

Herpes Simplex Oral

Synonyms: oral herpes labialis, cold sore

Herpes simplex type 1 (HSV-1) is usually the cause of oral infection. After primary infection, the HSV-1 virus becomes latent, usually in the dorsal root ganglia of the trigeminal nerve. Rarely, herpes simplex type 2 (HSV-2) may cause primary infection of the oral cavity, typically in association with orogenital sex but recurrent oral HSV-2 disease is rare.

This PatientPlus article is written for healthcare professionals so the language may be more technical than the [condition leaflets](#). You may find the [abbreviations list](#) helpful.

Epidemiology

- 80% of the population are asymptomatic carriers of the virus.
- 20-40% of people have experienced cold sores at some time.^[1]
- Seropositivity to herpes simplex type 1 (HSV-1) antigen is more prevalent in lower socioeconomic groups. Prevalence has increased globally over the last twenty years.^[2]

Risk factors

- Transmission is due to viral shedding into saliva and can occur by direct contact with saliva (eg kissing). Viral shedding into saliva may occur during asymptomatic infection but it is thought that the risk of infection is much smaller than during symptomatic infection.
- The risk of transmission is highest for 1-4 days from the onset of symptoms but the duration of infectiousness may last up to 12 days.^[3]
- Factors that may trigger a recurrence of oral herpes simplex include immunosuppression (eg corticosteroids), upper respiratory tract infections, fatigue, emotional stress, physical trauma, exposure to sun (ultraviolet light), trauma and menstruation.

Presentation

Infection with herpes simplex virus (HSV) can cause pain and blistering within the mouth (gingivostomatitis or recurrent oral ulceration), or on or around the lips (cold sores or herpes labialis).



- Primary infection:
 - Most often occurs in infancy or childhood. It may or may not be symptomatic.
 - Gingivostomatitis is the most common presentation in young children. It presents with vesicles and ulcers on the tongue, lips, gums, buccal mucosa and hard and soft palates. Pain, inability to swallow, drooling and dehydration are common. There may be associated fever, **cervical lymphadenopathy**, halitosis, lethargy, loss of appetite and irritability.
 - Pharyngitis is a more common presentation in adolescents, with lesions in the throat associated with viral symptoms similar to those of **glandular fever**.
 - Herpetic whitlow may occasionally occur via spread to the fingers.
- Recurrent infection:
 - Cold sore lesions are the most common form of recurrent disease. They tend to occur in the same location, be unilateral and recur two or three times a year on average.
 - Prodromal symptoms may occur 6-24 hours before the appearance of a lesion and include tingling, pain and/or itching in the perioral area.
 - Cold sores are usually seen on the lips and extend to the skin around the mouth. Other areas on the face, chin, or nose are sometimes involved. Lesions begin as erythematous areas that swell into papules. These become vesicles, which then collapse into ulcers. This takes 1-3 days. The ulcers crust over and the skin returns to normal within about 2 weeks.
 - Oral mucosal lesions are rare and not generally associated with fever. They are usually restricted to small clusters of microvesicles that rupture to leave punctate ulcers, typically on the palatal gingiva. Immunocompromised people may develop chronic ulcers, often on the tongue.

Differential diagnosis

- Differential diagnosis of herpes simplex gingivostomatitis:
 - **Aphthous ulcers** - do not cause fever and lesions are more likely to be on non-keratinised mucosa.
 - Hand, foot and mouth disease - lesions may also be seen on the hands or feet.
 - **Herpes zoster** of second or third division of the trigeminal nerve.
 - **Infectious mononucleosis**.
 - **Erythema multiforme**.
 - **Stevens-Johnson syndrome**.
 - Behçet's disease.
 - **Leukaemia**.
- Differential diagnosis of cold sores:
 - Aphthous ulcers - are not unilateral and are more likely to be on non-keratinised mucosa
 - **Chickenpox**

- Impetigo
- Lip cancer
- Primary oral chancre of syphilis
- Signs of possible oral cancer include:
 - Ulceration of the oral mucosa persisting for more than 3 weeks.
 - Oral swellings persisting for more than 3 weeks.
 - All red or red and white patches of the oral mucosa.
 - The level of suspicion is further increased if the person is a heavy smoker, heavy alcohol drinker, aged over 45 years or male.
- The National Institute for Health and Clinical Excellence (NICE) guidance on referral for suspected cancer recommends urgent referral for a person with:^[4]
 - Unexplained red and white patches (including suspected lichen planus) of the oral mucosa that are painful, or swollen, or bleeding.
 - Unexplained ulceration of the oral mucosa, or mass persisting for more than 3 weeks.
- NICE also recommends that any person with persistent oral symptoms or signs in whom a definite diagnosis of a benign lesion cannot be made should be referred or followed up until the symptoms and signs disappear. If the symptoms and signs have not disappeared after 6 weeks, an urgent referral should be made.

Investigations

- Tests are not usually necessary in immunocompetent people, as history and examination will usually confirm the diagnosis.
- Viral culture from swabs of lesions has been considered the gold standard but is limited by the short time period of viral shedding and the relatively low number of viral particles present in samples.

Management^[1]

- Cold sores or gingivostomatitis is usually mild and self-limiting and so can be managed symptomatically. Reassure that lesions will heal without scarring.
- A soft diet may be needed: drinking should also be encouraged to prevent dehydration.
- Give advice to reduce risk of transmission:
 - Avoid touching the lesions.
 - Wash hands with soap and water immediately after touching lesions, such as after applying medication.
 - Topical medications should be dabbed on rather than rubbed in to minimise trauma.
 - Don't share topical medications or other items that come into contact with a lesion area, eg lipstick or lip gloss, with others.
 - Avoid kissing until the lesions have completely healed.
 - Avoid oral sex until all lesions have completely healed.
 - There is a risk of transmission to the eye if contact lenses become contaminated.
 - Children with cold sores do not need to be excluded from nurseries and schools.
- Advise to seek medical advice if the person's condition deteriorates (eg the lesion spreads, a new lesions develops after the initial outbreak, persistent fever, inability to eat) or no improvement is seen after 7-10 days.

Drug treatment^[1]

- Paracetamol and ibuprofen are effective in relieving pain and pyrexia.
- Local analgesic for gingivostomatitis - benzydamine mouthwash or spray (age 5 and over).
- Chlorhexidine mouthwash for gingivostomatitis (aged 7 and over).
- Choline salicylate gel for pain control of cold sores (contra-indicated under the age of 16 due to Reye's syndrome).
- Lidocaine gel for pain control of cold sores (licensed for use in patients aged 12 and over).
- Topical antiviral agents:
 - Aciclovir 5% can be used from the age of 3 months. Penciclovir 1% cream should be used from the age of 12.
 - The benefits of topical antivirals are small and cold sores usually resolve within 7-10 days even without treatment.
 - Topical antivirals do not prevent future episodes of cold sores alone but one study found that a combination of aciclovir and hydrocortisone showed some preventative activity.^[5]
 - Treatment needs to be initiated at the onset of symptoms before vesicles appear.

- Topical antivirals need to be applied frequently for a minimum of 4-5 days.
- Oral antiviral agents:
- For immunocompetent individuals, oral antivirals are not routinely indicated for the treatment of cold sores but may be indicated in severe episodes.
- Seek specialist advice for people who are immunocompromised (including people with HIV).
- Aciclovir is active against **herpes viruses** but does not eradicate them. It can be used as systemic and topical treatment of herpes simplex infections of the mucous membranes and is used orally for severe herpetic stomatitis.
- **Valaciclovir** is an ester of aciclovir. It is licensed for herpes simplex infections of the skin and mucous membranes.

Laser treatment

Low-intensity laser has been used in a patient with severe herpes simplex virus type 1 (HSV-1) infection of the lower lip with rapid relief of pain after one application.^[6]

Referral

- Seek advice for managing immunocompromised individuals who have cold sores, including people with HIV.
- Seek specialist advice if neonatal herpes is suspected (rare; may present with skin, eye and/or mouth symptoms).

Complications

- Dehydration, especially in children.
- Recurrent lesions at the same site may occasionally cause atrophy and scarring.
- Secondary bacterial infection, including impetigo, can occur.
- **Eczema herpeticum** can complicate **atopic eczema**.
- **Bell's palsy** is possibly a complication of herpes simplex infection.
- Rare complications include dissemination, **herpes encephalitis**, **meningitis**, corneal **dendritic ulcers** (ocular herpes simplex) and erythema multiforme.

Prognosis

- Oral herpes simplex is usually a self-limiting disease.
- Lesions (whether due to primary infection or recurrent disease) usually heal within 1-3 weeks, without scarring.^[7]

Prevention

- Sunscreen may be useful for people who have recurrences triggered by sunlight.^[8]
- There is no evidence available to support the use of topical antivirals for the prevention of cold sores.
- Prophylactic oral antivirals are not generally recommended for immunocompetent individuals. There is only limited evidence that prophylactic oral aciclovir or valaciclovir reduces the frequency and severity of attacks of cold sores.^[9]
- Oral antivirals do have a role in prophylaxis for people with frequent or severe episodes, or for immunocompromised individuals (specialist advice should be sought).^[1]
- Laser phototherapy may help to reduce the frequency of attacks in recurrent herpes labialis.^[10]

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Further reading & references

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