

Stomatitis



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inflammation. Secondary infection occasionally occurs, especially in immunocompromised patients. Some conditions are recurrent.

Etiology

Stomatitis may be caused by local infection, systemic disease, a physical or chemical irritant, or an allergic reaction; many cases are idiopathic. Because the normal flow of saliva protects the mucosa against many insults, xerostomia predisposes the mouth to stomatitis of any cause.

The **most common specific causes** overall include

Table 2

Some Causes of Stomatitis

Category	Examples
Bacterial infections	Actinomycosis * Acute necrotizing ulcerative gingivitis Gonorrhea Syphilis , primary or secondary TB *
Fungal infections	Blastomycosis * Candidal infections (most common) Coccidioidomycosis * Cryptococcosis * Mucormycosis * (more common in diabetics)
Systemic disorders	condyloma acuminata ; influenza; rubeola) Behçet's syndrome Celiac sprue Cyclic neutropenia Erythema multiforme Inflammatory bowel disease Iron deficiency Kawasaki disease Leukemia Pemphigoid, pemphigus vulgaris

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Platelet disorders
Stevens-Johnson syndrome
Thrombotic thrombocytopenic purpura
Vitamin B deficiency (pellagra)
Vitamin C deficiency (scurvy)

Drugs

Antibiotics*
Anticonvulsants*
Barbiturates*
Chemotherapy drugs
Gold
Iodides*

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heavy metals, or metal or mineral dusts
Tobacco (**nicotinic stomatitis**, particularly pipe
smoker's palate [**hyperkeratotic** palate with red
dots at the openings of minor salivary glands])
Type IV hypersensitivity reaction (eg, to
ingredients in toothpaste, mouthwash, candy,
gum, dyes, or lipstick)
Aspirin

, when applied topically

Other Burning mouth syndrome
 Lichen planus
 Recurrent aphthous stomatitis (most commonly,
 minor aphthae)
 Head and neck radiation

*Rare.

- Recurrent aphthous stomatitis (RAS)—also called recurrent aphthous ulcers (RAU)
- Viral infections, particularly herpes simplex and herpes zoster
- Other infectious agents (*Candida albicans* and bacteria)
- Trauma
- Tobacco or irritating foods or chemicals
- Chemotherapy and radiation therapy

Candidal Stomatitis



Evaluation

History: History of present illness should ascertain the duration of symptoms and whether the patient ever had them previously. Presence and severity of pain should be noted. The relation of symptoms to food, drugs, and other substances (particularly occupational exposure to chemicals, metals, fumes, or dust) is sought.

Review of systems seeks symptoms of possible causes, including chronic diarrhea and weakness (inflammatory bowel disease, celiac sprue), genital lesions (Behçet's syndrome, syphilis), eye irritation (Behçet's syndrome), and weight loss, malaise, and fever (nonspecific chronic illness).

Past medical history should ascertain known conditions that cause oral lesions, including herpes simplex, [Behçet's syndrome](#), inflammatory bowel disease, and risk factors for oral lesions, including [immunocompromised](#) state (eg, cancer, diabetes, organ transplant, use of [immunosuppressants](#), HIV infection). Whether chemotherapy or radiation therapy has ever been used to manage cancer needs to be determined. Drug history should note all recent drugs used. History of tobacco use should be noted. Social history should include sexual contact, particularly oral sex, unprotected sex, and sex with multiple partners.

Physical examination: Vital signs are reviewed for fever. The patient's general appearance is noted for [lethargy](#), discomfort, or other signs of significant systemic illness.

The mouth is inspected for the location and nature of any lesions.

The skin and other mucosal surfaces (including the genitals) are inspected for any lesions, rash, [petechiae](#), or [desquamation](#). Any bullous lesions are rubbed for [Nikolsky's sign](#) (peeling of epithelium with lateral pressure).

Red flags: The following findings are of particular concern:

- Fever
- [Cutaneous bullae](#)
- [Ocular inflammation](#)
- [Immunocompromise](#)

Interpretation of findings: Occasionally, causes are obvious in the history (eg, cytotoxic chemotherapy; significant occupational exposure to chemicals, fumes, or dust). Recurrent episodes of oral lesions occur with RAS, herpes simplex, and Behçet's syndrome. History of diabetes, HIV infection or other immunocompromise, or recent antibiotic use should increase suspicion of *Candida* infection. Recent drug use (particularly sulfa drugs, other antibiotics, and [antiepileptics](#)) should increase suspicion of Stevens-Johnson syndrome (SJS).

Some causes typically have [extraoral, noncutaneous findings](#), some of which suggest a cause. Recurrent GI symptoms suggest inflammatory bowel disease or [celiac sprue](#). Ocular symptoms can occur with Behçet's syndrome

and SJS. Genital lesions may occur with Behçet's syndrome and primary syphilis.

Some causes usually also have **extraoral, cutaneous findings**.

Cutaneous bullae suggest **SJS**, **pemphigus vulgaris**, or **bullous pemphigoid**. **Prodrome** of **malaise**, fever, **conjunctivitis**, and generalized **macular target lesions** suggests SJS. Pemphigus vulgaris starts with oral lesions, then progresses to flaccid cutaneous bullae. **Bullous pemphigoid** has tense bullae on normal-appearing skin. **Nikolsky's sign** is usually positive in SJS and pemphigus vulgaris.

Cutaneous vesicles are typical with **chickenpox** or **herpes zoster**. Unilateral lesions in a band along a dermatome suggest herpes zoster. Diffuse, scattered **vesicular** and **pustular lesions** in different stages suggest chickenpox.

Kawasaki disease usually has a macular rash, **desquamation** of hands and feet, and **conjunctivitis**; it occurs in children, usually those < 5 yr. Oral findings include erythema of the lips and oral mucosa.



<http://www.aafp.org/afp/2006/1001/afp20061001p1141-f1.jpg>

Other **cutaneous lesions** may implicate **erythema multiforme**, hand-foot-and-mouth disease (from **coxsackievirus**), or secondary syphilis.

Some causes have **isolated oral findings**, including **RAS**, most viral infections, **acute necrotizing ulcerative gingivitis**, **primary syphilis**, gonorrhea, and *Candida*.

Location of oral lesions may help identify the cause. Interdental ulcers occur with primary herpes simplex or acute necrotizing ulcerative gingivitis. Lesions on **keratinized** surfaces suggest herpes simplex, RAS, or physical injury. Physical injury typically has an irregular appearance and occurs near projections of teeth, dental appliances, or where biting or an errant toothbrush can injure the mucosa. An aspirin burn next to a tooth and pizza burn on the palate are common.

Primary herpes simplex infection causes multiple vesicular lesions on the intraoral mucosa on both **keratinized** and **nonkeratinized** surfaces and always includes the gingiva. These lesions rapidly ulcerate. Clinical manifestation occurs most often in children. Subsequent reactivations (secondary herpes simplex, cold sore) usually appear starting in puberty on the lip at the vermilion border and, rarely, on the hard palate.

Acute **necrotizing ulcerative gingivitis** causes severe inflammation and punched-out ulcers on the dental papillae and marginal gingivae. A severe variant called **noma** (**gangrenous stomatitis**) can cause full-thickness tissue destruction (sometimes involving the lips or cheek), typically in a debilitated patient. It begins as a **gingival**, **buccal**, or **palatal** (midline lethal granuloma) ulcer that becomes **necrotic** and spreads rapidly. Tissue **sloughing** may occur.

Isolated oral **gonorrhea** very rarely causes burning ulcers and **erythema** of the gingiva and tongue, as well as the more common **pharyngitis**. Primary **syphilis** chancres may appear in the mouth. Tertiary syphilis may cause oral **gummas** or a generalized **glossitis** and mucosal atrophy. The site of a gumma is the only time that squamous cell **carcinoma** develops on the **dorsum** of the tongue. A common sign of HIV becoming AIDS is hairy **leukoplakia** (vertical white lines on the lateral border of the tongue).

C. albicans and related species, which are normal oral flora, can overgrow in people who have taken antibiotics or corticosteroids or who are immunocompromised, such as patients with AIDS. *C. albicans* can cause whitish, cheesy plaques that leave erosions when wiped off. Sometimes only flat, erythematous areas appear (erosive form of *Candida*).

Testing: Patients with acute stomatitis and no symptoms, signs, or risk factors for systemic illness probably require no testing.

If stomatitis is recurrent, viral and bacterial cultures, CBC, serum iron, ferritin, vitamin B₁₂, folate, zinc, and endomysial antibody (for sprue) are done. Biopsy at the periphery of normal and abnormal tissue can be done for persistent lesions that do not have an obvious etiology.

Systematically eliminating foods from the diet can be useful, as can changing brands of toothpaste, chewing gum, or mouthwash.

Treatment

Specific disorders are treated, and any causative substances or drugs are avoided.

Meticulous oral hygiene (using a soft toothbrush and salt-water rinses) may help prevent secondary infection. A soft diet that does not include acidic or salty foods is followed.

Topical measures: Numerous topical treatments, alone or in combination, are used to ease symptoms. These treatments include

- Anesthetics
- Protective coatings
- Corticosteroids
- Physical measures (eg, cautery)

For topical anesthesia of discomfort that may interfere with eating and drinking, the following may be effective:

- Lidocaine rinse
- Sucralfate plus aluminum-magnesium antacid rinse

A 2-min rinse is done with 15 mL (1 tbsp) 2% **viscous lidocaine** q 3 h prn; patient **expectorates** when done (no rinsing with water and no swallowing unless the **pharynx** is involved). A soothing coating may be prepared with **sucralfate** (1-g pill dissolved in 15 mL water) plus 30 mL of **aluminum-magnesium liquid antacid**; the patient should rinse with or without swallowing. Many institutions and pharmacies have their own variation of this formulation (magic mouthwash), which sometimes also contains an **antihistamine**.

If the physician is certain the inflammation is not caused by an infectious organism, the patient can

- Rinse and **expectorate** after meals with **dexamethasone** elixir 0.5 mg/5 mL (1 tsp)
- Apply a paste of 0.1% triamcinolone in an oral emollient
- Wipe **amlexanox** over the ulcerated area with the tip of a finger

Chemical or physical cautery can ease pain of localized lesions. Silver nitrate sticks are not as effective as low-power (2- to 3-watt), defocused, **pulsed-mode CO₂ laser treatments**, after which pain relief is immediate and lesions tend not to recur locally.

Key Points

- Isolated stomatitis in patients with no other symptoms and signs or risk factors for systemic illness is usually caused by a viral infection or RAS.
- **Extraoral symptoms**, skin rash, or both suggest more immediate need for diagnosis.

Reference: <http://www.merckmanuals.com>