

DEFINITION

Inflammation or infection of mucous membranes of the pharynx (may also affect the palatine tonsils).

Pharyngitis and tonsillitis may occur independently; however, they often co-occur, sharing a common etiology, clinical course, and treatment regimen.

IMMEDIATE CONSULTATION REQUIRED IN THE FOLLOWING SITUATIONS

- Toxic appearing child: Toxic appearing infants and children may be pale or cyanotic and are often lethargic or inconsolably irritable. In addition, they may have tachypnea and tachycardia with poor capillary refill.
- Clients with oliguria associated with pharyngitis
- Infectious mononucleosis is suspected with the following:
 - Generalized symmetric lymphadenopathy
 - Abdominal pain, splenomegaly, or hepatomegaly
 - Jaundice
 - Nausea and anorexia without vomiting
 - Fatigue
 - Young adult or teenager
 - Urticarial or maculopapular rash after beta lactum antibiotics are given
- Any signs of airway obstruction such as dyspnea or dysphagia or stridor
- Muffled or "hot potato" voice
- Trismus (spasm of jaw muscles)
- Odynophagia (pain on swallowing)
- Neck pain
- Neck swelling
- Drooling
- High fever, rigor, and night sweats
- Periorbital or facial edema
- New onset hypertension
- Dehydration
- Peritonsillar abscess or peritonsillar cellulitis
- Valvular heart disease

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CAUSES

Viral infections are the most common cause of pharyngotonsillitis in younger children; bacterial pharyngotonsillitis is very rare in children < 3 years old, but its prevalence increases with age.

Infectious

- Viruses (e.g., rhinovirus, adenovirus, parainfluenza, coxsackievirus, Epstein-Barr virus, herpes virus, coronavirus, influenza A and B, parainfluenza, cytomegalovirus, HIV)
- Bacteria (e.g., most common group A β -hemolytic streptococcus (GAS), group C and group G streptococci, Chlamydia, *Corynebacterium diphtheriae*, *Haemophilus influenzae*, *Neisseria gonorrhoea*, *Acanobacterium hemolyticum*, *Francisella tularensis*, *Yersinia pestis*, mixed anaerobes, *Mycoplasma pneumoniae*)
- Fungi (e.g., Candida); rare except in immunocompromised clients (e.g., those with HIV/AIDS or using inhaled steroids)

Noninfectious

- Allergic rhinitis
- Sinusitis with postnasal drip
- Mouth breathing
- Trauma
- Gastroesophageal reflux disease (GERD)

PREDISPOSING AND RISK FACTORS

- Contact with a person with upper respiratory tract infection (URTI)
- Crowded living quarters
- Immunocompromised clients
- Fatigue
- Smoking
- Poor nutrition
- Excess consumption of alcohol
- Oral sex
- Diabetes mellitus or use of steroids (oral or inhaled)
- More common in fall and winter

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HISTORY

Bacterial

- Abrupt onset of sore throat duration usually < 3 days
- Pain on swallowing
- Pain in the throat
- Halitosis
- Myalgia
- Absence of cough
- Fever or chills or flushed
- Malaise
- Skin rash may be present
- Headache
- Anorexia
- Nausea
- Usual age group 5-15 years of age
- Winter or early spring
- Exposure to GAS
- Vomiting
- Abdominal pain

Viral

- Slow, progressive onset of sore throat
- Mild malaise
- Cough
- Nasal congestion and rhinorrhea

Noninfectious

- Slow, progressive onset of sore throat
- Mild malaise
- Cough
- Persistent, recurrent
- Pain on swallowing
- Unlikely to have runny nose, cough, conjunctivitis, hoarseness, diarrhea, viral exanthem

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PHYSICAL FINDINGS

Bacterial

- Fever
- Tachycardia
- Petechiae on soft palate
- Swollen uvula
- Client may appear acutely ill
- Posterior pharynx red and swollen
- Tonsils enlarged, may be asymmetric
- Purulent exudate may be present
- Tonsillar and anterior cervical nodes enlarged and tender
- Rash (scarlatiniform in GAS infection)
- GAS is less likely if otalgia and cough present

Viral

- Temperature may be elevated
- Posterior pharynx red and swollen
- Purulent exudate may be present. Tonsillar exudate similar to that occurring with bacterial infection may be present, particularly in adenovirus pharyngotonsillitis.
- Tonsillar and cervical nodes may be enlarged and tender
- Petechiae on palate (in mononucleosis)
- Vesicles and ulcers may be present with coxsackievirus infection (e.g., hand, foot, and mouth ulcers occur with coxsackievirus A-16 infection [usually in the area of the soft palate]) or herpes infection (usually in the anterior portion of the mouth).

Noninfectious

- Posterior pharynx red and swollen
- Tonsillar and anterior cervical nodes may be enlarged and tender
- Exudate may be present

DIFFERENTIAL DIAGNOSIS

- Distinguish probable bacterial from viral infection
- Infectious mononucleosis
- Sexually transmitted infection in those who are sexually active (for chronic pharyngitis, investigate sexual practices)
- Vincent's angina (necrotic tonsillar ulcers)

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- Epiglottitis
- Distinguish reactive inflammation from an underlying disorder (see "Causes")

COMPLICATIONS

Bacterial Pharyngitis

Complications occur as a result of body's immune response to GAS.

Evidence is unclear whether antibiotic use can prevent these complications:

- Glomerulonephritis (GAS only)
- Reactive arthritis
- Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS)
 - PANDAS is a recently recognized non-suppurative complication that appears to be more common than rheumatic fever or glomerulonephritis.
 - Diagnostic criteria are:
 - Presence of obsessive compulsive disorder
 - Pediatric onset, usually between 3-12 years of age
 - Abrupt symptom onset and/or episodic course of symptom severity
 - Temporal association between symptom exacerbation and GAS
 - Presence of neurologic abnormalities during periods of symptom exacerbation

Complications related to streptococcal infections prevented by appropriate antibiotic use:

- Peritonsillar abscess
- Peritonsillar cellulitis
- Sinusitis
- Acute otitis media
- Mastoiditis
- Parapharyngeal and retropharyngeal abscess
- Suppurative cervical adenitis
- Meningitis
- Scarlet fever
- Infective endocarditis

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- Pneumonia
- Bacteremia or streptococcal toxic shock syndrome
- Rheumatic fever (GAS only) - very rare in Saskatchewan

Viral Pharyngitis

- Secondary bacterial infection

Often resolves without any complications

INVESTIGATIONS AND DIAGNOSTIC TESTS

- Rapid Strep test if available (see "The Modified Centor (Sore Throat) Score" for indications to swab).
- Swab the throat for culture when indicated (see "The Modified Centor (Sore Throat) Score").

MAKING THE DIAGNOSIS

It is often impossible to distinguish clinically between bacterial and viral pharyngitis. See the clinical tool "The Modified Centor (Sore Throat) Score" to help decide whether a client has a GAS throat infection and needs antibiotics.

Testing and treatment with antibiotics are usually not needed for children with acute pharyngitis with features that strongly suggest viral etiology. These are:

- Conjunctivitis
- Coryza or rhinorrhea
- Anterior stomatitis and discrete oral ulcers
- Cough
- Hoarseness
- Diarrhea
- Viral exanthem or enanthem

Presence of tonsillar exudate, tender anterior cervical lymphadenopathy or lymphadenitis, history of fever, and absence of cough increases the probability of GAS.

The Modified Centor (Sore Throat) Score

In children, the majority of sore throats are caused by viral infections. In an effort to assess the probability of diagnosing GAS pharyngitis in a client presenting with a sore

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throat, a number of tools have been developed. In a primary care setting, the Modified Centor (Sore Throat) Score provides an evidenced-based clinical decision rule for all age groups.

Step 1

Determine the client's total Modified Centor (Sore Throat) Score by assigning points using the following criteria.

Criteria	Score
Temperature > 38°C oral	1
Absence of cough	1
Swollen, tender anterior cervical nodes	1
Tonsillar exudate or swelling	1
Client's age <ul style="list-style-type: none"> • 3-14 years of age • 15-44 years of age 	<ul style="list-style-type: none"> • 1 • 0

Step 2

Choose the appropriate management according to the total score.

Total Score	Management
0 to 1	No culture/Rapid Strep test or antibiotics needed
2 to 3	<p>If Rapid Strep test is available:</p> <ul style="list-style-type: none"> • If result is negative: perform throat culture and wait for results. • If result is positive: treat with antibiotics. No need for throat culture to back up diagnosis. <p>If no Rapid Strep test is available: perform culture; no antibiotics unless culture returns positive.</p>
4 to 5	Culture and consider empiric antibiotic therapy on clinical grounds until culture result available.

Note. Adapted from *Anti-infective guidelines for community-acquired infections*, p. 8, by Anti-infective Review Panel, 2013, Toronto, ON: MUMS Guideline Clearinghouse.

The Modified Centor (Sore Throat) Score is invalid in:

- any community in which an outbreak or epidemic of GAS pharyngitis is occurring and should *not* be applied in this type of situation.
- clients with a history of rheumatic fever or valvular heart disease or who are immunosuppressed.

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- Eradicate infection
- Prevent complications
- Prevent spread of GAS to contacts
- Provide appropriate education for the management of viral pharyngitis
- Avoid unnecessary use of antibiotics

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Appropriate Consultation

Consult a physician/RN(NP) for all situations in the “Immediate Consultation Required in the Following Situations” section above, and if:

- the client has significant dysphagia or dyspnea (signaling obstruction of the upper airways).
- there is concern about an underlying pathology.
- the client is unlikely to complete the course of oral antibiotics and there is need to discuss use of an injectable antibiotic.
- the client is taking a disease-modifying anti-rheumatic drug (DMARD) or carbimazole.
- the client is immunocompromised (e.g., leukemia, aplastic anemia, asplenia, HIV/AIDS or is receiving chemotherapy).

Non-Pharmacological Interventions

- Bed rest during febrile phase
- Adequate oral intake of fluids (6-8 glasses of fluid per day)
- Avoidance of irritants (e.g., smoke)
- Gargling with warm saline several times a day

Pharmacological Interventions

For pain and fever, consider giving one of the following around the clock:

- Acetaminophen (Tylenol) 15 mg/kg/dose orally q6h prn (maximum dose 75 mg/kg/day)
- Or
- Ibuprofen (Motrin) 10 mg/kg/dose orally q6-8h (maximum dose 40 mg/kg/day)

Antibiotics should not be prescribed to:

- secure symptomatic relief.
- prevent suppurative complications.
- treat recurrent non-streptococcal sore throat.
- prevent the development of rheumatic fever and acute glomerulonephritis.
- prevent cross-infection in the general community.

Clients with peritonsillar abscess or peritonsillar cellulitis must be referred immediately and will receive antibiotics in secondary care.

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Consider the following in deciding whether or not to treat with antibiotics:

- Modified Centor (Sore Throat) score
- Presence in the community of GAS

Consider a delayed prescribing (delayed antibiotic use) for antibiotics:

- A delayed prescribing strategy (delayed antibiotic use) is defined as the use of, or advice to use, antibiotics more than 48 hours after the initial consultation. This strategy is used when it is not clear to the clinician that antibiotic therapy is needed immediately.
- The decision to use a delayed strategy should only be made if the client can return for follow-up within the agreed upon time.
- Reassure the client the antibiotics are not needed immediately as they will make little difference to symptoms and may have adverse effects.
- Advise the client to use the delayed prescription (or dispensed antibiotic) and return for reassessment if symptoms do not settle or get significantly worse.
- Further information to assist with client education about appropriate antibiotic use is available at: <http://www.dobugsneeddrugs.org/guide/sore-throat/>

Prescribe an antibiotic based on the Modified Centor (Sore Throat) Score and for:

- those with features of marked systemic illness.
- those at increased risk of serious complications.

Use caution in prescribing an antibiotic in those:

- with an increased risk of severe infection (e.g., diabetes or immunocompromised).
- who are at risk of immunosuppression (e.g., on disease-modifying anti-rheumatic drugs [DMARDs], carbimazole).
- with a history of rheumatic fever.

Treatment within 10 days of onset is likely to prevent rheumatic fever. GAS infection usually resolves without any sequelae. Some European countries consider GAS a self-limiting disease and do not recommend testing or treatment with antibiotics.

Treat with any of the following antibiotics if streptococcal disease is suspected according to "The Modified Centor (Sore Throat) Score" and/or culture or Rapid Strep

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testing has confirmed its presence.

- Preferred Antibiotic
 - Penicillin V
 - 25-50 mg/kg/day orally divided into 2-3 doses/day for 10 days (not to exceed 1200 mg per 24 hours)
 - Amoxicillin (Amoxil) 40 mg/kg/day orally divided q12h-q8h for 10 days. Maximum dose is 1500 mg/day.
 - If infectious mononucleosis is suspected, do not use amoxicillin because this drug may cause a generalized red "drug rash".

- For clients with penicillin allergy:
 - Erythromycin 40 mg/kg/day, orally divided q8h for 10 days
Or
 - Cephalexin 25-50 mg/kg/day orally divided q6h for 7-10 days. Avoid if immediate-type hypersensitivity to penicillin.
Or
 - Cefprozil 15 mg/kg/day orally divided q12h for 7-10 days
Or
 - Azithromycin 12 mg/kg/day orally for 5 days.

Client and Caregiver Education

- Educate client/caregiver that treatment for viral pharyngitis includes adequate rest, oral fluids, and analgesics.
- Reassure the client/caregiver that a sore throat is generally self-limiting, with most clients recovering after 7 days with or without antibiotic treatment.
- If fever is present, encourage adequate fluid intake to avoid dehydration.
- Explain that urgent medical attention should be sought if the client develops any difficulty breathing, stridor, drooling, a muffled voice, severe pain, dysphagia, or if they are not able to swallow adequate fluids or become systemically unwell.
- Advise regular use of acetaminophen or ibuprofen to relieve pain and fever.
- Counsel client/caregiver about the appropriate use of medications (dose, frequency, compliance, etc.).
- Provide advice regarding food and drink to avoid exacerbating pain (e.g., avoid hot drinks).

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- Some clients may find ice or flavoured frozen desserts (such as ice popsicles) provide additional symptomatic relief.
- Encourage adequate fluid intake to avoid dehydration if fever is present.
- Suggest the use of simple mouthwashes (e.g., warm salty water) at frequent intervals until the discomfort and swelling subside.

Monitoring and Follow-Up

- Instruct client/caregiver to return to clinic for reassessment if symptoms do not improve in 48-72 hours.
- Immunocompromised clients should seek immediate medical advice if they become systemically unwell.

Referral

- Referral may be necessary if condition is recurrent or persistent or an undiagnosed underlying pathology is suspected or complication develops.
- Refer to physician/RN(NP) for tonsillectomy if recurrent severe sore throat in children if ≥ 7 episodes in past year, ≥ 5 episodes per year in 2 years, or ≥ 3 episodes per year for 3 years.

DOCUMENTATION

- As per employer policy

REFERENCES

Alberta Health and Wellness. (2014). *Guide to the wise use of antibiotics: Sore throat*.

Retrieved from <http://www.dobugsneeddrugs.org/guide/sore-throat/>

Anti-infective Review Panel. (2013). *Anti-infective guidelines for community-acquired infections*. Toronto, ON: MUMS Guideline Clearinghouse.

Burton Shepherd, A. (2013). Assessment and management of acute sore throat. *Nurse Prescribing*, 11(11), 549–553.

Center for Disease Control and Prevention. (2012, June 25). *Acute pharyngitis in adults*. Atlanta: Author. Retrieved from www.cdc.gov

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DynaMed. (2013, August 07). *Pharyngitis*. Retrieved from <http://dynamed.ebscohost.com/>

Fine, A. M., Nizet, V., & Mandl, K. (2012). Large-scale validation of the Centor and McIsaac scores to predict group A streptococcal pharyngitis. *Archives of Internal Medicine*, 172(11), 847-852.

Health Canada. (2011). *First Nations and Inuit health: Pediatric clinical practice guidelines for nurses in primary care*. Ottawa, ON: Author. Retrieved from <http://www.hc-sc.gc.ca>

National Institute for Health and Care Excellence. (2012, October). *Sore throat acute*. Retrieved from <http://nice.org.uk>

Papadakis, M. A., McPhee, S. J., & Rabow, M. W. (2014). *Current medical diagnosis and treatment 2014*. New York, NY: McGraw Hill Medical.

Shulman, S. T., Bisno, A. L., Clegg, H. W., Gerber, M. A., Kaplan, E. L., Lee, G., ... Van Beneden, C. (2012). Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the infectious diseases society of America. *Clinical Infectious Diseases*, 55(10), e86–e102.
<http://doi.org/10.1093/cid/cis629>

Smith, M. (2013, May 27). *Pharyngitis*. Retrieved from www.essentialvidenceplus.com

Worrall, G. (2011). Acute sore throat. *Canadian Family Physician*, 57(7), 791-794.

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