CONDITION

# Candles poisoning

Learn what to do after swallowing candle wax or liquid candle fuel, inhaling fumes, or getting candle material in the eyes or on the skin.

**WHAT IT IS**
Illness from exposure to candle materials

**BODY SYSTEM**
Digestive and respiratory systems, eyes and skin

**MAIN SYMPTOMS**
Nausea, vomiting, coughing, shortness of breath

**WHAT CAUSES IT**
Toxic exposure to candle materials

**HOW IT IS DIAGNOSED**
Clinical assessment, chest X-ray, carboxyhemoglobin blood test

**MAIN TREATMENT**
Poison control guidance and supportive care

**CAN IT BE CURED?**
Sometimes - depends on product and exposure

**IS IT AN EMERGENCY?**
Sometimes - trouble breathing or severe choking

**LONG-TERM OUTLOOK**
Most ordinary wax exposures cause no serious effects

## Overview

Candle poisoning means illness caused by swallowing candle material, breathing harmful fumes, or getting candle ingredients in the eyes or on the skin. The possible effects depend on the type of candle, the ingredients, the amount involved, and how the exposure happened.

Most ordinary candle wax, including paraffin, beeswax, and vegetable-based wax, has low toxicity. A small accidental taste or bite usually causes no serious effects. It may lead to mild stomach upset or loose stools. Large pieces can be a choking hazard, especially for a young child.

Not every candle-like product is low risk. Liquid candles, oil lamps, wax warmers, fragrance oils, and some decorative products may contain hydrocarbons or concentrated scents. Hydrocarbons are oily chemicals found in fuels and solvents. If swallowed, they can enter the

lungs during coughing or vomiting and cause chemical inflammation called aspiration pneumonitis.

Burning candles can also release smoke, soot, and irritating chemicals. A normally burning candle in a ventilated room is unlikely to cause acute poisoning. Risk increases when many candles are burned in a small or poorly ventilated area, a candle smolders, or a fire produces heavy smoke. Candles also present burn and fire hazards, which require care even when poisoning is not involved.

Contact a poison control center after a concerning exposure, particularly when the product contains liquid fuel, fragrance oil, or unknown ingredients. In the United States, Poison Help is available at 1-800-222-1222. Do not wait for symptoms before calling.

## Symptoms

Symptoms vary with the product and route of exposure.

After swallowing a small amount of ordinary candle wax, a person may have no symptoms. Possible mild effects include:

A large piece of wax can become lodged in the throat. Choking may cause sudden coughing, inability to speak normally, noisy breathing, or difficulty breathing. Swallowing a very large amount may rarely contribute to an intestinal blockage. Warning signs include increasing abdominal pain, repeated vomiting, abdominal swelling, and inability to pass stool or gas.

Liquid candle fuel and lamp oil require more caution. A person may cough, choke, gag, or vomit soon after swallowing them. Breathing symptoms can develop if the liquid enters the lungs. These may include persistent coughing, chest discomfort, fast breathing, wheezing, shortness of breath, fever, or unusual sleepiness. Symptoms can sometimes appear after an initially mild exposure.

Smoke or fume exposure may cause headache, dizziness, nausea, eye irritation, throat irritation, coughing, or chest tightness. People with asthma or another lung condition may be more sensitive. Carbon monoxide exposure can cause headache, weakness, confusion, vomiting, chest pain, fainting, or loss of consciousness. Carbon monoxide is a colorless, odorless gas that can build up when fuels burn without enough ventilation.

Eye exposure may cause burning, redness, tearing, or blurred vision. Hot wax can also cause a thermal burn. Skin contact with cool wax is usually harmless, but hot wax may cause pain, redness, blistering, or deeper injury.

Call emergency services immediately for trouble breathing, severe choking, blue or gray lips, collapse, a seizure, severe confusion, inability to wake, or signs of a serious burn. Move to fresh

air if smoke or carbon monoxide exposure is possible, but do not enter an unsafe or smoke-filled area.

- Nausea, stomach discomfort, vomiting, or diarrhea
- A waxy feeling in the mouth
- Coughing or gagging if a piece was difficult to swallow
- Mild mouth irritation from fragrance or coloring ingredients

## Causes and risk factors

The most common exposure is accidental swallowing. Young children may bite a candle because its color, shape, or scent resembles food. Adults may accidentally swallow wax from birthday candles or use a product in a way the manufacturer did not intend.

The ingredients matter. Solid candle waxes generally have low toxicity. Added dyes, scents, glitter, metal decorations, or botanical materials may cause irritation or introduce other hazards. A person with a fragrance sensitivity may develop respiratory or skin symptoms even when the wax itself is not harmful.

Liquid candle fuels and lamp oils are more concerning because many contain hydrocarbons. Their slippery texture allows them to spread into the airways easily. Trying to make someone vomit increases the chance that the liquid will enter the lungs.

Risk may be higher when:

Candles should not be burned in tents, vehicles, or other enclosed spaces. Combustion in a poorly ventilated area may increase exposure to smoke and carbon monoxide. A generator, charcoal grill, or fuel-burning heater used nearby is usually a much greater carbon monoxide source and should also be considered when people in the same area develop similar symptoms.

- The exact product or ingredients are unknown
- A liquid fuel, lamp oil, essential oil, or concentrated fragrance was swallowed
- The exposed person is a young child or has difficulty swallowing
- Coughing or choking occurred during the exposure
- A large amount was swallowed
- Many candles were burned in a small, poorly ventilated space
- The person has asthma, chronic lung disease, or strong fragrance sensitivity

- The exposure involved hot wax, broken glass, or a candle-related fire

## Diagnosis

Many small wax exposures can be assessed by a poison specialist over the telephone. The specialist will usually ask for the product name, ingredient list, estimated amount, time of exposure, route of exposure, age or weight of the person, and current symptoms. Keep the container, label, or a photograph available.

A medical evaluation focuses first on breathing, alertness, heart rate, and oxygen level. The mouth and throat may be examined for irritation, burns, or a lodged object. The abdomen may be examined if there is pain, repeated vomiting, or concern about a large ingestion.

Tests are not routinely needed after a small, symptom-free exposure to ordinary wax. Testing is based on the product and symptoms. A clinician may order a chest X-ray and monitor oxygen levels when liquid fuel may have entered the lungs. Lung changes may not be visible immediately, so observation can be more useful than an early X-ray in some cases.

Blood tests may be used to check acid balance, organ function, or other possible causes of serious symptoms. If carbon monoxide exposure is suspected, a specific blood test can measure carboxyhemoglobin, which forms when carbon monoxide binds to red blood cells. A standard fingertip oxygen monitor cannot reliably rule out carbon monoxide poisoning.

## Treatment and management

For ordinary candle wax in the mouth, remove any remaining pieces if this can be done safely. An alert person who is swallowing normally can rinse the mouth. Do not put fingers blindly into the mouth of someone who is choking.

Do not induce vomiting after swallowing candle wax, liquid fuel, lamp oil, or fragrance oil. Do not give syrup of ipecac. Vomiting can cause oily liquids to enter the lungs. Do not give food, drinks, or activated charcoal unless a poison specialist or healthcare professional recommends it for the specific product.

Call a poison control center for individualized guidance. The product label is important because treatment for solid wax may differ from treatment for hydrocarbon fuel or concentrated fragrance ingredients.

If fumes or smoke were inhaled, move into fresh air without placing yourself in danger. Stop using the product and ventilate the area. Anyone with ongoing coughing, wheezing, chest pain, confusion, or shortness of breath needs prompt medical assessment.

For material in the eye, remove contact lenses when easy to do and rinse the eye with room-temperature running water. Poison control can advise how long to continue rinsing and whether an eye examination is needed. Persistent pain, vision changes, marked redness, or exposure to hot wax requires medical care.

For wax on the skin, cool hot wax and the affected skin under cool running water. Do not use ice, butter, or oils on a burn, and do not pull hardened wax from blistered or damaged skin. A clinician may need to remove it safely. Large, deep, blistering, or very painful burns should be evaluated.

Hospital treatment depends on the effects of the exposure. It may include oxygen, breathing support, medicines for wheezing, intravenous fluids, burn care, or observation for developing lung symptoms. Antibiotics like amoxicillin or doxycycline are not routinely used for chemical lung irritation unless there is evidence of a bacterial infection.

## Complications

Serious complications from swallowing ordinary candle wax are uncommon. When they occur, they are more often related to choking, a large amount of wax, or another ingredient rather than to the wax itself.

Aspiration pneumonitis is the main concern after swallowing hydrocarbon-based liquid candle fuel. The chemical irritates lung tissue and may cause low oxygen levels or respiratory distress. Coughing, fast breathing, fever, and shortness of breath can develop over several hours.

A large swallowed piece may block the airway. Very large amounts of wax may rarely form a mass in the digestive tract and contribute to bowel obstruction.

Smoke inhalation can worsen asthma and other respiratory conditions. Significant fire smoke or carbon monoxide exposure may affect the brain, heart, and other organs because the body receives less usable oxygen.

Hot wax and open flames can cause skin or eye burns. Candle-related fires may produce injuries and toxic smoke that are more dangerous than the candle ingredients themselves.

## Follow up

A person who remains well after a small taste of ordinary wax may only need home observation after consultation with poison control. Follow the specialist's instructions about food, fluids, and how long to watch for symptoms.

Arrange routine medical follow-up if mild stomach symptoms continue, a skin reaction does not improve, or candle fragrances repeatedly trigger headaches, coughing, or asthma symptoms. A clinician can help identify practical ways to reduce future exposure.

Seek prompt medical care if coughing begins after swallowing liquid candle fuel, even if the person initially appeared well. Also seek care for repeated vomiting, increasing abdominal pain, fever, wheezing, unusual drowsiness, persistent eye pain, vision changes, or a worsening burn.

Call emergency services for severe breathing difficulty, choking with inability to speak or cough effectively, blue or gray skin, fainting, seizure, severe confusion, or inability to wake. If several people in the same space develop headache, dizziness, nausea, or confusion, leave the area and treat possible carbon monoxide exposure as an emergency.

To prevent another exposure, store candles, fuel refills, fragrance oils, and wax melts in their original containers and out of children's reach. Never transfer lamp oil into a drink bottle or food container. Use candles on stable, heat-resistant surfaces, keep them away from anything that can burn, and extinguish them before leaving the room or going to sleep.

## Sources

- U.S. National Library of Medicine. "Candle Poisoning." MedlinePlus Medical Encyclopedia . National Institutes of Health.
- America's Poison Centers. "First Aid." Poison Help . Guidance for swallowed poisons, inhaled poisons, and eye or skin exposures.
- Centers for Disease Control and Prevention. "About Carbon Monoxide Poisoning." National Center for Environmental Health.
- Royal Children's Hospital Melbourne. "Clinical Practice Guidelines: Hydrocarbon Poisoning." Clinical guideline for assessment and management of hydrocarbon exposure.
- Merck Manual Professional Edition. "Hydrocarbon Poisoning." Injuries and Poisoning .
- U.S. Consumer Product Safety Commission. "Candles and Candle Holders." Consumer fire-safety guidance.