

# Evaluation of acute pharyngitis in adults

**AUTHORS:** Anthony W Chow, MD, FRCPC, FACP, Shira Doron, MD, FIDSA, FSHEA

**SECTION EDITOR:** Mark D Aronson, MD

**DEPUTY EDITORS:** Karen Law, MD, FACP, Sheila Bond, MD

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## INTRODUCTION

Acute pharyngitis is one of the most common conditions encountered in outpatient clinical practice. Most cases of acute pharyngitis are caused by respiratory viruses and are self-limited. However, symptoms of viral pharyngitis broadly overlap with pharyngitis caused by important treatable causes, such as group A *Streptococcus* (GAS) ( [figure 1](#)). Using a systematic approach to diagnosis can help reduce inappropriate antibiotic use by identifying which patients require testing and treatment for GAS and can also help determine which patients have serious conditions, such as acute human immunodeficiency virus (HIV) infection, highly contagious infection such as coronavirus disease 2019 (COVID-19), or life-threatening complications of infection, such as airway obstruction.

The epidemiology, clinical features, and evaluation of acute pharyngitis in adults are reviewed here. The treatment of streptococcal pharyngitis and the symptomatic management of pharyngitis are discussed separately. (See "[Treatment and prevention of streptococcal pharyngitis in adults and children](#)" and "[Symptomatic treatment of acute pharyngitis in adults](#)".)

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## EPIDEMIOLOGY

Acute pharyngitis accounts for approximately 12 million ambulatory care visits, or 1 to 2 percent of all ambulatory care visits, in the United States annually [1]. The incidence peaks in childhood

and adolescence with approximately 50 percent of all cases occurring before age 18 [2,3]. Among adults, most cases of acute pharyngitis occur by age 40 and incidence declines thereafter [2].

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## ETIOLOGY AND CLINICAL FEATURES

Causes of sore throat can be broadly categorized as infectious (usually viral or bacterial) and noninfectious. The two most common infectious causes are respiratory viruses and group A *Streptococcus* (GAS) ( [table 1](#)).

Most patients with pharyngitis of any cause present with a sore throat that worsens when swallowing. Neck pain or swelling due to regional lymphadenopathy commonly accompany sore throat. Fever, headache, fatigue, and malaise are variably present. The specific microbiologic cause of pharyngitis can rarely be distinguished based on clinical features alone. However, understanding the relative prevalence of the causes of pharyngitis and their clinical features can help focus evaluation.

### Infectious causes

**Respiratory viruses, including SARS-CoV-2** — Respiratory viruses are the most common causes of acute pharyngitis, accounting for approximately 25 to 45 percent of cases [4-6]. Adenovirus, rhinovirus, and coronaviruses (including severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2], the virus that causes COVID-19) are among the leading causes of viral pharyngitis. Other respiratory viruses that cause pharyngitis include enteroviruses, influenza A and B, parainfluenza viruses, and respiratory syncytial virus.

Patients with pharyngitis caused by respiratory viruses usually have other signs and symptoms of upper respiratory tract infection, such as fatigue, nasal congestion, and cough ( [figure 1](#)). Coryza, conjunctivitis, sneezing, hoarseness, ear pain, sinus discomfort, oral ulcers, and a viral exanthem ( [picture 1](#)) are additional features that support the diagnosis of viral pharyngitis. Fever associated with viral upper respiratory tract infection is typically low grade except in patients with influenza and COVID-19. Cervical lymphadenopathy may be present but is generally not prominent. (See "[The common cold in adults: Diagnosis and clinical features](#)", section on '[Clinical features](#)').

Pharyngitis caused by SARS-CoV-2 can occur with or without other signs or symptoms of COVID-19, which is discussed in detail separately. (See "[COVID-19: Clinical features](#)".)

**Group A Streptococcus** — GAS is the most common bacterial cause of acute pharyngitis and is estimated to cause approximately 5 to 15 percent of cases of acute pharyngitis in adults in developed countries [7-12]. Rates are higher in less developed countries [13].

Classic signs and symptoms of GAS pharyngitis include acute-onset sore throat, fever, pharyngeal edema, patchy tonsillar exudates, and prominent, tender, anterior cervical lymphadenopathy ( [picture 2](#) and [figure 1](#)). Other features that support the diagnosis include palatal petechiae, a scarlatiniform rash ( [picture 3](#)), and a strawberry tongue ( [picture 4](#)) (eg, Scarlet fever). Occurrence in a younger adult and exposure to others with GAS pharyngitis also make the diagnosis more likely. (See "[Group A streptococcal tonsillopharyngitis in children and adolescents: Clinical features and diagnosis](#)".)

In addition to causing acute pharyngitis, GAS infection can lead to suppurative and nonsuppurative complications. Suppurative complications of GAS pharyngitis are due to invasion of the organism beyond the pharynx and include otitis media, peritonsillar cellulitis or abscess, sinusitis, meningitis, bacteremia, and necrotizing fasciitis. Nonsuppurative complications of GAS pharyngitis are immune mediated and include acute rheumatic fever, poststreptococcal glomerulonephritis, and reactive arthritis. Prevention of these complications is a key reason for treating GAS pharyngitis with antibiotics. (See "[Treatment and prevention of streptococcal pharyngitis in adults and children](#)" and "[Complications of streptococcal tonsillopharyngitis](#)".)

GAS can also asymptotically colonize the oropharynx, termed chronic carriage ( [table 2](#)). In general, there is no need to test for or treat chronic carriage. (See "[Treatment and prevention of streptococcal pharyngitis in adults and children](#)", section on 'Definitions' and "[Treatment and prevention of streptococcal pharyngitis in adults and children](#)", section on 'Chronic GAS carriers'.)

## Other bacteria

- **Group C and G Streptococcus** – Group C and G streptococci are generally considered to be less common causes of pharyngitis than GAS [9,14], although cohort studies suggest that these bacteria may account for about 5 to 10 percent of cases of pharyngitis [8,9,15]. Pharyngitis caused by group C or G *Streptococcus* is clinically indistinguishable from GAS pharyngitis. Infection with group C or G streptococci most often occurs among college students and young adults and has been associated with community and foodborne outbreaks [8,9,15,16]. In contrast with GAS pharyngitis, infection with group C or G streptococci has not been associated with acute rheumatic fever or other immune-

mediated complications. (See "[Group C and group G streptococcal infection](#)", section on '[Pharyngitis](#)

- ***Arcanobacterium haemolyticum*** – *A. haemolyticum* (formerly *Corynebacterium haemolyticum*), a facultative anaerobic gram-positive bacillus is an uncommon cause of acute pharyngitis, accounting for about 1 to 2.5 percent of cases [12,17]. Pharyngitis caused by *A. haemolyticum* is similar to streptococcal pharyngitis and is most common in adolescents and young adults [9,17,18]. A scarlatiniform rash, similar to that seen with Scarlet fever, is common, affecting about 50 percent of patients [17,18]. Severe, invasive infections with *A. haemolyticum* are rare but have been reported [19-24]. *A. haemolyticum* is usually resistant to [trimethoprim-sulfamethoxazole](#) and may be penicillin tolerant [25]. Treatment of choice in the outpatient setting is [erythromycin](#) [26].
- ***Fusobacterium necrophorum*** – *F. necrophorum*, an anaerobe that often colonizes the oropharynx, is a putative cause of pharyngitis. *F. necrophorum* has been detected in oropharynx of approximately 2 to 10 percent of asymptomatic young adults. Rates of detection are higher in symptomatic patients, ranging from 15 to 21 percent of adults with acute pharyngitis [27-30] and up to 45 percent in adults with recurrent pharyngitis [31,32]. However, copathogens are often detected with *F. necrophorum* [33], and no study has demonstrated that treatment directed at *F. necrophorum* leads to resolution of symptoms or prevention of complications [34]. Thus, it is possible that the organism's ecologic niche broadens with pharyngeal inflammation and that *F. necrophorum* is a secondary invader rather than a causative pathogen. By contrast, *F. necrophorum* plays a causal role in Lemierre syndrome (septic thrombophlebitis of the internal jugular vein). (See "[Lemierre syndrome: Septic thrombophlebitis of the internal jugular vein](#)").
- ***Mycoplasma* and *Chlamydia* species** – Both *Mycoplasma pneumoniae* and *Chlamydia pneumoniae* have been reported to cause pharyngitis, most commonly in children and young adults [35-37]. The precise prevalence is not known, but *M. pneumoniae* appears to be more common than *C. pneumoniae*. Pharyngitis caused by either organism is often accompanied by lower respiratory tract infection. (See "[Mycoplasma pneumoniae infection in adults](#)" and "[Pneumonia caused by Chlamydia pneumoniae in adults](#)".)
- ***Corynebacterium diphtheriae*** – *C. diphtheriae* is the causative agent of diphtheria. While rare in the United States, the prevalence of diphtheria is higher in less developed regions of the world where vaccination rates are low and outbreaks continue to occur [38,39]. The clinical syndrome of diphtheria is characterized by pharyngitis, low-grade fever, malaise, and cervical lymphadenopathy. Symptom onset is usually gradual. The hallmark of diphtheria, the formation of a tightly adherent gray membrane that bleeds when

dislodged, occurs in at least one-third of patients ( [picture 5](#) and [picture 6](#)). Although diphtheria is rare, suspicion should be raised in patients who have recently lived in or traveled to areas where diphtheria remains endemic and in unvaccinated patients. (See "Clinical manifestations, diagnosis, and treatment of diphtheria" and "Epidemiology and pathophysiology of diphtheria".)

- ***Francisella tularensis*** – *F. tularensis* can cause pharyngeal tularemia, particularly when infection is acquired by ingestion of contaminated food or water. Pharyngeal tularemia is characterized by fever and severe exudative pharyngitis, which is often accompanied by oral ulcers and painful cervical lymphadenopathy. As with diphtheria, a pharyngeal membrane may be present. While rare in the United States, tularemia comprises a larger percentage of cases worldwide, particularly in outbreaks that have occurred as a consequence of the disruptions caused by war or natural disaster [40-45]. (See "Tularemia: Clinical manifestations, diagnosis, treatment, and prevention", section on 'Pharyngeal (oropharyngeal) disease'.)

**HIV and other sexually transmitted infections** — Sexually transmitted infections (STIs) are uncommon causes of pharyngitis, but their prevalence rises considerably among those with high-risk behaviors ( [table 3](#)) [46-48].

- **Acute HIV infection** – Acute HIV infection is estimated to be symptomatic (termed acute retroviral syndrome) in approximately 40 to 90 percent of patients [49-51]. Among symptomatic patients, approximately 40 percent have pharyngitis [50]. The presence of painful mucocutaneous lesions is one of the most distinctive characteristics of acute HIV infection. Ulcers are typically shallow and sharply demarcated with a white base and erythematous perimeter. In contrast with other forms of pharyngitis, pharyngeal exudates are typically absent. The presence of generalized rash, usually maculopapular, should also raise suspicion for HIV infection.

Other common features of acute retroviral syndrome are nonspecific and include fever, cervical lymphadenopathy, myalgia/arthralgia, diarrhea, weight loss, and headache ( [table 4](#)). Symptoms associated with acute HIV infection typically arise about two to four weeks after HIV acquisition. Suspicion for acute HIV infection should be raised in any patient with risk factors for STIs or bloodborne exposures. (See "Acute and early HIV infection: Clinical manifestations and diagnosis", section on 'Clinical features'.)

- ***Neisseria gonorrhoeae*** – The prevalence of pharyngeal gonorrhea is reported to be as high as 15 percent among men who have sex with men (MSM), although the majority of cases are asymptomatic [46-48]. Signs and symptoms of gonococcal pharyngitis are

nonspecific and include sore throat, pharyngeal exudates, and cervical lymphadenopathy. Risk factors for STIs, in particular receptive oral intercourse, should raise suspicion for gonococcal pharyngitis. (See "[Clinical manifestations and diagnosis of \*Neisseria gonorrhoeae\* infection in adults and adolescents](#)".)

- **Treponema pallidum** – *T. pallidum*, the causative agent of syphilis, is a rare cause of pharyngitis. However, syphilis rates are rising, particularly among MSM and persons with HIV infection [52-54]. Pharyngitis is a common presenting symptom, affecting up to 50 percent of patients with secondary syphilis [55]. Pharyngeal examination often reveals mucous patches on the oral mucosa and tongue (round or oval elevated lesion covered by a pink-gray membrane) ( [picture 7](#)). Oropharyngeal complaints are rarely the sole presenting symptoms in patients with secondary syphilis. Although symptoms of secondary syphilis vary widely, other common findings include generalized lymphadenopathy and a rash involving the palms and soles. The onset of symptoms typically occurs weeks to months after exposure. (See "[Syphilis: Epidemiology, pathophysiology, and clinical manifestations in patients without HIV](#)", section on 'Secondary syphilis'.)

**Epstein-Barr virus and other herpes viruses** — Acute infection with Epstein-Barr virus (EBV), the causative agent of infectious mononucleosis, and other members of the herpes virus family including cytomegalovirus (CMV) and herpes simplex virus (HSV) also cause pharyngitis. While the precise incidence and prevalence of symptomatic pharyngitis caused by herpes viruses is not known, rates appear to be highest in adolescents and young adults [56-58].

- **Epstein-Barr virus** – Pharyngitis is a prominent feature of infectious mononucleosis (the syndrome that can accompany acute EBV infection) and occurs in approximately 85 percent of patients. Other common features include moderate to high fever, marked fatigue, and tender, symmetric posterior cervical lymphadenopathy. Similar to GAS pharyngitis, patchy pharyngeal exudates and palatal petechiae may be present. Tonsillar swelling can be severe. In contrast with other forms of pharyngitis, symptoms caused by acute EBV infection are prolonged, often lasting two to three weeks. Additional distinguishing features include splenomegaly and atypical lymphocytosis ( [table 5](#)). (See "[Clinical manifestations and treatment of Epstein-Barr virus infection](#)" and "[Infectious mononucleosis](#)".)
- **Cytomegalovirus** – CMV can also cause a mononucleosis-like illness. CMV is less likely than EBV to be associated with pharyngitis. The illness is characterized primarily by prolonged fever, less prominent lymphadenopathy, and absent or mild pharyngitis. (See "[Infectious mononucleosis](#)", section on 'Cytomegalovirus' and "[Epidemiology, clinical](#)

manifestations, and treatment of cytomegalovirus infection in immunocompetent adults", section on 'CMV mononucleosis').

- **Herpes simplex virus** – Pharyngitis can be the presenting symptom of acute HSV infection, even in the absence of oral ulcers. In a case series of 35 young adults with HSV-1 pharyngitis, the most common findings included pharyngeal erythema and/or exudates and cervical lymphadenopathy [56]. Fever and oropharyngeal ulcers were less common, affecting approximately 35 to 40 percent of patients. Labial and gingival ulcers, which are classically associated with HSV-1 infection, were present in a minority. HSV-2 has also been reported to cause pharyngitis following orogenital contact; symptoms appear to be similar to HSV-1 pharyngitis [59].

**Noninfectious causes** — The most common noninfectious causes of pharyngitis include allergic rhinitis or sinusitis, gastroesophageal reflux disease, smoking or exposure to second-hand smoke, and exposure to dry air (particularly in the winter). Trauma (eg, caused by tracheal intubation) or vocal strain have also been reported to cause sore throat [60-63].

Medications associated with pharyngitis include angiotensin-converting enzyme (ACE) inhibitors and some chemotherapeutics [60]. Autoimmune disorders that cause pharyngitis include Kawasaki disease, periodic fever with aphthous stomatitis, pharyngitis, and adenitis, and Behçet syndrome.

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## EVALUATION

The main goals in evaluation of adults with pharyngitis are the exclusion of serious or potentially life-threatening conditions and the identification of treatable causes.

We generally use an algorithmic approach to diagnosis ( [algorithm 1](#)), which takes into account the relative prevalence of the different causes of pharyngitis and their clinical features ( [table 1](#)), warning signs for serious or life-threatening conditions ( [table 6](#) and [table 7](#)), and patient risk factors for sexually transmitted infections ( [table 3](#)) or other pertinent exposures.

**Need for urgent management** — Assessing for conditions that require urgent management is an important first step in the evaluation of patients with pharyngitis. Although rare, severe infections of the pharynx and surrounding soft tissue can be life-threatening. Recognizing signs and symptoms of these conditions is critical to management ( [table 6](#)).

Upper airway obstruction can result from severe pharyngeal inflammation of any etiology but is more commonly associated with infectious mononucleosis and invasive infections involving the deep tissue of the neck. (See "[Infectious mononucleosis](#)", section on '[Complications including airway obstruction](#)' and "[Deep neck space infections in adults](#)".)

Signs of upper airway obstruction include:

- Muffled or "hot potato" voice
- Hoarseness
- Drooling or pooling of saliva
- Stridor
- Respiratory distress (tachypnea, dyspnea, retractions)
- "Sniffing" or "tripod" positions, which help maintain airway patency

Bacterial invasion of the deep tissue of the neck can lead to infection and/or abscess formation in the peritonsillar, submandibular, parapharyngeal, or retropharyngeal space ( [figure 2](#)). Suppurative thrombophlebitis (Lemierre syndrome) can arise from bacterial invasion and clot formation of the jugular vein ( [table 7](#)).

In addition to the signs of upper airway obstruction, features that may indicate deep neck space infections include:

- Severe unilateral sore throat
- Bulging of pharyngeal wall, soft palate, or floor of the oropharynx
- Neck pain or swelling
- Crepitus
- Trismus (irritation and reflex spasm of the internal pterygoid muscle)
- Stiff neck
- Toxic appearance
- Fever and rigors
- History of penetrating trauma to the oropharynx

Patients with signs of airway obstruction generally require urgent airway management and/or hospitalization for additional care. (See "[Basic airway management in adults](#)" and "[Approach to the adult with dyspnea in the emergency department](#)".)

Most patients with clinical features concerning for deep neck space infection require referral to the emergency department or an inpatient setting for imaging, drainage, and/or surgical consultation and antibiotic treatment. (See "[Deep neck space infections in adults](#)".)

**Testing for COVID-19** — The need for testing patients with acute pharyngitis for SARS-CoV-2 depends on local prevalence and/or patient exposure. Testing methods and other aspects of diagnosing COVID-19 are discussed separately. (See "[COVID-19: Diagnosis](#)".)

**Identifying patients with other respiratory viral syndromes** — Distinguishing between the two most common infectious etiologies of acute pharyngitis, respiratory viruses and group A *Streptococcus* (GAS), is important because management strategies differ. Antibiotic treatment is recommended for patients with GAS pharyngitis, whereas supportive care is sufficient for patients with viral pharyngitis.

For patients with symptoms that strongly suggest a viral upper respiratory tract infection, the diagnosis of viral pharyngitis can be made clinically. Features that favor the diagnosis of a respiratory viral syndrome include ( [table 8](#) and [figure 1](#)):

- Cough (often with fever and malaise)
- Nasal congestion
- Conjunctivitis
- Coryza
- Oral ulcer
- Viral exanthem ( [picture 1](#))

Aside from SARS-CoV-2, testing for GAS or other pathogens is not needed, unless the clinical diagnosis is uncertain or risk factors for a specific treatable cause are present (eg, risk factors for sexually transmitted infections).

**Determining whom to test for GAS** — Patients with a clinical syndrome compatible with GAS pharyngitis who lack symptoms of a respiratory viral syndrome should have microbiologic testing [9,64-67]. Because clinical features of GAS pharyngitis broadly overlap with pharyngitis caused by viruses and other pathogens, empiric treatment for GAS without microbiologic confirmation is generally not recommended.

Clinical features that should raise suspicion for GAS pharyngitis include ( [figure 1](#)):

- Sudden-onset sore throat
- Fever
- Tonsillopharyngeal and/or uvular edema
- Patchy tonsillar exudates
- Cervical lymphadenitis (often tender and anterior)
- Scarlatiniform skin rash ( [picture 3](#)) and/or strawberry tongue ( [picture 4](#)) (scarlet fever)

- History of GAS exposure

When the need for testing is unclear based on clinical features alone, the Centor criteria can help guide the decision to test ( [table 9](#)). We generally test for GAS pharyngitis in patients with  $\geq 3$  Centor criteria (some practitioners use a threshold of  $\geq 2$ ). Patients with Centor criteria  $< 3$  are unlikely to have GAS pharyngitis and generally do not need testing [68-70]. Because the Centor criteria have relatively low sensitivity (approximately 50 percent) but high specificity (approximately 82 to 98 percent) [71,72] for the diagnosis of streptococcal pharyngitis, use of these criteria should not replace testing for GAS and should not be used as the determinant of the need for antibiotic therapy.

The Infectious Diseases Society of America and the American Heart Association recommend using clinical judgment to determine who should be tested for GAS [9,64]; by contrast, the European Society of Clinical Microbiology and Infectious Diseases endorse use of the Centor criteria [64]. Recommendations for testing often differ in regions of the world where the prevalence of GAS infection and acute rheumatic fever are higher [73,74]. (See "[Society guideline links: Streptococcal tonsillopharyngitis](#)".)

**Testing for GAS** — For most adults with suspected group A *Streptococcus* (GAS) pharyngitis, testing with either a sensitive rapid antigen detection test (RADT) or a nucleic acid amplification test (NAAT) is sufficient for diagnosis, and follow-up throat culture is not needed [9]. Because NAATs are highly sensitive and specific, they can also be used as a follow-up confirmatory test when an RADT is negative but streptococcal pharyngitis is still suspected.

For patients with a positive RADT, NAAT, or culture and symptomatic pharyngitis, antibiotic treatment is recommended.

- **RADT performance** – The specificity of most available RADTs is high, ranging from approximately 88 to 99 percent [9,75]. Thus, in patients with suspected GAS pharyngitis, false positives are uncommon.

For most patients with a negative RADT, additional testing for GAS is not needed. The sensitivity of RADTs in adults ranges from about 77 to 92 percent, varying with the specific assay used [9,75]. In practice, clinicians should refer to the manufacturer's data on sensitivity and specificity when interpreting results. Because the sensitivity of the RADT is moderate in adults, some patients with GAS pharyngitis will be missed when follow-up throat culture is not performed. However, the incidence of complications, such as acute rheumatic fever, is generally low in adults and observational data suggest that using an RADT without culture confirmation is not associated with increased complications [76].

- **Confirming a negative RADT in selected patients** – We use culture or NAAT to confirm negative RADT results in the following patients [77]:

- Patients who are at higher risk for severe infection or complications from GAS pharyngitis (eg, patients with a history of acute rheumatic fever or immunocompromising conditions)
- Patients who are in close contact with individuals at high risk for complications (eg, patients caring for infants or living with immunocompromised individuals)
- Young adult patients living in college dormitories or other settings where the prevalence of GAS pharyngitis is higher than in the general adult population
- Patients living in areas where acute rheumatic fever is endemic or where there are active acute rheumatic fever epidemics
- Patients in whom clinical suspicion for GAS is high despite a negative RADT (eg, persons with Centor scores  $\geq 3$  who have additional risk factors for GAS pharyngitis such as exposure to a person with GAS infection)

Culture generally takes about 24 to 48 hours. With proper collection and processing techniques, the sensitivity of throat culture is between 90 and 95 percent, and specificity is between 95 and 99 percent [9]. We generally do not treat empirically while awaiting results because short delays in therapy have not been associated with higher complication rates. (See "Treatment and prevention of streptococcal pharyngitis in adults and children".)

- **NAAT performance** – NAATs are more sensitive than RADTs and culture, particularly when bacterial burden is low [78]. Their reported sensitivity and specificity is approximately 97 percent and 95 percent respectively, although there is some variability in performance among available assays [79,80]. However, because NAAT are highly sensitive and can detect low bacterial burden, there is risk of false positives (eg, detecting GAS carriage rather than infection) [81]. The false positive rate and its clinical impact (eg, antibiotic overuse) is yet to be determined [82,83].

**Specimen collection and transport** — The key to optimizing detection of GAS in clinical specimens is appropriate collection and transport of the sample [84]:

- Specimens should be obtained prior to the initiation of antimicrobial therapy in order to maximize diagnostic yield [85,86].

- Specimens should be obtained by vigorous swabbing of both tonsils (or tonsillar fossae in patients without tonsils) and the posterior pharynx. The tongue, buccal mucosa, and hard palate are not satisfactory sites for culture and should be avoided. The importance of obtaining an adequate specimen cannot be overstated, as the sensitivity of both culture and rapid antigen detection testing correlate with inoculum size [87].
- While both RADT and culture are not recommended for most adults, if such a strategy is chosen, two separate samples should be used. The sample obtained for the RADT should not be used for culture. Because GAS remains viable on dry swabs for approximately 48 to 72 hours, samples can be sent for culture after RADT results are obtained.

**Assessing risk for HIV and other sexually transmitted infections** — Evaluation of the patient with acute pharyngitis should include a sexual history ([table 10](#)) and an assessment of other risks for acute HIV infection, such as recent injection drug use or other bloodborne exposures. The two most common sexually transmitted infections that cause pharyngitis are acute HIV infection and gonorrhea.

- Patients with potential exposure to HIV within the past three months who present with pharyngitis, particularly when accompanied with fever, mucocutaneous ulcers, or other signs and symptoms of acute retroviral syndrome ([table 4](#)), should be tested for acute HIV infection. When testing for acute infection, we use the most sensitive immunoassay available (ideally, a combination antigen/antibody immunoassay) in addition to an HIV virologic (viral load) test. (See "[Acute and early HIV infection: Clinical manifestations and diagnosis](#)" and "[Acute and early HIV infection: Clinical manifestations and diagnosis](#)", section on 'Diagnosis'.)
- Patients with risk factors for sexually transmitted infections, particularly receptive oral intercourse, should be tested for gonococcal pharyngitis. An NAAT for *N. gonorrhoeae* performed on a pharyngeal swab is the preferred test for gonococcal pharyngitis. If a validated NAAT is not available, culture can also be performed. (See "[Clinical manifestations and diagnosis of Neisseria gonorrhoeae infection in adults and adolescents](#)", section on 'Patients with extragenital symptoms').
- Patients with pharyngitis and risk factors for sexually transmitted infections should also be tested for syphilis, particularly when demographic risk factors are present (eg, men who have sex with men and/or persons with HIV infection). (See "[Syphilis: Screening and diagnostic testing](#)").

In addition to targeted testing for acute HIV infection, gonococcal pharyngitis and/or secondary syphilis, any patient with risk factors for STIs should be screened for STIs based on their gender

and demographic risk factors ( [table 11](#)). (See "Screening for sexually transmitted infections".)

**Testing for other pathogens** — For the majority of patients with acute pharyngitis, testing for pathogens other than GAS, and SARS-CoV-2 is not needed unless characteristic clinical features or specific risk factors are present, symptoms are prolonged, or a positive result would change management.

As examples, testing for group C or G streptococci, *A. haemolyticum*, and *F. necrophorum* can be considered in patients with non-GAS pharyngitis who do not respond to symptomatic therapy within five to seven days [9,88-92]. Routine (aerobic) throat culture can be used to detect group C or G streptococci and *A. haemolyticum*. *F. necrophorum* is an obligate anaerobe and requires anaerobic culture conditions. Because infections with these organisms is relatively uncommon and complications are overall rare, testing at the initial visit is generally not recommended [9].

Testing for Epstein-Barr virus and/or cytomegalovirus can be considered in patients with infectious mononucleosis or mononucleosis-like syndromes. While supportive care is the primary treatment for these infections, there is prognostic value in making the diagnosis (see "[Epidemiology, clinical manifestations, and treatment of cytomegalovirus infection in immunocompetent adults](#)" and "[Infectious mononucleosis](#)" and "[Clinical manifestations and treatment of Epstein-Barr virus infection](#)"). Testing for herpes simplex virus can be considered in patients with severe sore throat, particularly in young adults with characteristic oral or gingival ulcers. (See "[Epidemiology, clinical manifestations, and diagnosis of herpes simplex virus type 1 infection](#)".)

Rare causes of pharyngitis, such as *C. diphtheriae* and *F. tularensis*, can be severe and require prompt treatment. Testing is recommended for patients with compatible clinical syndromes and epidemiologic risk factors. (See "[Clinical manifestations, diagnosis, and treatment of diphtheria](#)" and "[Tularemia: Clinical manifestations, diagnosis, treatment, and prevention](#)".)

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## FOLLOW-UP

The great majority of patients who have presumed viral pharyngitis or who test negative for group A *Streptococcus* (GAS) pharyngitis recover fully within five to seven days without specific treatment [7]. For these patients, symptom relief is the mainstay of care. (See "[Symptomatic treatment of acute pharyngitis in adults](#)".)

Patients with GAS pharyngitis usually recover sooner, often within 24 to 72 hours of starting antibiotics. (See "[Treatment and prevention of streptococcal pharyngitis in adults and children](#)".)

Failure to improve within these time periods should raise suspicion for alternative diagnoses or complications:

- For adults with presumed viral pharyngitis or for those who test negative for GAS and do not improve in seven days, additional evaluation should be performed for previously unsuspected causes, such as infectious mononucleosis, acute HIV infection, *A. haemolyticum* or *F. necrophorum* infection, suppurative complications (eg, peritonsillar abscess), or noninfectious causes. (See '[Etiology and clinical features](#)' above.)
- For adults with confirmed GAS pharyngitis who worsen or fail to improve within 72 hours, evaluation for suppurative complications, such as a peritonsillar abscess, or an alternative cause superimposed on chronic GAS carriage should be considered. (See "[Treatment and prevention of streptococcal pharyngitis in adults and children](#)", section on '[Response to therapy](#)').

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## SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "[Society guideline links: Streptococcal tonsillopharyngitis](#)".)

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## INFORMATION FOR PATIENTS

UpToDate offers two types of patient education materials, "The Basics" and "Beyond the Basics." The Basics patient education pieces are written in plain language, at the 5<sup>th</sup> to 6<sup>th</sup> grade reading level, and they answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials. Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are written at the 10<sup>th</sup> to 12<sup>th</sup> grade reading level and are best for patients who want in-depth information and are comfortable with some medical jargon.

Here are the patient education articles that are relevant to this topic. We encourage you to print or e-mail these topics to your patients. (You can also locate patient education articles on a variety of subjects by searching on "patient info" and the keyword(s) of interest.)

- Basics topics (see "[Patient education: Strep throat in adults \(The Basics\)](#)" and "[Patient education: Sore throat in adults \(The Basics\)](#)" and "[Patient education: What you should](#)

know about antibiotics (The Basics)")

- Beyond the Basics topic (see "[Patient education: Sore throat in adults \(Beyond the Basics\)](#)")
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## SUMMARY AND RECOMMENDATIONS

- **Common infectious causes** – Acute pharyngitis is one of the most common conditions encountered in outpatient clinical practice. The most common causes of acute pharyngitis are respiratory viruses and group A *Streptococcus* (GAS). Less common causes include other bacteria, herpes viruses such as Epstein-Barr virus, HIV, and some sexually transmitted infections. (See '[Epidemiology](#)' above and '[Etiology and clinical features](#)' above.)
- **Symptoms** – Most patients with pharyngitis present with nonspecific symptoms such as a sore throat that worsens with swallowing and cervical lymphadenopathy. Although the etiology of pharyngitis can rarely be determined based on clinical features alone, certain characteristics can help focus the evaluation ( [table 1](#)). (See '[Etiology and clinical features](#)' above.)
- **Approach to diagnosis** – When evaluating the patient with acute pharyngitis, we use a systematic approach ( [algorithm 1](#)) that helps identify patients who can be clinically diagnosed with a respiratory viral syndrome, those who require testing for GAS or other treatable pathogens such as HIV, and those who have severe or life-threatening conditions. The need for COVID-19 testing depends on local prevalence and/or known exposure. (See '[Evaluation](#)' above.)
- **Suspicion for viral pharyngitis** – For patients with symptoms that strongly suggest a viral upper respiratory tract infection ( [table 8](#) and [figure 1](#)), the diagnosis of viral pharyngitis can be made clinically after ruling out SARS-CoV-2. Testing for GAS or other pathogens is not needed, unless risk factors for a specific treatable cause are present (eg, risk factors for sexually transmitted infections). (See '[Identifying patients with other respiratory viral syndromes](#)' above.)
- **When to test for GAS** – Testing for GAS is indicated for patients who have a clinical syndrome compatible with GAS pharyngitis (eg, fever, tonsillar exudates, and cervical lymphadenopathy) and lack features of a viral upper respiratory tract infection ( [figure 1](#)). When the need for testing is unclear based on clinical features alone, we use the Centor criteria ( [table 9](#)) to help guide our decision. We generally test for

streptococcal pharyngitis in patients with  $\geq 3$  Centor criteria. (See '[Determining whom to test for GAS](#)' above.)

- **GAS testing methods** – Using a sensitive rapid antigen detection test alone is usually sufficient for diagnosis of GAS pharyngitis. Follow-up throat culture is reserved for selected patients who are at high risk for complications, those who are in close contact with persons at high risk for complications, or for persons who live in areas where the prevalence of GAS and/or acute rheumatic fever is high. Nucleic acid amplification tests (NAATs) are increasingly available. Because they are highly sensitive and specific, NAATs can be used in place of a rapid antigen detection test (RADT) or as a follow-up test for patients who have a high suspicion for GAS pharyngitis but test negative by RADT. (See '[Testing for GAS](#)' above.)
- **Evaluating for sexually transmitted infections** – Evaluation should also include a sexual history ([table 10](#)) and assessment of risk factors for HIV. While HIV and sexually transmitted infections are uncommon causes of acute pharyngitis, these are treatable conditions with important public health implications. (See '[Assessing risk for HIV and other sexually transmitted infections](#)' above.)
- **Severe disease and complications** – Although rare, recognizing signs and symptoms of severe or invasive infections and upper airway obstruction ([table 6](#) and [table 7](#)) is a critical part of evaluation. Patients with these signs and symptoms may require urgent stabilization and/or referral to an emergency or inpatient setting for additional care. (See '[Need for urgent management](#)' above.)
- **Clinical course** – The majority of patients presenting with acute pharyngitis can be clinically diagnosed with respiratory viral syndrome after being ruled out for SARS-CoV-2 and/or will test negative for GAS. These patients typically recover within five to seven days without specific treatment. Patients with GAS pharyngitis usually recover soon, often within 24 to 72 hours of starting antibiotics. Failure to improve within these time periods should raise suspicion for alternative diagnoses or complications. (See '[Testing for other pathogens](#)' above and '[Follow-up](#)' above.)

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## **GRAPHICS**

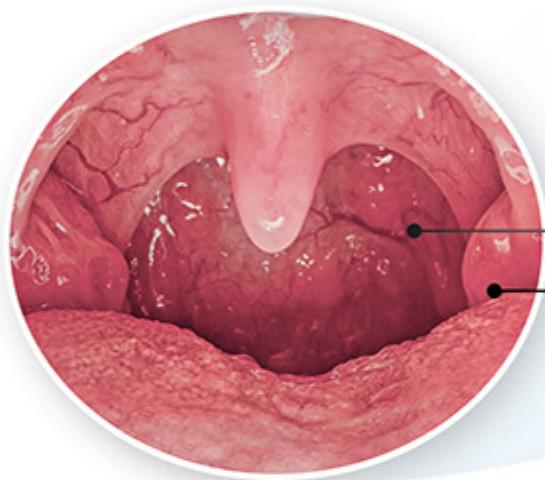
**Distinguishing viral pharyngitis from streptococcal pharyngitis in adults**



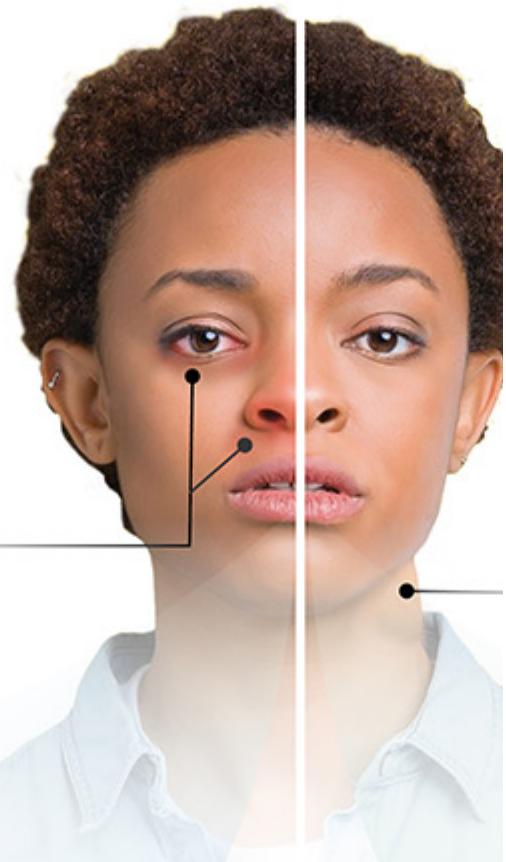
UpToDate®

# Viral Pharyngitis vs. Streptococcal Pharyngitis - in Adults -

## Viral Pharyngitis



**Coryza**  
(nasal and lacrimal edema and congestion)



Pharyngeal erythema  
Tonsillar edema

Features Suggestive of Viral Pharyngitis	Feature
■ Subacute onset of sore throat	■ Acute
■ Associated upper respiratory infection symptoms (cough, congestion, conjunctivitis, hoarse voice)	■ Absent
■ Pharyngeal erythema and tonsillar edema	■ Pharyngeal
■ Low-grade or absent fever	■ Fever
<b>Other Findings</b> (variably present)	■ Tonsillar
■ Pharyngeal/tonsillar exudates	■ Known
■ Oral ulcers	■ Palatal
■ Viral exanthem	■ Scarlet
	■ “Strawberry”

## KEY CONCEPTS

**There is no single clinical feature that distinguishes viral pharyngitis from streptococcal pharyngitis.** The combination of the following findings is highly suggestive of streptococcal pharyngitis:

- Acute onset pharyngitis with tonsillar exudates
- Fever
- Cervical lymphadenopathy
- Absence of other upper respiratory infection symptoms (eg, cough)

Distinguishing viral pharyngitis from group A *Streptococcus* (GAS) pharyngitis can be challenging. Although symptomatic care alone is appropriate for patients with pharyngitis, patients with confirmed streptococcal pharyngitis require antibiotic treatment.

Confirmatory testing for GAS (with a rapid antigen detection test [RADT], throat culture, or rapid molecular test) is not recommended for all patients with suspected streptococcal pharyngitis. When there is uncertainty, however, confirmatory testing can help determine whether testing for GAS is warranted.

*Streptococcal pharyngitis* image reproduced with permission from Dr. P. Marazzi/Science Photo Library.

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Graphic 139794 Version 3.0

## Clinical features of acute pharyngitis by pathogen

	<b>Pathogen</b>	<b>Relative frequency*</b>	<b>Associated clinical syndrome and/or symptoms</b>
<b>Bacteria</b>	Group A <i>Streptococcus</i>	Common	Fever, tonsillar exudates, tender cervical lymphadenopathy, scarlatiniform rash, particularly in an adolescent or young adult
	Group C or G <i>Streptococcus</i>	Less common	Similar to GAS pharyngitis but more frequently acquired in a waterborne or foodborne outbreak
	<i>Arcanobacterium haemolyticum</i>	Less common	Similar to GAS pharyngitis, scarlatiniform rash common, particularly in adolescents and young adults
	<i>Fusobacterium necrophorum</i>	Uncertain	Lemierre syndrome (septic jugular vein thrombophlebitis), possible association with recurrent or persistent pharyngitis
	<i>Neisseria gonorrhoeae</i>	Likely rare	Nonspecific symptoms such as acute sore throat, pharyngeal exudates, and cervical lymphadenopathy in a patient with risk factors for sexually transmitted infections, particularly receptive oral intercourse
	<i>Corynebacterium diphtheriae</i>	Rare	Diphtheria: Low-grade fever, anorexia, malaise, sore throat with gray-white membrane on palate, tonsil or posterior oropharynx, cervical lymphadenopathy, particularly in a patient who has not been vaccinated
	<i>Mycoplasma pneumoniae</i>	Rare	Cough, pneumonia
	<i>Chlamydia pneumoniae</i>	Rare	Fever, cough, laryngitis, pneumonia
	<i>Treponema pallidum</i>	Rare	Secondary syphilis: Sore throat may precede development of mucosal ulcers, generalized lymphadenopathy and palmar-plantar rash
<b>Viruses</b>	<i>Francisella tularensis</i>	Rare	Ulceroglandular fever: Severe sore throat, pharyngeal exudates, cervical lymphadenopathy (often posterior and bilateral), oral ulcers; usually acquired by ingestion of contaminated water
	Respiratory viruses	Very common	Common cold: Fever, rhinorrhea, cough, hoarseness, coryza, conjunctivitis, oral ulcers

Epstein-Barr virus	Common	Infectious mononucleosis: Fever, fatigue, tender cervical lymphadenopathy, splenomegaly, lymphocytosis, particularly in an adolescent or young adult
Herpes simplex virus	Less common	Severe sore throat, with or without oral ulcers
Cytomegalovirus	Rare	Mononucleosis-like syndrome, similar to EBV but typically milder
HIV	Rare	Acute retroviral syndrome: Fever, fatigue, lymphadenopathy, rash, myalgias, arthralgias, diarrhea, weight loss, painful mucocutaneous ulcers

EBV: Epstein-Barr virus; GAS: group A *Streptococcus*; HIV: human immunodeficiency virus.

\* The precise frequency of the etiologies of pharyngitis are not known and likely varies among different populations. In resource-rich regions, the designation of very common is used to indicate causes that are generally considered to exceed 25%, common to exceed 5%, less common to account for 1 to 5%, and rare <1%.

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Graphic 116702 Version 5.0

## Viral exanthem



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Multiple erythematous macules are present on the skin of this patient with a viral exanthem.

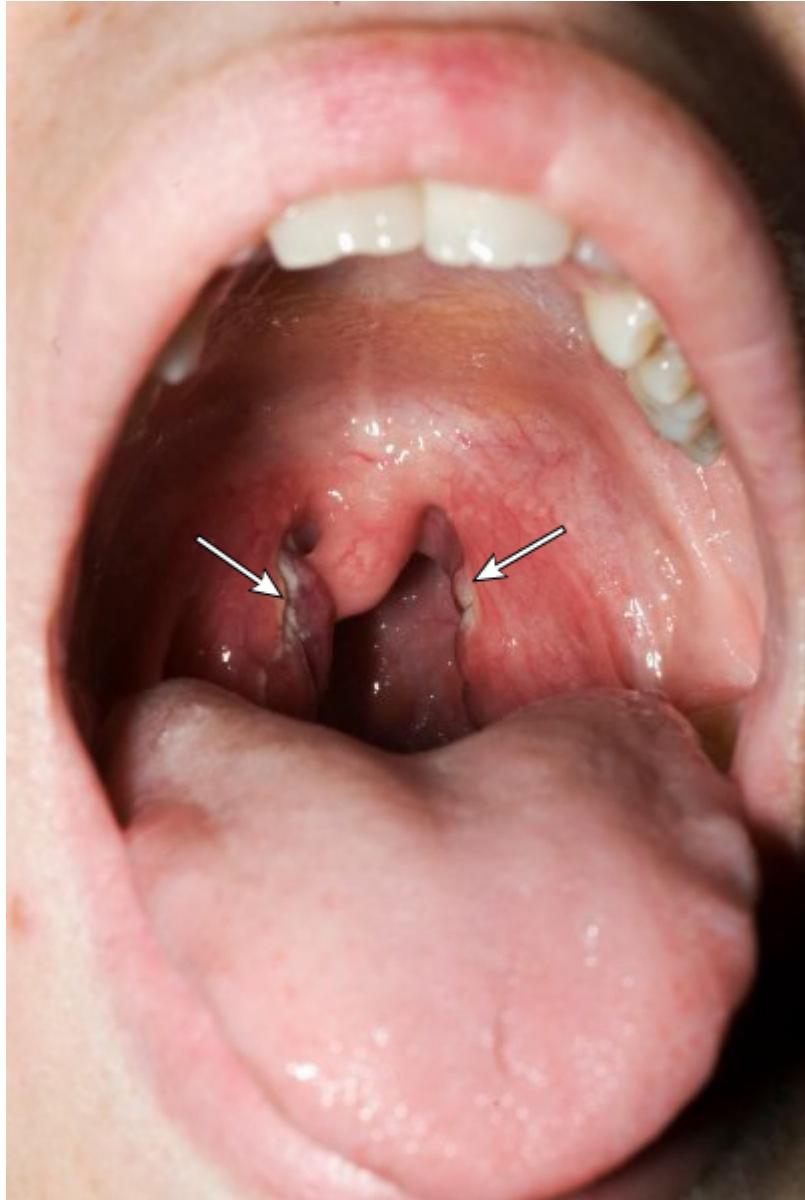
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Graphic 83682 Version 5.0

## Streptococcal pharyngitis



This patient with streptococcal pharyngitis has prominent bilateral tonsillar exudate without peritonsillar swelling.

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Graphic 115597 Version 2.0

## Scarlatiniform rash



Scarlet fever rash on the volar surface of the forearm. The scarlet fever rash first appears as tiny red bumps on the chest and abdomen that may spread all over the body. Looking like a sunburn, it feels like a rough piece of sandpaper, and lasts about two to five days.

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Graphic 109538 Version 2.0

## Strawberry tongue



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Graphic 68321 Version 4.0

## Group A streptococcal oropharyngeal infection: Definitions\*

Category	Definition and description
Active infection	<ul style="list-style-type: none"><li>▪ Symptomatic infection caused by group A <i>Streptococcus</i> (GAS).</li></ul>
Persistent infection	<ul style="list-style-type: none"><li>▪ Symptomatic infection caused by GAS that does not resolve after appropriate antibiotic treatment. (Synonymous with treatment failure.)</li></ul>
Recurrent infection	<ul style="list-style-type: none"><li>▪ A new symptomatic infection with GAS that occurs after appropriate antibiotic treatment.</li><li>▪ Recurrent infection can be caused by the same GAS serotype that caused the initial infection or by a different serotype.</li><li>▪ Recurrent infections most often occur among members of the same household or in other settings (eg, schools, daycare centers) where close contact facilitates GAS transmission.</li></ul>
Chronic carriage	<ul style="list-style-type: none"><li>▪ Asymptomatic colonization: The persistent presence of GAS in the oropharynx in the absence of symptoms or host immune response (approximately 4 to 5% in healthy adults and 2 to 20% in children).</li><li>▪ Carriage can persist for months to years.</li></ul>

\* Distinguishing among these categories is important. In general, only symptomatic GAS infection requires antibiotic treatment. Exceptions include patients with a history of acute rheumatic fever, chronic GAS carriers during outbreaks of acute rheumatic fever and/or poststreptococcal glomerulonephritis, or when GAS infections are recurring in households or other close-contact settings. Refer to UpToDate content for detailed discussion of indications for treatment of GAS pharyngitis.

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Graphic 143102 Version 1.0

## **Early-stage diphtheritic membrane on right tonsil of 26-year-old female patient**

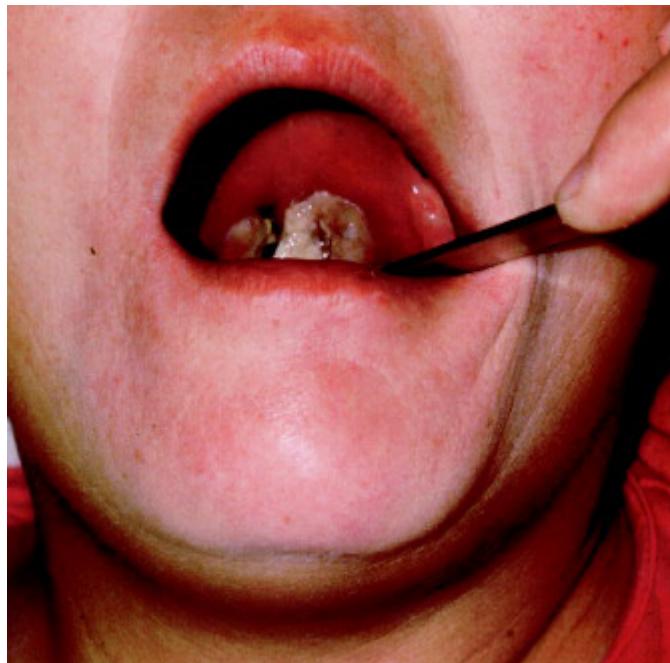


*Reproduced with permission from: Kadirova R, Kartoglu HU, Strebel PM. Clinical characteristics and management of 676 hospitalized diphtheria cases, Kyrgyz Republic, 1995. J Infect Dis 2000; 181:S110. Copyright © 2000 University of Chicago Press.*

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Graphic 52701 Version 3.0

## Diphtheritic membrane



Diphtheritic membrane extending from uvula to pharyngeal wall and neck edema in 47-year-old female patient.

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*Reproduced with permission from: Kadirova R, Kartoglu HU, Strebel PM. Clinical characteristics and management of 676 hospitalized diphtheria cases, Kyrgyz Republic, 1995. J Infect Dis 2000; 181:S110. Copyright © 2000 University of Chicago Press.*

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Graphic 51058 Version 3.0

# Risk factors for sexually transmitted infections

## Behavioral risk factors

New sex partner in past 60 days

Multiple sex partners or sex partner with multiple concurrent sex partners

No or inconsistent condom use when not in a mutually monogamous sexual partnership

Trading sex for money or drugs

Sexual contact (oral, anal, penile, or vaginal) with sex workers

Meeting anonymous partners on the internet

## Demographic risk factors

Young age (15 to 24 years old)

Men who have sex with men (MSM)

History of a prior sexually transmitted infection

Unmarried status

Lower socioeconomic status or high school education or less

Admission to correctional facility or juvenile detention center

Illicit drug use

Graphic 116705 Version 1.0

## Clinical manifestations of acute HIV infection

Features (percent)	Overall (n = 378)	Male (n = 355)	Female (n = 23)	Sexual* (n = 324)	IVDU¶ (n = 34)
Fever	75	74	83	77	50
Fatigue	68	67	78	71	50
Myalgia	49	50	26	52	29
Skin rash	48	48	48	51	21
Headache	45	45	44	47	30
Pharyngitis	40	40	48	43	18
Cervical adenopathy	39	39	39	41	27
Arthralgia	30	30	26	28	26
Night sweats	28	28	22	30	27
Diarrhea	27	27	21	28	23

This table lists the most frequent clinical findings reported among patients with acute HIV infection from five prospective cohorts.

\* Homosexual or heterosexual route of transmission.

¶ IVDU, intravenous drug use as route of transmission.

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*Reproduced with permission from: Daar ES, Pilcher CD, Hecht FM. Clinical presentation and diagnosis of primary HIV-1 infection. Curr Opin HIV AIDS 2008; 3:10. Copyright © 2008 Lippincott Williams & Wilkins.*

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Graphic 87682 Version 3.0

## Secondary syphilis



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Multiple erosions (mucous patches) are present on the tongue in this patient with secondary syphilis.

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Graphic 52729 Version 5.0

## Clinical manifestations of infectious mononucleosis

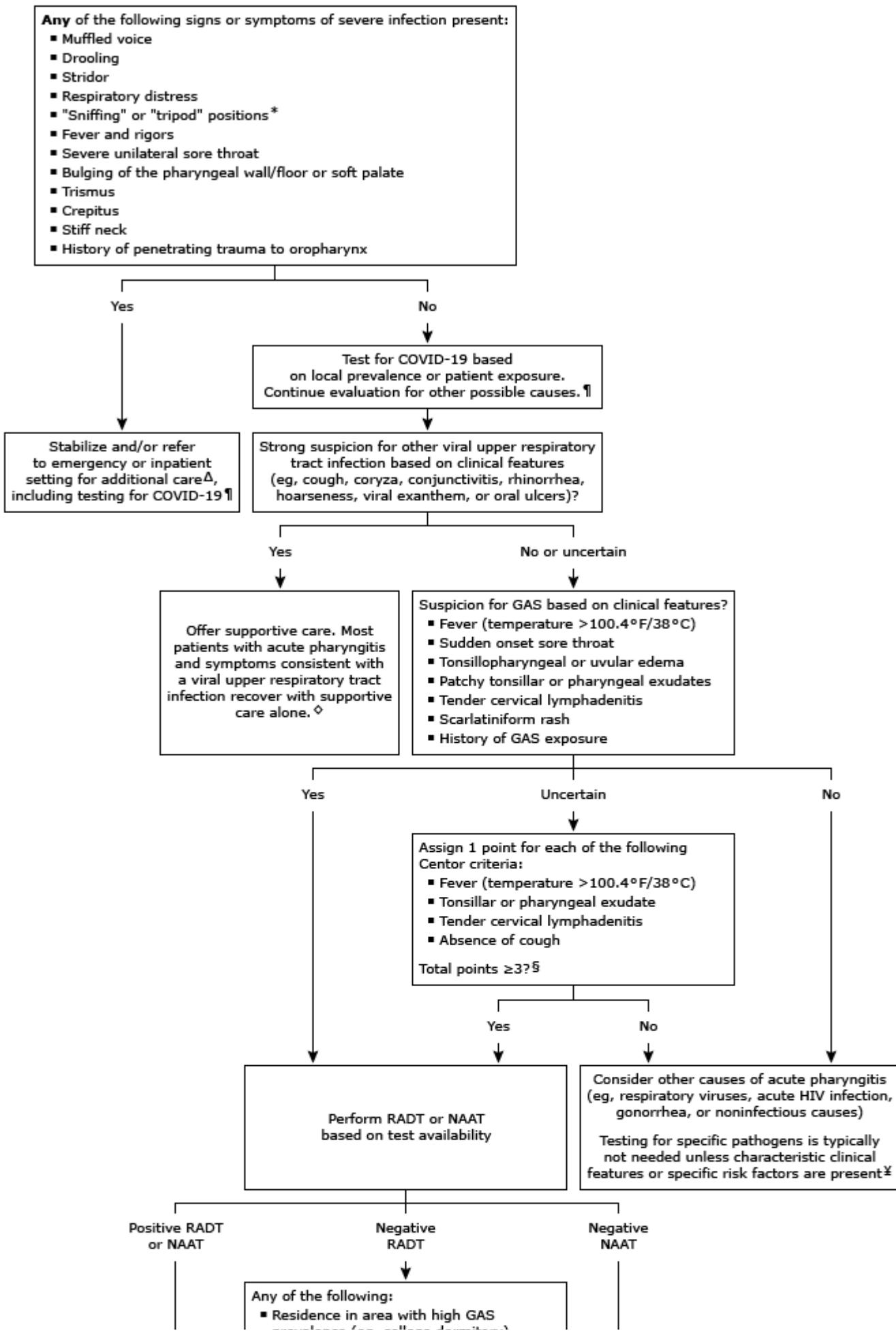
Symptoms and signs	Frequency, percent
<b>Symptoms</b>	
Malaise and fatigue	90 to 100
Sweats	80 to 95
Sore throat, dysphagia	80 to 85
Anorexia	50 to 80
Nausea	50 to 70
Headache	40 to 70
Chills	40 to 60
Cough	30 to 50
Myalgia	12 to 30
Ocular muscle pain	10 to 20
Chest pain	5 to 20
Arthralgia	5 to 10
Photophobia	5 to 10
<b>Signs</b>	
Adenopathy	100
Fever	80 to 95
Pharyngitis	65 to 85
Splenomegaly	50 to 60
Bradycardia	35 to 50
Periorbital edema	25 to 40
Palatal enanthem	25 to 35
Liver and spleen tenderness	15 to 30
Hepatomegaly	15 to 25
Rhinitis	10 to 25
Jaundice	5 to 10
Skin rash	3 to 6
Pneumonitis	<3

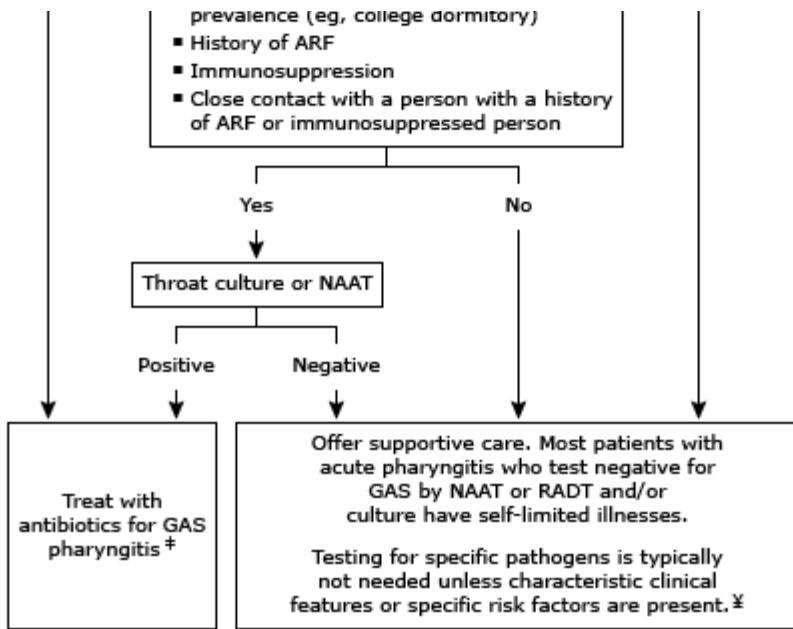
*Modified from Chervenik PA. Dis Mon 1974; 1:29.*

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Graphic 57448 Version 3.0

## **Evaluation of acute pharyngitis in adults**





All adults presenting with acute pharyngitis should have a thorough history and physical, including assessment for risk factors for acute HIV infection and sexually transmitted infections.

ARF: acute rheumatic fever; COVID-19: coronavirus disease 2019; GAS: group A *Streptococcus*; HIV: human immunodeficiency virus; NAAT: nucleic acid amplification test; RADT: rapid antigen detection test.

\* A sitting position with the trunk leaning forward, neck hyperextended, and chin thrust forward in an effort to maximize the diameter of the obstructed airway.

¶ Refer to UpToDate content on COVID-19 for additional detail on clinical features, testing, and infection control.

Δ Refer to UpToDate topics on evaluation of pharyngitis in adults, evaluation of the adult with dyspnea, and deep neck space infections.

◊ Refer to UpToDate content on symptomatic treatment of pharyngitis in adults.

§ Some practitioners test patients with Centor scores ≥2.

¥ Refer to UpToDate topic on evaluation of pharyngitis in adults.

‡ Refer to UpToDate content on treatment and prevention of streptococcal pharyngitis.

# **Warning signs for complications of pharyngitis**

## **Airway obstruction**

Muffled or "hot potato" voice

Drooling or pooling of saliva

Stridor

Respiratory distress (tachypnea, dyspnea, retractions)

"Sniffing" or "tripod" positions (positions that help maintain airway patency)

## **Deep neck space infection**

Severe unilateral sore throat

Bulging of the pharyngeal wall, soft palate, or floor of oropharynx

Neck pain or swelling, torticollis (wry neck) due to muscle spasm

Crepitus

Trismus (irritation and reflex spasm of internal pterygoid muscle)

Stiff neck

Fever and rigors

History of penetrating trauma to oropharynx

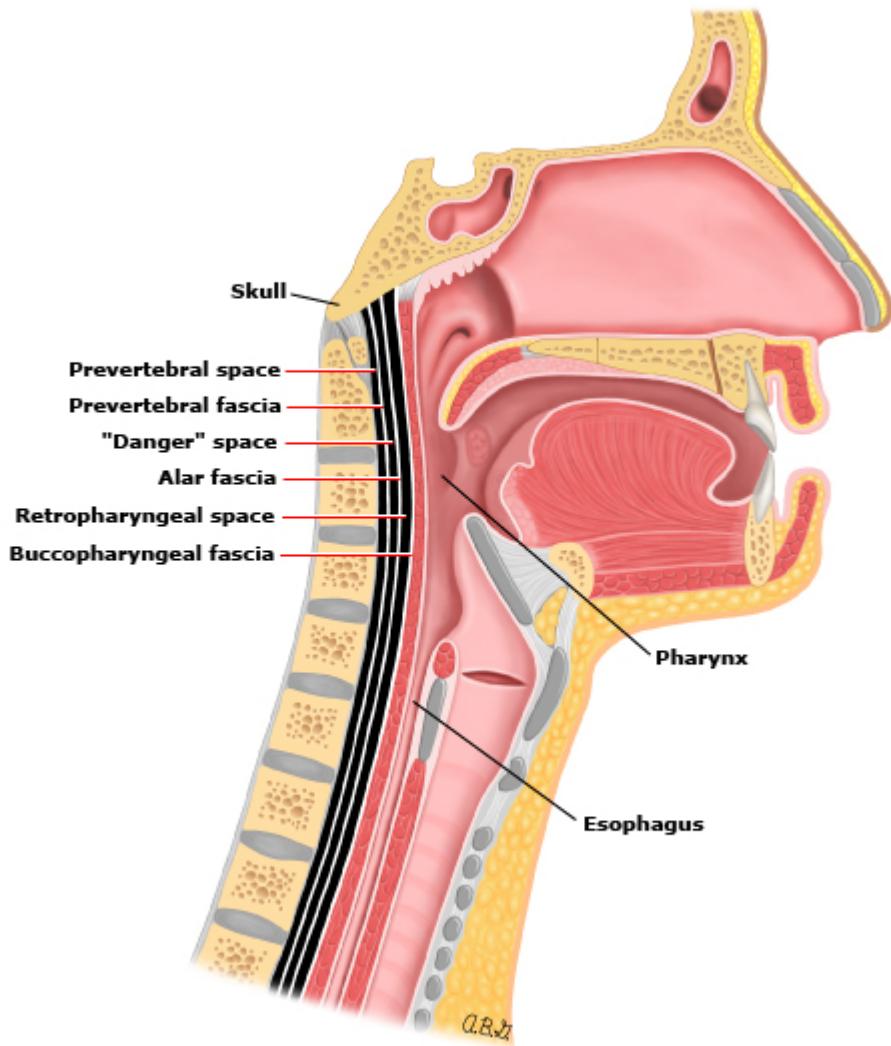
Graphic 116703 Version 1.0

## Clinical features associated with deep neck space infections and epiglottitis

Syndrome	Clinical features
Peritonsillar abscess (Quinsy)	Severe sore throat (usually unilateral), fever, ear pain, muffled voice, drooling, neck pain, and neck swelling. Trismus is common. Exam may show severely swollen or fluctuant tonsil with deviation of the uvula or bulging of the soft palate near the tonsil.
Submandibular abscess (Ludwig's angina)	Fever, rigors, mouth pain, drooling, dysphagia, and stiff neck. Floor of oropharynx may be elevated. Symmetric induration with palpable crepitus may be present in the submandibular area. Trismus is usually absent.
Retropharyngeal abscess	Severe sore throat and difficulty swallowing, often with antecedent history of penetrating trauma.
Parapharyngeal space infection	Fever, rigors, swelling below the angle of the mandible, medial bulging of the pharyngeal wall, and trismus. Dyspnea can result from swelling of epiglottis and larynx. Carotid sheath may be involved.
Suppurative jugular thrombophlebitis (Lemierre syndrome)	Persistent fever and sore throat, often despite antibiotics. Pulmonary emboli.
Epiglottitis	Sore throat (severity often out of proportion to exam), fever, muffled voice, drooling, stridor or respiratory distress, and hoarseness.

Graphic 116704 Version 3.0

## Deep neck spaces and fascial layers



The "danger" space lies behind the anatomic retropharyngeal space. It is a potential space that provides a path for retropharyngeal infections to extend into the mediastinum.

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Graphic 74998 Version 11.0

## Clinical features of group A *Streptococcus* pharyngitis and viral pharyngitis

GAS pharyngitis	Viral pharyngitis
Sudden onset of sore throat	Cough (often with fever and malaise)
Fever	Nasal congestion
Tonsillopharyngeal and/or uvular edema	Coryza
Patchy tonsillar pharyngeal exudates	Conjunctivitis
Anterior cervical adenitis (tender lymph nodes)	Hoarseness
Scarlatiniform skin rash (Scarlet fever)	Oral ulcers
History of GAS exposure	Viral exanthema

GAS: group A *Streptococcus*.

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Graphic 116706 Version 1.0

## Centor criteria for group A streptococcal pharyngitis in adults

### Centor criteria

Tonsillar exudates

Tender anterior cervical lymphadenopathy

Fever

Absence of cough

The Centor criteria are used to determine the likelihood of GAS in adults. One point is given for each criterion; the likelihood of GAS pharyngitis increases as total points rise. We generally test for GAS in patients with  $\geq 3$  Centor criteria; patients with Centor criteria  $< 3$  are unlikely to have GAS pharyngitis and generally do not need GAS testing. Because the Centor criteria have relatively low sensitivity for the diagnosis of streptococcal pharyngitis, use of these criteria **do not replace** testing for GAS and **should not** be used to determine the need for antibiotic therapy.

GAS: group A *Streptococcus*.

Graphic 116709 Version 4.0

# **The five Ps: Partners, prevention of pregnancy, protection from STIs, practices, and past history of STIs**

## **Partners**

Are you currently having sex of any kind?

What is the gender(s) of your partner(s)?

## **Practices**

To understand any risks for STIs, I need to ask more specific questions about the kind of sex you have had recently.

What kind of sexual contact do you have or have you had?

- Do you have vaginal sex, meaning "penis in vagina" sex?
- Do you have anal sex, meaning "penis in rectum/anus" sex?
- Do you have oral sex, meaning "mouth on penis/vagina"?

## **Protection from STIs**

Do you and your partner(s) discuss prevention of STIs and HIV?

Do you and your partner(s) discuss getting tested?

For condoms:

- What protection methods do you use? In what situations do you use condoms?

## **Past history of STIs**

Have you ever been tested for STIs and HIV?

Have you ever been diagnosed with an STI in the past?

Have any of your partners had an STI?

## **Additional questions for identifying HIV and viral hepatitis risk:**

- Have you or any of your partner(s) ever injected drugs?
- Is there anything about your sexual health that you have questions about?

## **Pregnancy intention**

Do you think you would like to have (more) children in the future?

How important is it to you to prevent pregnancy (until then)?

Are you or your partner using contraception or practicing any form of birth control?

Would you like to talk about ways to prevent pregnancy?

STI: sexually transmitted infection.

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*Adapted from: Workowski KA, Bachmann LH, Chan PA, et al. Sexually transmitted infections treatment guidelines, 2021. MMWR Recomm Rep 2021; 70:3.*

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Graphic 61677 Version 9.0

## STI screening recommendations by sex and population

<b>Sex</b>	<b>Population</b>	<b>Routine screening recommendation</b>	<b>Screening frequency</b>	<b>Additional screening recommendations and comments</b>
<b>Females</b>	Age <25 years	Genital chlamydia*	Annually	If at increased risk <sup>¶</sup> , additionally screen for: <ul style="list-style-type: none"><li>▪ Syphilis</li><li>▪ Trichomoniasis</li><li>▪ HBV</li></ul>
		Genital gonorrhea*	Annually	
		HIV	At least once	
		HCV	At least once (if age $\geq 18$ years) <sup>Δ</sup>	
	Age $\geq 25$ years	HIV	At least once	If at increased risk <sup>¶</sup> , additionally screen for: <ul style="list-style-type: none"><li>▪ Genital chlamydia and gonorrhea*</li><li>▪ Syphilis</li><li>▪ Trichomoniasis</li><li>▪ HBV</li></ul>
		HCV	At least once <sup>Δ</sup>	
	Pregnant	Genital chlamydia*	First trimester (if <25 years or at increased risk <sup>¶</sup> )	Repeat screening for these infections in third trimester if at increased risk.  Additional screening at first prenatal visit: <ul style="list-style-type: none"><li>▪ HCV for those at risk (or if <math>\geq 18</math> years with no prior screening)<sup>Δ</sup></li><li>▪ Trichomoniasis for those with HIV</li></ul>
		Genital gonorrhea*	First trimester (if <25 years or at increased risk <sup>¶</sup> )	
		Syphilis	First trimester	
		HIV	First trimester	
		HBV	First trimester	
With HIV infection	Genital chlamydia*	Annually		
	Genital gonorrhea*	Annually		

		Genital trichomoniasis	Annually	
		Syphilis	Annually	
		HBV	First visit	
		HCV	First visit	
	WSW and WSWM	WSW and WSWM should not be assumed to be at lower risk for STIs on the basis of their sexual orientation. Screening for cervical cancer and STIs should be conducted according to guidelines for women, based on an open discussion of sexual and behavioral risk factors.		
<b>Males</b>	MSW without HIV infection	HIV	At least once	If at increased risk <sup>◊</sup> , additionally screen for: <ul style="list-style-type: none"> <li>▪ Genital chlamydia and gonorrhea</li> <li>▪ Syphilis</li> <li>▪ HBV</li> </ul> Targeted screening venues for chlamydia include adolescent clinics, STI clinics, and correctional facilities.
		HCV	At least once (if age $\geq$ 18 years) <sup>Δ</sup>	
MSM without HIV infection		Genital chlamydia	At least annually	More frequent screening (every three months) for chlamydia, gonorrhea, and syphilis is recommended in those with risk factors. More frequent screening for HIV and HCV may also be warranted. <sup>§</sup>
		Rectal chlamydia (if exposed)	At least annually	
		Genital gonorrhea	At least annually	
		Rectal gonorrhea (if exposed)	At least annually	
		Pharyngeal gonorrhea (if	At least annually	

	exposed)		
	Syphilis	At least annually	
	HIV	At least annually	
	HAV	First visit	
	HBV	First visit	
	HCV	At least once	
MSW with HIV infection	Genital chlamydia	Annually	
	Genital gonorrhea	Annually	
	Syphilis	Annually	
	HBV	First visit	
	HCV	First visit	
MSM with HIV infection	Genital chlamydia	At least annually	More frequent screening (every three months) for chlamydia, gonorrhea, and syphilis is recommended in those with risk factors. More frequent screening for HCV may also be warranted. <sup>§</sup>
	Rectal chlamydia (if exposed)	At least annually	
	Genital gonorrhea	At least annually	
	Rectal gonorrhea (if exposed)	At least annually	
	Pharyngeal gonorrhea (if exposed)	At least annually	
	Syphilis	At least annually	
	HAV	First visit	
	HBV	First visit	
	HCV	At least annually	
<b>Transgender and gender-diverse individuals</b>	Screening for STIs should be based on an individual's anatomy and sexual practices. Recommendations for genital gonorrhea, chlamydia and cervical cancer screening in cisgender women should be extended to all transgender men and gender-diverse individuals with a cervix. Screening for other STIs should be based on risk factors and exposures.		

STI: sexually transmitted infection; HBV: hepatitis B virus; HCV: hepatitis C virus; MSW: men who have sex only with women; MSM: men who have sex with men; HAV: hepatitis A virus; WSW: women who have sex with women; WSWM: women who have sex with women and men.

\* Screening for nongenital infections in females (eg, rectal chlamydial infection, pharyngeal and rectal gonococcal infection) can be considered based on reported sexual behaviors and exposure, via shared clinical decision-making between the patient and the provider.

¶ Factors conferring increased risk for gonorrhea, chlamydia, and trichomoniasis in females include transactional sex, new sex partner, multiple sex partners, a sex partner with concurrent partners, or a sex partner with an STI. Increased risk for syphilis may be based on geography, race/ethnicity, history of incarceration, or transactional sex work. STI screening may also be considered in high-prevalence settings (eg, STI clinic or correctional facility).

Δ All adults 18 years of age or older should be screened for HCV at least once, except in settings where the HCV positivity is <0.1%.

◊ Factors conferring increased risk for gonorrhea and chlamydia in MSW include an infection in the preceding 24 months. Screening for chlamydia in young males can be considered in high-prevalence clinical settings (adolescent clinics, correctional facilities, STI/sexual health clinic). Increased risk factors for syphilis may be based on geography, race/ethnicity, history of incarceration, transactional sex work, or age <29 years.

§ Increased risk factors for gonorrhea, chlamydia, syphilis, and HIV among MSM include multiple or anonymous partners; intravenous drug use; sex in conjunction with illicit drug use, including methamphetamines; and sex partners who engage in these activities. Increased risk factors for hepatitis C infection among MSM include HIV infection, high community HCV prevalence and incidence, high-risk sexual behaviors, and concomitant ulcerative STIs or STI-related proctitis.

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*Adapted from: California Department of Public Health, Sexually Transmitted Diseases Branch. California STD screening recommendations, 2021. Available at: <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/California-STI-Screening-Recommendations.aspx> (Accessed on January 24, 2023).*

*Additional information from:*

1. Workowski KA, Bachmann LH, Chan PA, et al. *Sexually Transmitted Infections Treatment Guidelines, 2021. MMWR Recomm Rep* 2021; 70:1.
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