount is small and the person is well. Follow the specialist's advice about food and fluids rather than forcing the person to drink.

For a skin exposure, remove contaminated clothing and rinse the skin with running water. For an eye exposure, remove contact lenses if this is easy and rinse the eye gently with room-temperature running water. Contact Poison Control if pain, redness, or vision changes continue.

Medical treatment may include:

Activated charcoal is not routinely needed for chlorophyll itself and should not be used at home. In a healthcare setting, clinicians consider it only for selected recent ingestions when another dangerous ingredient is involved and the airway can be protected.

Treatment that binds and removes metals from the body, called chelation , is not standard care for an ordinary chlorophyllin exposure. It would be considered only for confirmed or strongly suspected clinically important metal poisoning under specialist guidance.

If the exposure was intentional, emergency evaluation should include both medical care and support for the person's immediate emotional safety.

- Fluids by mouth or through a vein
- Medicine to control persistent nausea or vomiting
- Monitoring of breathing, heart rate, and blood pressure
- Correction of electrolyte problems caused by vomiting or diarrhea
- Oxygen or airway support if breathing is affected
- Treatment directed at another ingredient identified on the label

Complications

Lasting complications are not expected after most small chlorophyll or chlorophyllin exposures. Vomiting and diarrhea are the most likely problems and usually improve with supportive care.

Repeated or severe digestive symptoms can lead to dehydration and abnormal levels of body salts called electrolytes. Young children, older adults, and people who cannot replace lost fluids may become dehydrated more quickly.

Vomiting can occasionally enter the lungs, which is known as aspiration. This can cause coughing, breathing difficulty, or lung inflammation. The risk is greater when a person is very drowsy or has a seizure.

Other complications depend on what else was in the product. A supplement with a large amount of another vitamin, mineral, herb, alcohol, or medicine-like ingredient may produce a different pattern of toxicity. Contamination or inaccurate labeling can also change the risk.

Severe liver, kidney, blood, or nervous system effects would be unusual from chlorophyll alone. If these problems occur, clinicians will look for another ingredient, an unusually large exposure, a contaminant, or an unrelated medical condition.

Follow up

For routine follow-up, monitor symptoms for the period recommended by Poison Control or the treating clinician. Keep track of vomiting, diarrhea, fluid intake, urination, and any new symptoms.

Contact a healthcare professional if digestive symptoms continue, green urine or stool does not clear after the product has been stopped, or irritation from a skin or eye exposure persists. Follow-up may also be appropriate if the product is used regularly and appears to cause symptoms each time.

Seek urgent medical care if symptoms are worsening, the person cannot stay hydrated, urine output drops, or significant abdominal pain develops. Call emergency services for breathing difficulty, collapse, seizure, severe confusion, or inability to wake the person.

Before using the product again, review the full ingredient list with a pharmacist or clinician. Discuss all medicines and supplements being taken. If the container is missing, damaged, expired, or has an unclear label, avoiding further use is reasonable until the product can be identified.

Store concentrated liquids, powders, tablets, and gummies in their original child-resistant packaging. Keep them locked away from children and pets rather than on a kitchen counter or in a refrigerator door.

Sources



- National Capital Poison Center. "Chlorophyll: Is It Worth the Hype?" Poison Control.
- U.S. Food and Drug Administration. Code of Federal Regulations, Title 21, Section 73.125: Sodium Copper Chlorophyllin .
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- U.S. Health Resources and Services Administration. Poison Help: What You Can Do . National Poison Help resources.
- EFSA Panel on Food Additives and Nutrient Sources Added to Food. "Scientific Opinion on the Re-evaluation of Chlorophylls (E 140(i)) as Food Additives." EFSA Journal . 2015;13(5):4089.