CONDITION

# Hair straightener poisoning

Hair straightener poisoning is harmful exposure to chemicals in hair-relaxing or smoothing products.

**WHAT IT IS**
Harmful exposure to chemical hair-straightening products

**BODY SYSTEM**
Skin, eyes, breathing, and digestive systems

**MAIN SYMPTOMS**
Burning pain, vomiting, coughing, eye irritation

**WHAT CAUSES IT**
Swallowing, inhaling, or contacting straightening chemicals

**HOW IT IS DIAGNOSED**
Exposure history, examination, endoscopy or imaging when needed

**MAIN TREATMENT**
Decontamination, supportive care, and treatment of chemical burns

**CAN IT BE CURED?**
Sometimes - many exposures resolve; deep burns may persist

**IS IT AN EMERGENCY?**
Sometimes - breathing trouble or caustic swallowing

**LONG-TERM OUTLOOK**
Usually full recovery; deep burns can cause lasting damage

## Overview

Hair straightener poisoning means being harmed by chemicals in a hair-relaxing or smoothing product. It can happen after swallowing the product, breathing its fumes, or getting it in the eyes or on the skin.

This article concerns chemical products, not burns from a heated flat iron. A hot styling tool causes a thermal burn rather than poisoning.

Hair straightening products do not all contain the same ingredients. Some relaxers contain strongly alkaline chemicals, such as sodium hydroxide or related substances. These chemicals can cause corrosive burns, meaning they damage tissue on contact. Products described as "no-lye" can also cause chemical burns.

Other products may contain thioglycolates. Some smoothing treatments contain formaldehyde or release formaldehyde gas when heated. These substances may irritate the eyes, skin, nose, throat, and lungs.

A brief skin exposure may cause only local irritation. Swallowing a corrosive relaxer can seriously injure the mouth, food pipe, stomach, or airway. The product name, ingredients, amount, route of exposure, and symptoms all affect the risk.

## Symptoms

Symptoms may begin immediately, but some injuries become clearer over several hours. The absence of visible burns around the mouth does not rule out internal injury after swallowing a product.

After swallowing hair straightener, symptoms may include:

Eye exposure can cause severe stinging, redness, watering, swelling, blurred vision, or difficulty opening the eye. A significant chemical burn can damage the clear front surface of the eye, called the cornea.

Skin exposure may cause redness, pain, blistering, peeling, or an open chemical burn. The scalp, ears, hairline, and neck can be affected during product use.

Breathing fumes may cause burning eyes, headache, coughing, chest tightness, wheezing, nausea, or shortness of breath. People with asthma or another lung condition may react more strongly. Repeated exposure can make some people increasingly sensitive to a chemical.

- Burning pain in the mouth, throat, chest, or abdomen
- Drooling or difficulty swallowing
- Nausea, vomiting, or vomiting blood
- Hoarseness, coughing, wheezing, or noisy breathing
- Swelling of the lips, tongue, or throat

## Causes and risk factors

Poisoning usually results from accidental swallowing, a spill, incorrect use, or breathing fumes during treatment. Young children may drink a product left within reach. Adults can be exposed while applying it at home or working in a salon.

Strong alkaline relaxers cause injury by breaking down tissue. The seriousness of a burn is

affected by the chemical's strength, concentration, amount, and contact time. A product can remain trapped under clothing, gloves, jewellery, or hair and continue damaging the skin.

Heating certain smoothing products may release formaldehyde into the air. Exposure is more likely in a poorly ventilated room or where treatments are used frequently. A product labelled "formaldehyde-free" may still contain chemicals that release formaldehyde when heated.

Factors that may increase the chance of harm include:

Normal use does not always prevent irritation. Stop using a product if it causes significant burning, breathing symptoms, or eye pain.

- Leaving the product on longer than directed
- Applying it to broken, irritated, or recently scratched skin
- Mixing products or transferring them into food or drink containers
- Working without suitable ventilation or protective equipment
- Having asthma, sensitive airways, eczema, or previous chemical reactions

## Diagnosis

Diagnosis begins with finding out what happened. Useful details include the product name, ingredient list, time of exposure, estimated amount, and whether it was swallowed, inhaled, or spilled. Keep the container or take a clear photograph of its label if this can be done safely.

A medical examination checks the mouth, throat, eyes, skin, breathing, circulation, and abdomen. Oxygen levels and heart rate may be monitored. Blood tests can help assess the effects of a serious exposure, although no single blood test confirms every type of hair straightener poisoning.

After swallowing a corrosive product, an endoscopy may be needed. During this procedure, a flexible camera is passed into the food pipe and stomach to look for burns. It is performed in a medical setting after the airway and overall condition have been assessed.

Chest or abdominal imaging may be used if there are signs of deep injury, inhalation into the lungs, or a hole in the food pipe or stomach. Eye exposure may be assessed using eye pH testing and a detailed examination of the cornea.

Not everyone needs all these tests. Minor external exposure that improves fully after rinsing may require observation and advice rather than invasive testing.

## Treatment and management

There is no single antidote for hair straightener poisoning. Treatment focuses on removing the chemical, supporting breathing and circulation, relieving symptoms, and managing any burns.

For fresh skin exposure, contaminated clothing and jewellery should be removed while avoiding further contact. The skin is generally rinsed with plenty of room-temperature running water. Eye exposure also requires immediate, continuous rinsing. Contact lenses should be removed if they come out easily.

Someone who has breathed fumes should move into fresh air without entering an unsafe area. Persistent coughing, wheezing, chest tightness, or shortness of breath needs prompt medical assessment.

Do not make someone vomit after swallowing a hair straightener. Vomiting brings a corrosive substance back through the throat and can cause more damage. Do not try to neutralise an alkaline product with vinegar, lemon juice, or another acid. The reaction can produce heat and worsen the burn. Do not give food, drink, or activated charcoal unless a poison specialist or medical professional specifically advises it.

Hospital treatment may include oxygen, airway support, intravenous fluids, pain relief, medicines for wheezing, and care from eye, burn, digestive, or surgical specialists. A breathing tube may be needed if throat swelling threatens the airway.

Severe internal burns can require intensive monitoring. Surgery may be necessary if damaged tissue develops a hole or begins to die. Treatment is based on the injury found rather than the product label alone.

## Complications

Most small external exposures do not cause lasting problems when the chemical is removed quickly. Deeper burns can have important complications.

A burn to the food pipe can heal with scar tissue that narrows the passage. This is called an oesophageal stricture. It may cause food to stick, painful swallowing, regurgitation, or weight loss weeks or months after the exposure. Treatment may involve procedures to widen the narrowed area.

A deep corrosive injury can rarely make a hole in the food pipe, stomach, or bowel. This allows contents to leak into nearby tissues and can cause serious inflammation or infection.

Other possible complications include:

Repeated workplace exposure to formaldehyde can contribute to ongoing irritation and

asthma-like symptoms. Formaldehyde is also recognised as a human carcinogen. Workplace controls are important because risk is related to the level and pattern of exposure.

- Scarring or changes in skin colour
- Corneal damage and reduced vision
- Lung irritation after fumes or vomit enter the airway
- Ongoing wheezing or increased sensitivity to fumes
- Infection or delayed healing of a chemical burn

## Prevention

Most hair straightener poisoning is preventable, although no method removes every risk.

Read the label and follow its instructions, including warnings about ventilation, gloves, application time, and product mixing. Do not use a product if the label is missing or its contents are uncertain.

Store straightening products in their original containers, closed and out of children's sight and reach. Never put them into a cup, bottle, or food container. Clean spills promptly while following the label's safety directions.

Avoid applying relaxer to broken or inflamed skin. Protect the eyes and rinse the product away immediately if significant burning begins. Do not assume that "natural," "organic," or "no-lye" means a product cannot cause injury.

Salons need effective ventilation and suitable workplace controls. Workers should be able to review product safety information and use protective equipment appropriate to the task. Heating a smoothing product in a closed room can increase inhalation exposure.

In the United States, save Poison Control's number, 1-800-222-1222. Other countries have their own poison information services.

## Living with it and what to expect

The course depends mainly on the chemical, route of exposure, and depth of injury. Mild eye, skin, or airway irritation may improve over hours or days after the chemical is removed. Superficial burns may take longer to heal but often do so without permanent damage.

A serious swallowed exposure may require hospital observation, endoscopy, or surgery. Pain and swallowing problems can continue while injured tissue heals. Follow-up may involve

digestive, nutrition, burn, eye, or lung specialists.

A person who develops an oesophageal stricture may need repeated procedures over months. New difficulty swallowing, food sticking, or unexplained weight loss after a corrosive exposure should not be treated as routine indigestion.

After an inhalation reaction, avoiding the same product may be advised, especially if it repeatedly causes wheezing or chest tightness. Occupational health assessment can help salon workers reduce continuing exposure.

Routine follow-up is important for a diagnosed internal burn, eye injury, deep skin burn, or continuing breathing symptoms. Many people recover fully from limited exposures, but deep chemical burns can leave scars or lasting changes in swallowing, vision, skin, or lung sensitivity.

## When to get medical help

Call emergency services now if the exposed person:

Swallowing a hair straightener or relaxer needs immediate advice from a poison centre or emergency service, even if symptoms are mild. Do not wait for pain or vomiting to develop.

For an eye or skin exposure, begin rinsing immediately and contact a poison centre for instructions specific to the product. Urgent assessment is needed if pain, redness, blistering, blurred vision, coughing, or breathing symptoms continue after rinsing or fresh air.

Arrange routine follow-up after emergency care if swallowing remains painful, food begins sticking, a burn is not healing, or cough and wheezing keep returning. These symptoms can reflect a complication that needs assessment but are not always an emergency.

- Has trouble breathing, severe wheezing, or noisy breathing
- Collapses, has a seizure, or cannot be awakened
- Has rapidly increasing swelling of the mouth, tongue, or throat
- Vomits blood or has severe chest or abdominal pain
- Has signs of a serious eye injury or sudden loss of vision

## Common questions

What should I do if I swallowed hair relaxer?

Do not induce vomiting or try to neutralise it. Contact a poison centre or emergency service immediately. Keep the container available so its ingredients can be identified. Emergency care

is needed for breathing difficulty, drooling, severe pain, repeated vomiting, or reduced alertness.

Can hair straightener poisoning be fatal?

Severe corrosive ingestion or major airway injury can be life-threatening, but limited exposures are often less serious. The risk cannot be judged safely from the amount alone because products differ in strength and ingredients.

What if hair straightener gets in my eye?

Start rinsing the eye at once with plenty of room-temperature running water. Remove contact lenses if they come out easily, and do not rub the eye. Contact a poison centre. Ongoing pain, blurred vision, swelling, or difficulty opening the eye needs urgent assessment.

Can symptoms appear later?

Yes. Irritation often starts quickly, but throat swelling, lung symptoms, internal tissue injury, and swallowing problems may develop later. Scar-related narrowing of the food pipe can appear weeks or months after a serious ingestion.

Is a no-lye relaxer safe if swallowed?

No. "No-lye" does not mean non-corrosive or safe to swallow. These products may contain other alkaline chemicals capable of burning the mouth, food pipe, eyes, or skin.

Is this the same as being burned by a flat iron?

No. A flat iron causes a heat burn. Hair straightener poisoning involves chemical products used to relax or smooth hair. Both can need medical care if the injury is deep, affects the eyes, or covers a large area.

## Sources


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