Sentara® Health Plans

**SENTARA HEALTH PLANS CLINICAL PRACTICE GUIDELINE:**

# MANAGEMENT OF PHARYNGITIS

**https://www.cdc.gov/groupastrep/diseases-hcp/strep-throat.html**

Guideline History

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|---|---|
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# Pharyngitis (Strep Throat)

Many viruses and bacteria can cause acute pharyngitis. *Streptococcus pyogenes*, which are also called group A *Streptococcus* (group A strep), cause acute pharyngitis known as strep throat.

## Etiology

Group A strep pharyngitis is an infection of the oropharynx caused by *S. pyogenes*. *S. pyogenes* are gram-positive cocci that grow in chains (see figure 1). They exhibit *β*-hemolysis (complete hemolysis) when grown on blood agar plates. They belong to group A in the Lancefield classification system for β-hemolytic *Streptococcus*, and thus are called group A streptococci.

## Clinical features

Group A strep pharyngitis is an acute pharyngitis that commonly presents with

- Sudden-onset of sore throat
- Pain with swallowing
- Fever

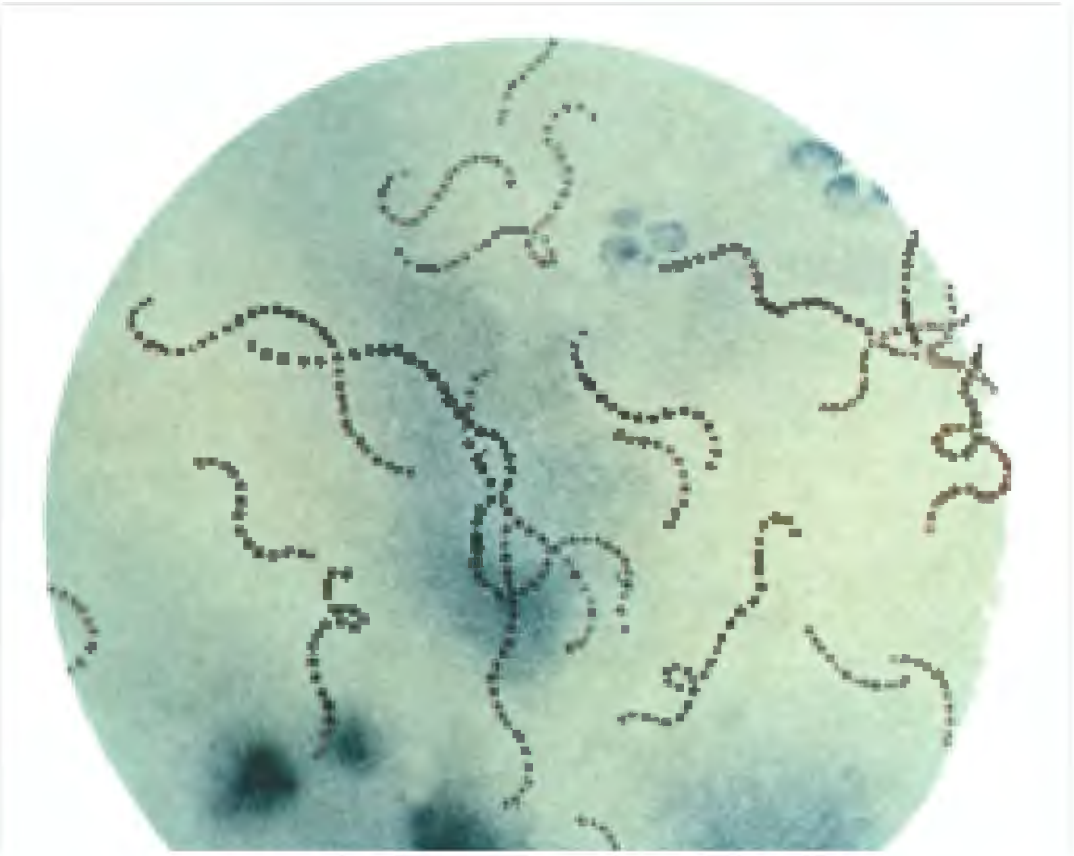
Other symptoms may include headache, abdominal pain, nausea, and vomiting — especially among children. Patients with group A strep pharyngitis typically do not have cough, rhinorrhea, hoarseness, oral ulcers, or conjunctivitis. These symptoms strongly suggest a viral etiology.

On clinical examination, patients with group A strep pharyngitis usually have

- Pharyngeal and tonsillar erythema
- Tonsillar hypertrophy with or without exudates
- Palatal petechiae
- Anterior cervical lymphadenopathy

Patients with group A strep pharyngitis may also present with a scarlatiniform rash. The resulting syndrome is called scarlet fever or scarlatina.

Respiratory disease caused by group A strep infection in children younger than 3 years old rarely manifests as acute pharyngitis. These children usually have mucopurulent rhinitis followed by fever, irritability, and anorexia (called "streptococcal fever" or "streptococcosis"). In contrast to typical acute group A strep pharyngitis, this presentation in young children is subacute and high fever is rare.



## Transmission

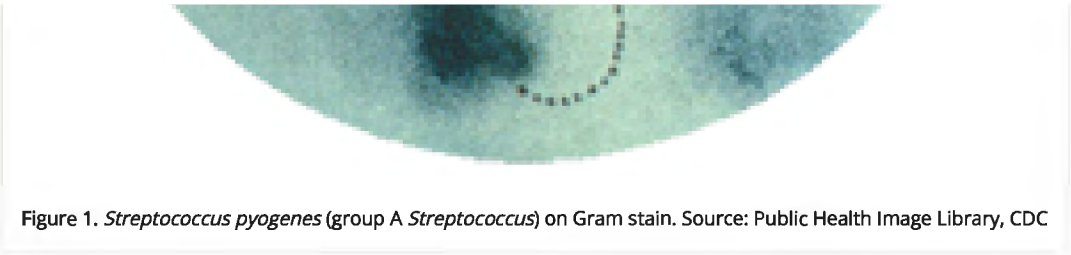


Figure 1. *Streptococcus pyogenes* (group A *Streptococcus*) on Gram stain. Source: Public Health Image Library, CDC

Group A strep pharyngitis is most commonly spread through direct person-to-person transmission. Typically, transmission occurs through respiratory droplets but can also occur through contact with secretions, such as saliva, wound discharge, or nasal secretions, from an infected person. People with group A strep pharyngitis are much more likely to transmit the bacteria to others than asymptomatic pharyngeal carriers. Crowded conditions — such as those in schools, daycare centers, or military training facilities — facilitate transmission. Although rare, spread of group A strep infections may also occur via food. Foodborne outbreaks of pharyngitis have occurred due to improper food handling. Environmental transmission via surfaces and fomites was historically not thought to occur. However, evidence from outbreak investigations indicate that environmental transmission of GAS may be possible, although it is likely a less common route of transmission.

Humans are the primary reservoir for group A strep. There is no evidence to indicate that pets can transmit the bacteria to humans.

Treatment with an appropriate antibiotic for 12 hours or longer generally eliminates a person's ability to transmit group A strep. People with group A strep pharyngitis or scarlet fever should stay home from work, school, or daycare until:

- They are afebrile
  AND
- 12 hours after starting appropriate antibiotic therapy

## Incubation period

The incubation period of group A strep pharyngitis is approximately 2 to 5 days.

## Risk factors

Group A strep pharyngitis can occur in people of all ages. It is most common among children 5 through 15 years of age. It is rare in children younger than 3 years of age.

The most common risk factor is close contact with another person with group A strep pharyngitis. Adults at increased risk for group A strep pharyngitis include:

- Parents of school-aged children
- Adults who are often in contact with children

Crowding, such as found in schools, military training facilities, and daycare centers, increases the risk of disease spread.

## Diagnosis and testing

The differential diagnosis of acute pharyngitis includes multiple viral and bacterial pathogens. Viruses are the most common cause of pharyngitis in all age groups. Experts estimate that group A strep, the most common bacterial cause, causes 20% to 30% of pharyngitis episodes in children. In comparison, experts estimate it causes approximately 5% to 15% of pharyngitis infections in adults.

### Viruses Cause Most Pharyngitis

Group A *Streptococcus* causes:

- 20% to 30% of sore throats in children
- 5% to 15% of sore throats in adults

History and clinical examination can be used to diagnose viral pharyngitis when clear viral symptoms are present. Viral symptoms include:

- Cough
- Rhinorrhea
- Hoarseness
- Oral ulcers
- Conjunctivitis

Patients with clear viral symptoms do not need testing for group A strep. However, clinicians cannot use clinical examination to differentiate viral and group A strep pharyngitis in the absence of viral symptoms.

Clinicians need to use either a rapid antigen detection test (RADT) or throat culture to confirm group A strep pharyngitis. RADTs have high specificity for group A strep but varying sensitivities when compared to throat culture. Throat culture is the gold standard diagnostic test.

See the resources section for specific diagnosis guidelines for adult and pediatric patients[1,2,3].

## Special considerations

Clinicians should confirm group A strep pharyngitis in children older than 3 years of age to appropriately guide treatment decisions. Giving antibiotics to children with confirmed group A strep pharyngitis can reduce their risk of developing sequela (acute rheumatic fever). Testing for group A strep pharyngitis is not routinely indicated for:

- Children younger than 3 years of age
- Adults

Acute rheumatic fever is very rare in those age groups.

Clinicians can use a positive RADT as confirmation of group A strep pharyngitis in children. However, clinicians should follow up a negative RADT in a child with symptoms of pharyngitis with a throat culture. Clinicians should have a mechanism to contact the family and initiate antibiotics if the back-up throat culture is positive.

## Treatment

The use of a recommended antibiotic regimen to treat group A strep pharyngitis:

- Shortens the duration of symptoms
- Reduces the likelihood of transmission to family members, classmates, and other close contacts
- Prevents the development of complications, including acute rheumatic fever

When left untreated, the symptoms of group A strep pharyngitis are usually self-limited. However, acute rheumatic fever and suppurative complications (e.g., peritonsillar abscess, mastoiditis) are more likely to occur after an untreated infection. Patients, regardless of age, who have a positive RADT or throat culture need antibiotics. Clinicians should not treat viral pharyngitis with antibiotics.

Penicillin or amoxicillin is the antibiotic of choice to treat group A strep pharyngitis. There has never been a report of a clinical isolate of group A strep that is resistant to penicillin. However, resistance to azithromycin and clarithromycin is common in some communities. For patients with a penicillin allergy, recommended regimens include narrow-spectrum cephalosporins (cephalexin, cefadroxil), clindamycin, azithromycin, and clarithromycin.

See the resources section for specific treatment guidelines for adult and pediatric patients[1,2,3].

### Table: Antibiotic regimens recommended for group A streptococcal pharyngitis

| Drug, Route | Dose or Dosage | Duration or Quantity |
|---|---|---|
| For individuals without penicillin allergy | | |
| Penicillin V, oral | Children: 250 mg twice daily or 3 times daily; adolescents and adults: 250 mg 4 times daily or 500 mg twice daily | 10 days |
| Amoxicillin, oral | 50 mg/kg once daily (max = 1000 mg); alternate: 25 mg/kg (max = 500 mg) twice daily | 10 days |
| Benzathine penicillin G, intramuscular | <27 kg: 600 000 U; ≥27 kg: 1 200 000 U | 1 dose |
| For individuals with penicillin allergy | | |
| Cephalexin,[a] oral | 20 mg/kg/dose twice daily (max = 500 mg/dose) | 10 days |
| Cefadroxil,[a] oral | 30 mg/kg once daily (max = 1 g) | 10 days |
| Clindamycin, oral | 7 mg/kg/dose 3 times daily (max = 300 mg/dose) | 10 days |
| Azithromycin,[b] oral | 12 mg/kg once (max = 500 mg), then 6 mg/kg (max=250 mg) once daily for the next 4 days | 5 days |
| Clarithromycin[b], oral | 7.5 mg/kg/dose twice daily (max = 250 mg/dose) | 10 days |

Abbreviation: Max, maximum.

[a] Avoid in individuals with immediate type hypersensitivity to penicillin.

[b] Resistance of group A strep to these agents is well-known and varies geographically and temporally.

From: Shulman ST, Bisno AL, Clegg HW, Gerber MA, Kaplan EL, Lee G, et al. Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America. *Clin Infect Dis.* 2012;55(10):e86–e102, Table 2 (adapted) and it's erratum (*Clin Infect Dis.* 2014;58(10):1496).

Note: If you are interested in reusing this table, first obtain permission from the journal; request by emailing journals.permissions@oup.com.

## Carriage

Asymptomatic group A strep carriers usually do not require treatment. Carriers have positive throat cultures or are RADT positive, but do not have clinical symptoms or an immunologic response to group A strep antigens on laboratory testing. Compared to people with symptomatic pharyngitis, carriers are much less likely to transmit group A strep to others. Carriers are also very unlikely to develop suppurative or nonsuppurative complications.

Some people with recurrent episodes of acute pharyngitis with evidence of group A strep by RADT or throat culture actually have recurrent episodes of viral pharyngitis with concurrent streptococcal carriage. Repeated use of antibiotics among this subset of patients is unnecessary. However, identifying carriers clinically or by laboratory methods can be very difficult. The Infectious Diseases Society of America guidelines and Red Book address determining someone if is a carrier and their management.[1,2]

## Prognosis and complications

Rarely, suppurative and nonsuppurative complications can occur after group A strep pharyngitis. Suppurative complications result from the spread of group A strep from the pharynx to adjacent structures. They can include:

- Peritonsillar abscess
- Retropharyngeal abscess
- Cervical lymphadenitis
- Mastoiditis

Other focal infections or sepsis are even less common.

Acute rheumatic fever is a nonsuppurative sequelae of group A strep pharyngitis. Post-streptococcal glomerulonephritis is a nonsuppurative sequelae of group A strep pharyngitis or skin infections. These complications occur after the original infection resolves and involve sites distant to the initial group A strep infection site. They are thought to be the result of the immune response and not of direct group A strep infection.

## Prevention

Good hand hygiene and respiratory etiquette can reduce the spread of all types of group A strep infection. Hand hygiene is especially important after coughing and sneezing and before preparing foods or eating. Good respiratory etiquette involves covering your cough or sneeze. Treating an infected person with an antibiotic for 12 hours or longer generally eliminates their ability to transmit the bacteria. Thus, people with group A strep pharyngitis should stay home from work, school, or daycare until:

- They are afebrile
  AND
- At least 12 hours after starting appropriate antibiotic therapy

## Epidemiology and surveillance

Humans are the only reservoir for group A strep. It is most common among children 5 through 15 years of age. It is rare in children younger than 3 years of age. In the United States, group A strep pharyngitis is most common during the winter and spring.

CDC does not track the incidence of group A strep pharyngitis or other non-invasive group A strep infections. CDC tracks invasive group A strep infections through the Active Bacterial Core surveillance (ABCs) program. For information on the incidence of invasive group A strep infections, please visit the ABCs Surveillance Reports website.

### References


1. Shulman ST, Bisno AL, Clegg HW, Gerber MA, Kaplan EL, Lee G, et al. Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. *Clin Infect Dis.* 2012;55(10):1279–82.
2. Shulman ST, Bisno AL, Clegg HW, Gerber MA, Kaplan EL, Lee G, et al. Erratum to clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. *Clin Infect Dis.* 2014;58(10):1496.
3. Committee on Infectious Diseases. Group A streptococcal infections. In Kimberlin DW, Brady MT, Jackson MA, Long SS, editors. 31st ed. Red Book: 2018 Report of the Committee on Infectious Diseases. Elk Grove Village (IL): *American Academy of Pediatrics*; 2018:748–62.

4. Gerber MA, Baltimore RS, Eaton CB, Gewitz M, Rowley AH, Shulman ST, et al. Prevention of rheumatic fever and diagnosis and treatment of acute streptococcal pharyngitis: A scientific statement from the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee of the Council on Cardiovascular Disease in the Young, the Interdisciplinary Council on Functional Genomics and Translational Biology, and the Interdisciplinary Council on Quality of Care and Outcomes Research: Endorsed by the American Academy of Pediatrics . *Circulation*. 2009;119(11):1541–51.

## Related resources

Active Bacterial Core Surveillance

Information about PANS/PANDAS

Strep Throat: Information for Everyone

Last Reviewed: June 27, 2022