CONDITION

Canker sores

Learn how to recognize a canker sore, what may trigger it, how symptoms are treated, and when a mouth ulcer needs medical or dental care.

WHAT IT IS
Painful shallow ulcer inside the mouth

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Mouth pain, tingling, shallow ulcer, tenderness with food

WHAT CAUSES IT
Unknown, likely immune reaction

HOW IT IS DIAGNOSED
Symptoms and mouth examination

MAIN TREATMENT
Pain relief and protective mouth care

CAN IT BE CURED?
Yes, most heal without treatment

IS IT AN EMERGENCY?
Sometimes, with trouble breathing or swallowing

LONG-TERM OUTLOOK
Most heal completely, though some recur

Overview

A canker sore is a painful, shallow ulcer inside the mouth. The medical name is an aphthous ulcer . Canker sores most often develop on the inner lips or cheeks, under the tongue, at the base of the gums, or on the soft part of the roof of the mouth.

A typical sore is round or oval. It has a white, yellow, or gray center with a red border. Most are small and heal without scarring within one to two weeks. Some people have only one episode, while others develop sores repeatedly. Repeated episodes are called recurrent aphthous stomatitis .

Canker sores are not contagious. They are different from cold sores, which are caused by herpes simplex virus. Cold sores usually form fluid-filled blisters on or around the lips and can spread to other people. A canker sore occurs inside the mouth and is not caused by herpes.

Although canker sores are usually harmless, pain can interfere with eating, drinking, speaking, brushing, and sleeping. A sore that does not heal, is unusually large, or occurs with other symptoms may need an examination. Not every mouth ulcer is a canker sore, and persistent ulcers can have other causes.

Symptoms

Pain or tingling may begin several hours before the ulcer becomes visible. The sore may then become especially tender when touched by food, a toothbrush, or the tongue. Acidic, salty, spicy, or rough foods often make the pain worse.

Canker sores can appear in several patterns:

A typical canker sore does not produce blisters on the skin outside the mouth. It also does not usually cause a high fever, spreading facial swelling, or pus.

Seek routine medical or dental care if an ulcer:

Arrange prompt care if you have a weakened immune system and develop new or worsening mouth ulcers, fever, or signs of infection.

A mouth ulcer is rarely an emergency. Seek emergency help for trouble breathing, severe swelling of the mouth or neck, inability to swallow liquids, or signs of serious dehydration, such as confusion, fainting, or very little urination.

- Minor sores are small, shallow ulcers. They are the most common type and usually heal within one to two weeks without scarring.
- Major sores are larger and deeper. They may be very painful, can take several weeks to heal, and may leave a scar.
- Herpetiform sores are clusters of many tiny ulcers that may join together. Despite the name, they are not caused by herpes.
- Lasts longer than about two weeks
- Is larger, deeper, or more painful than usual
- Returns frequently or appears in large numbers
- Makes it difficult to eat, drink, or brush your teeth
- Began after starting a medicine
- Occurs with weight loss, ongoing diarrhea, genital ulcers, eye inflammation, joint symptoms, or skin changes

Causes and risk factors

The exact cause of common canker sores is not fully understood. They appear to involve an immune reaction that damages a small area of the mouth lining. They are not caused by poor hygiene, and they cannot be spread by kissing or sharing food.

Several factors may trigger an episode in a person who is prone to canker sores. These include a minor injury from biting the cheek, dental work, braces, a sharp tooth, or vigorous brushing. Emotional stress, poor sleep, and hormonal changes may also be linked to episodes.

Certain foods can irritate an existing ulcer. Acidic foods, such as citrus fruit and tomatoes, are common examples. Food irritation does not necessarily mean that a person has a food allergy.

Some people report fewer sores when they avoid toothpaste containing sodium lauryl sulfate, a foaming ingredient. Evidence about this approach is mixed, but trying a milder toothpaste may be reasonable if sores repeatedly follow brushing irritation.

Nutritional deficiencies can sometimes contribute to recurrent ulcers. These may include low iron, vitamin B12, folate, or zinc. Taking supplements without testing is not always helpful and can have unwanted effects, so suspected deficiencies should be discussed with a clinician.

Frequent or severe mouth ulcers can occasionally be associated with another condition. Examples include celiac disease, inflammatory bowel disease, Behçet disease, certain blood disorders, or conditions that affect the immune system. Some medicines can also cause mouth ulcers or ulcer-like reactions.

Most people with an occasional canker sore do not have an underlying disease. Further evaluation becomes more important when sores begin suddenly in adulthood, are severe or continuous, or occur with symptoms elsewhere in the body.

Diagnosis

A doctor or dentist can usually identify a typical canker sore by asking about the symptoms and examining the mouth. There is no single test that confirms an ordinary aphthous ulcer.

The clinician may ask when the sore appeared, whether it has happened before, and how long previous ulcers took to heal. They may also review recent injuries, dental appliances, diet, medicines, digestive symptoms, skin changes, genital sores, eye symptoms, and family history.

The examination helps distinguish a canker sore from other problems, including a traumatic ulcer, cold sore, oral yeast infection, medicine reaction, or an ulcer related to another illness. Location is useful: canker sores usually affect the softer, movable lining inside the mouth, while recurrent herpes often affects the firmer tissue of the hard palate or attached gums.

Blood tests are not routinely needed for a single, typical sore. For frequent, severe, or slow-healing ulcers, testing may look for anemia, inflammation, or deficiencies of iron, vitamin B12, or folate. Other tests may be considered when symptoms suggest celiac disease, inflammatory bowel disease, an immune problem, or another specific condition.

A clinician may recommend a biopsy if an ulcer has an unusual appearance or does not heal. During a biopsy, a small tissue sample is removed and examined under a microscope. This does not mean cancer is expected; it is a way to determine the cause of a persistent or unexplained lesion.

Treatment and management

Most minor canker sores heal on their own. Treatment focuses on reducing pain, protecting the ulcer, and helping the person continue to eat and drink comfortably.

Gentle mouth care can limit irritation. Use a soft-bristled toothbrush and brush carefully around the sore. A mild salt-water or baking soda rinse may soothe the area. The rinse should be spat out rather than swallowed.

Choose soft, bland foods while the ulcer is painful. Cool drinks, yogurt, eggs, oatmeal, soups that are not too hot, and soft cooked foods may be easier to tolerate. Avoid foods that repeatedly sting the sore, especially spicy, acidic, salty, sharp, or crunchy items. Drinking through a straw may help in some locations, although it can irritate sores in others.

Over-the-counter barrier pastes or protective patches can cover the ulcer and reduce friction. Topical numbing products may provide brief relief. Use these only as directed on the label, particularly for children. Do not place aspirin directly on a sore because it can burn the mouth lining.

A clinician may prescribe a topical corticosteroid for painful, recurrent, or larger sores. These medicines reduce local inflammation and often work best when started early. They may come as a dental paste, gel, or mouth rinse. Treatment choice depends on the ulcer's location, severity, and the patient's age and health.

Other prescription rinses or medicines may be considered for severe disease. Medicines that affect the whole body are generally reserved for major, frequent, or disabling ulcers and require medical supervision because they can cause important side effects.

Antibiotics like amoxicillin or doxycycline do not treat a routine canker sore. Antiviral medicines used for herpes also do not treat aphthous ulcers.

If testing identifies a nutritional deficiency or another medical condition, treating that problem may reduce future episodes. Supplements should target a confirmed or strongly suspected

need rather than replace a balanced diet or medical evaluation.

Keeping a brief record of episodes may help identify patterns. Note when sores occur, how long they last, recent mouth injuries, new medicines, stress, menstrual changes, and foods or products that seem to irritate the mouth. Avoiding every suspected food without guidance can lead to an unnecessarily restricted diet.

Complications

Most canker sores heal completely and do not cause lasting harm. Minor sores usually do not scar.

Pain may lead to reduced eating or drinking. This is more concerning in young children, older adults, and anyone who is already medically frail. Dehydration can develop if pain prevents adequate fluid intake.

Major ulcers can heal slowly and may leave scars. Repeated severe ulcers can affect nutrition, sleep, school, work, and quality of life.

A secondary bacterial infection is uncommon, but worsening redness, swelling, pus, fever, or increasing pain should be assessed. More often, an ulcer that fails to heal has been repeatedly irritated or has a cause other than a routine canker sore.

The main concern with a persistent mouth ulcer is not a complication of canker sores themselves. Rather, it may have been mistaken for a canker sore. Oral cancer can sometimes appear as a nonhealing ulcer, especially when accompanied by a lump, firm area, unexplained bleeding, numbness, or trouble swallowing. These findings need timely medical or dental evaluation, but they do not automatically mean cancer is present.

Follow up

No follow-up is usually needed for a small sore that heals within one to two weeks and does not keep returning.

Schedule a routine appointment with a dentist or healthcare professional if sores recur often, interfere with daily activities, or seem linked to a sharp tooth, braces, dentures, or another dental problem. A dental professional may be able to smooth a rough surface or adjust an appliance.

An ulcer that remains present after about two weeks should be examined, even if it is not very painful. Seek earlier care for a rapidly enlarging ulcer, multiple severe ulcers, fever, weight loss,

or symptoms involving the eyes, skin, joints, digestive tract, or genital area.

People receiving chemotherapy, immune-suppressing treatment, or care for a condition that weakens immunity should contact their treatment team for guidance about new mouth sores. Their evaluation and infection risk may differ from those of otherwise healthy people.

Sources

- National Institute of Dental and Craniofacial Research. Oral Health in America: Advances and Challenges . Bethesda, MD: National Institutes of Health; 2021.
- American Academy of Oral Medicine. Canker Sores . Patient Information Committee.
- Akintoye SO, Greenberg MS. Recurrent aphthous stomatitis. Dental Clinics of North America . 2014;58(2):281-297. doi:10.1016/j.cden.2013.12.002.
- Edgar NR, Saleh D, Miller RA. Recurrent aphthous stomatitis: A review. Journal of Clinical and Aesthetic Dermatology . 2017;10(3):26-36.
- Merck Manual Professional Edition. Recurrent Aphthous Stomatitis . Merck & Co., Inc.
- National Health Service. Mouth ulcers . NHS health information.