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Canker Sores (Aphthous Ulcers)

Medical Author:

[Siamak T. Nabili, MD, MPH](#)

Medical Editor:

[William C. Shiel Jr., MD, FACP, FACR](#)



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Canker sores facts

- Canker sores are small ulcer craters in the lining of the mouth.
- The sores are usually found on the movable parts of the mouth.
- The ulcers can be caused by a number of conditions.
- The treatment of canker sores depends on the cause.

What are canker sores?

Canker sores are small ulcer craters in the lining of the mouth that are frequently painful and sensitive. Canker sores are very common. About 20% of the population (one out of five people) have canker sores at any one time. Canker sores are also medically known as aphthous ulcers or aphthous stomatitis.

Women are slightly more likely than men to have recurrent canker sores. It can occur at any age, but it is more commonly seen in teenagers. Genetic studies show that susceptibility to recurrent outbreaks of the sores is inherited in some patients. This partially explains why family members often share the condition.

Canker sores are generally classified into three groups based on size.

1. **Minor sores** have a diameter of 1 millimeter (mm) to 10mm. They are the most common (80% of all canker sores) and usually last about 7-10 days.
2. **Major sores** (10% of all canker sores) have a diameter of greater than 10mm and they may take anywhere between 10-30 days to heal. They may leave a scar after they heal.
3. **Herpetiform ulcers** (10% of all canker sores) are formed by a cluster of multiple small individual sores (less than 3mm). They also usually heal within 7-10 days.



What are symptoms of canker sores?

Canker sores are usually found on the movable parts of the mouth, such as the tongue or the inside lining of the lips and cheeks, and at the base of the gums. The ulcers begin as small oval or round reddish swellings that usually burst within a day. The ruptured sores are covered by a thin white or yellow membrane and edged by a red halo. Generally, the sores heal within two weeks without scarring. [Fever](#) is rare, and the sores are rarely associated with other diseases. Usually, a person has only one or a few canker sores at a time.

Most people experience their first bout with canker sores between the ages of 10 and 20. Children as young as 2 years old, however, can develop the condition. The frequency of canker sore recurrences varies considerably. Some people have only one or two episodes a year, while others may have a continuous series of canker sores.

What are the causes of canker sores?

The cause of canker sores is not well understood. More than one cause is likely, even for individual patients. Canker sores do not appear to be caused by viruses or bacteria, although an [allergy](#) to a type of bacterium commonly found in the mouth may trigger them in some people. The sores may be an allergic reaction to certain foods. In addition, there is research suggesting that canker sores may be caused by a faulty immune system that uses the body's defenses against disease to attack and destroy the normal cells of the mouth or tongue.

British studies show that in about 20 percent of patients, canker sores are due partly to nutritional deficiencies, especially lack of [vitamin B12](#), [folic acid](#), and [iron](#). Similar studies performed in the United States, however, have not confirmed this finding. In a small percentage of patients, canker sores occur along with gastrointestinal problems, such as an inability to digest certain cereals. In these patients, canker sores appear to be part of a generalized disorder of the digestive tract. [Vitamin C](#) deficiency has also been associated with canker sores.

[Emotional stress](#) and local trauma or injury to the mouth, such as sharp metal braces, brushing with hard toothbrushes, and hot foods can lead to canker sores. [Smoking](#) and [dentures](#) can also contribute to the problem. Some studies have shown a connection with [toothpaste](#) containing sodium lauryl sulfate in some individuals, although, other studies have not found any connection.

Other possible causes of canker sores include illnesses in which the immune system causes swelling or inflammation of the body tissues (autoimmune disorders). Examples of autoimmune disorders are systemic [lupus erythematosus](#), [Crohn's disease](#), and [Behçet's disease](#).

Female sex hormones also apparently play a role in causing canker sores. Many women experience bouts of the sores only during certain phases of their menstrual cycles. Additionally, most women experience improvement or remission of their canker sores during [pregnancy](#). Researchers have used [hormone therapy](#) successfully in clinical studies to treat some women.

Are canker sores the same thing as fever blisters?

The simple answer is no. Canker sores are generally inside the mouth or the oral cavity and are not contagious. However, fever blisters mostly occur on the lips and outside of the mouth and are very contagious. Fever blisters, or [cold sores](#), are infections caused by the herpes simplex virus (HSV).

What steps can be taken to help canker sores?

If you have canker sores:

- Avoid abrasive foods such as potato chips that can stick in the cheek or gum and aggravate the sores.
- Take care when brushing your teeth not to stab the gums or cheek with a toothbrush bristle.
- Avoid acidic and spicy foods.
- Canker sores are not contagious, so patients do not have to worry about spreading them to other people.
- A toothpaste free of sodium lauryl sulfate and other ingredients that are irritating to the tissues inside the mouth can be helpful in some patients, as can a toothpaste that inhibits the growth of irritating plaque. Therefore, something as simple as changing toothpastes may help with recurrent canker sores.

What is the treatment for canker sores?

Canker sores typically resolve without any specific treatment. But measures can be taken to alleviate the pain and discomfort and to hasten the course. Therapies include topical medications (applied directly on), mouthwashes, and oral medications.

What kind of topical medications (gels or ointments) are available for canker sores?

Topical medications include numbing ointments, such as benzocaine (Oragel), which are available in drug stores without a prescription. The ointment should be applied a few times daily directly to the sore in order to

reduce irritation from eating, drinking, or brushing. Topical 2% lidocaine (an anesthetic) gel has also been used effectively in some patients, but it may be associated with some toxicity, especially in children. In very painful cases, injection of local anesthetics may help relieve the symptoms effectively, but it is usually temporary. However, in April 2011 the U.S. FDA issued a warning about an association between benzocaine and methemoglobinemia, a rare but serious condition in which oxygen delivery to tissues is compromised. Because of this association, the FDA has stated that benzocaine products should not be used on children less than two years of age, except under the advice and supervision of a healthcare professional. Further, adults who use benzocaine gels or liquids to relieve pain in the mouth should follow the recommendations in the product label. Benzocaine products should be stored out of reach of children, and FDA encourages consumers to talk to their healthcare professional about using benzocaine.

Anti-inflammatory (steroid) gels may also be applied locally to reduce the inflammation. These products are generally provided by prescription from a physician or a dentist. The main ingredient in these medications is usually fluocinonide (Lidex) or triamcinolone. Topical antibiotics (for example, [tetracycline](#) (Achromycin)) may also be recommended by your doctor.

Can mouthwash solutions be used to treat canker sores?

Yes, there are several mouthwash solutions you can use. One type of mouthwash used for canker sores is [diphenhydramine suspension](#) (Benadryl Allergy liquid and others). This liquid medication can be used as a mouth rinse in adults to provide temporary relief from the pain caused by canker sores. Patients should not swallow the diphenhydramine, but simply use it as a mouth rinse. This is generally available over the counter.

Furthermore, steroid anti-inflammatory mouth rinses can be prescribed for patients with severe sores. Steroid mouth rinses have been shown to reduce the inflammation and number of recurrences and are reserved for more severe cases due to potential side effects. These potent drugs can cause many undesirable side effects, and should be used only under the close supervision of a dentist or physician.

There are also mouth rinses containing the antibiotic tetracycline that may reduce the unpleasant symptoms of canker sores and speed healing by preventing bacterial infections in the sores. Clinical studies at the National Institute of Dental Research have shown that rinsing the mouth with tetracycline several times a day usually relieves pain in 24 hours and allows complete healing in five to seven days. The U.S. Food and Drug Administration warns, however, that tetracycline given to pregnant women and young children can permanently stain the children's teeth.

Both steroid and tetracycline treatments require a prescription and care of a dentist or physician.

What oral medications are available to help canker sores?

Oral pain medications such as, [ibuprofen](#) (Advil) or [acetaminophen](#) (Tylenol) may be taken for pain relief if the sores are intolerable. Some patients may get relief from sucking on zinc lozenges, or taking vitamin B and C complex.

There is no evidence that antibiotics taken orally are helpful. If the canker sores are caused by a [yeast infection](#), a topical anti-fungal medication can be used, [for example, [nystatin](#) (Mycostatin, Nystatin)]. Some people with AIDS ([HIV infection](#)) who have repeated bouts of canker sores respond well to [thalidomide](#) (Thalomid oral). This medication can also be used for severe canker sores not related to AIDS. Thalidomide is associated with very severe [birth defect](#) and, therefore, its use is very limited.

Patients with severe recurrent and non-healing canker sores may also need to take steroid or other immunosuppressant drugs orally. But they are associated with major side effects if taken long term and their use should be closely monitored by the prescribing doctor.

In other situations, if the presumed cause is another illness, such as lupus, treating the underlying illness often results in healing the ulcers. [Vitamins and other nutritional supplements](#) often prevent recurrences or reduce the severity of canker sores in patients with a nutritional deficiency. L-lysine over-the-counter is used

as a preventative treatment. Patients with food allergies can reduce the frequency of canker sores by avoiding those foods.

What should I do if I get canker sores frequently?

Contact your healthcare professional. Most cases of canker sores do not reflect an underlying illness. However, if you are having canker sores frequently, your healthcare professional can take a patient history and order tests to assure you there isn't a serious underlying cause. Certain diseases are sometimes associated with recurrent canker sores. Examples include Crohn's disease, [celiac disease](#), Behçet's disease, lupus, or even AIDS. It should be mentioned that these are complex diseases and canker sores may be only a part of the disease and not the only feature of the disease. Canker sores also may not be present at all in some persons with these conditions.

Most doctors also recommend that patients who have frequent bouts of canker sores undergo blood and allergy tests to determine if their sores are caused by a nutritional deficiency, an allergy, or some other preventable cause.

What research is being done in the area of canker sores?

Researchers are trying to identify the malfunctions in patients' immune systems that make them susceptible to repeated bouts of canker sores. By analyzing the blood of people with and without canker sores, scientists have found several differences in the immune function between the two groups. Whether these differences cause canker sores is not yet known and more research may need to be performed.

Researchers also are developing and testing new drugs designed to treat repeated canker sores in patients with possible immune causes of canker sores. Most of these drugs alter the patient's immune function. Although some of the drugs appear to be effective in treating canker sores in some patients, the data are still inconclusive. Until these drugs are proven to be absolutely safe and effective, they will not be available for general use.

One of the new medications which has been tested is called [amlexanox](#) (Aphthasol topical paste). This is an anti-inflammatory and an anti-allergic drug. It has shown some promise in treatment of symptoms and healing of canker sores.

More invasive treatment options for canker sores are being investigated, but for now they remain somewhat limited, controversial, and impractical. These options include laser therapy, low intensity [ultrasound](#), silver nitrate, and surgical removal. More studies are necessary before these options can be recommended for treatment of canker sores.

REFERENCE: Medscape Reference.com. Aphthous Stomatitis.

Previous contributing author Dennis Lee, MD

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