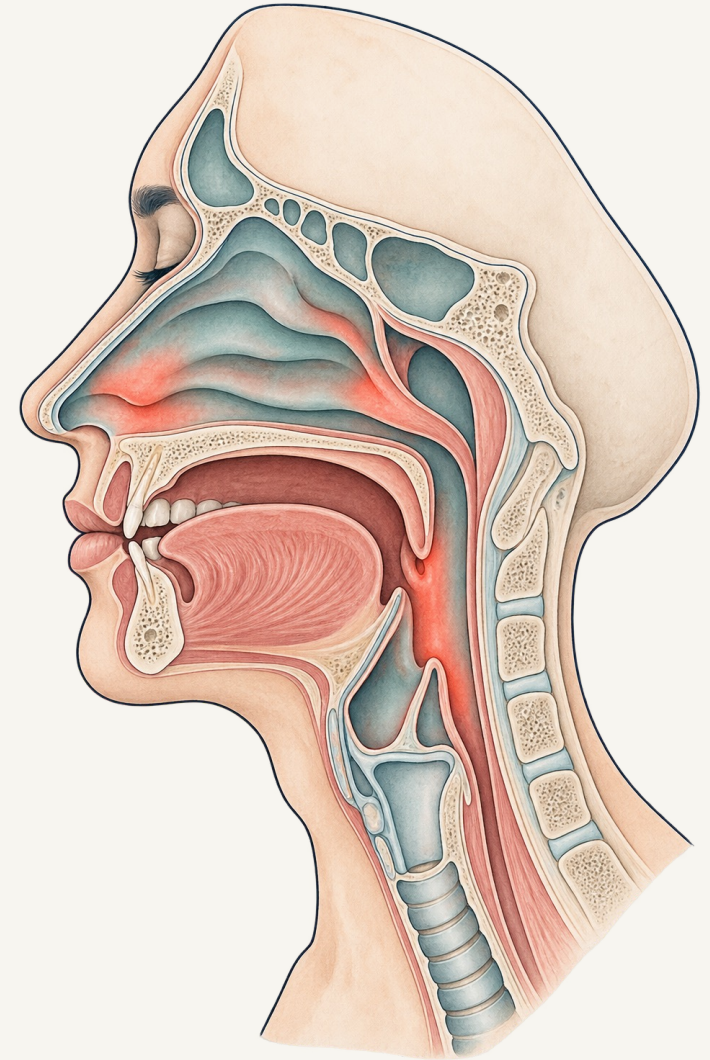


Upper Respiratory Infections

Diagnosis, treatment, and follow-up
in outpatient primary care

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A typical primary care visit

“Do I need an antibiotic?”

A 34-year-old has 4 days of congestion, sore throat, and cough. Nasal mucus is now green.

T 37.4°C HR 82 RR 16 SpO₂ 98%
Mild pharyngeal erythema. Lungs clear.

Which findings would change your testing or treatment?

Common syndromes and organisms

Syndrome	Common causes	Clinical implication
Common cold / viral URI	Rhinovirus most common Seasonal coronaviruses, adenovirus, others	Usually clinical diagnosis Supportive care
Acute pharyngitis	Viruses predominate Bacterial: <i>S. pyogenes</i> (GAS)	GAS: adults 5–15% Children 20–30%
Bacterial rhinosinusitis	<i>S. pneumoniae</i> Nontypeable <i>H. influenzae</i> <i>M. catarrhalis</i> , especially in children	Trajectory supports probable ABRS
Cold-like illness	Influenza, SARS-CoV-2, RSV	Risk of severe illness Consider early antivirals

Pathophysiology of a viral URI

01 Epithelial infection

Virus infects the respiratory mucosa and activates innate immunity.

02 Inflammatory response

Cytokines and mediators drive edema, secretions, and throat discomfort.

03 Impaired drainage

Mucosal swelling can obstruct sinus ostia and Eustachian tubes.

04 Recovery or complication

Most infections resolve. A minority develop bacterial sinusitis or otitis.

History and physical examination

History that changes decisions

Onset, duration, and trajectory

Fever pattern, dyspnea, swallowing, hydration

Exposure, pregnancy, immune status, comorbidity

Recent antibiotics, allergies, current medicines

Exam findings that matter

Viral: swollen nasal mucosa and diffuse pharyngeal erythema

GAS: exudate, tender anterior nodes, or palatal petechiae

AOM: effusion with a bulging eardrum

Pneumonia: focal lung findings or abnormal vital signs

Exudate suggests a differential. It does not establish GAS.

Testing that changes management

Presentation	Useful test or action	Usually unnecessary
Typical uncomplicated cold	Clinical diagnosis	Routine CBC, cultures, broad respiratory panels
Sore throat without clear viral features	Clinical score to select patients GAS RADT or throat culture	Antibiotics based on appearance or score alone
Possible influenza / COVID-19	Targeted testing when results affect antivirals or infection precautions	Delaying indicated empiric influenza therapy
Possible pneumonia or sinus complication	Chest radiograph if indicated Urgent imaging / referral for complications	Routine sinus imaging for uncomplicated disease

The expected course of a common cold

Days 1–3

Symptoms peak

Sore throat, congestion, rhinorrhea, and cough

By about 1 week

Overall improvement

Many symptoms improve without specific treatment

Up to 10–14 days

Some symptoms linger

Runny nose and cough may persist while improving

Persistence without improvement or a second deterioration warrants reassessment

GAS pharyngitis: selection and confirmation

Clear viral features

Cough, rhinorrhea, hoarseness,
oral ulcers, or conjunctivitis

Usually no GAS testing

Modified Centor / McIsaac

Fever >38°C	+1
Tonsillar swelling or exudate	+1
Tender anterior cervical nodes	+1
Absence of cough	+1
Age 3–14: +1 15–44: 0 ≥45: −1	

Use the score to guide testing. A positive RADT or culture confirms GAS.

Confirmed GAS: treatment

Adult first-line examples

Penicillin V 500 mg orally twice daily for 10 days

Amoxicillin 500 mg orally twice daily for 10 days

Penicillin allergy

Clarify reaction and severity

Cephalexin for selected non-immediate allergy

Avoid cephalexin in immediate hypersensitivity

Macrolide / clindamycin resistance varies

Follow-up and counseling

Analgesia and hydration

Reassess if no improvement in 48–72 hours

Return sooner for focal swelling or dysphagia

Return when afebrile after
12–24 hours of appropriate therapy

When sinus symptoms suggest ABRS

Persistent

At least 10 days without improvement

Purulent drainage with nasal obstruction or facial pressure / pain

Severe onset

Fever $\geq 39^{\circ}\text{C}$ plus purulence or facial pain

At least 3–4 consecutive days near the start of illness

Double worsening

Initial improvement followed by deterioration

New fever, headache, or increased nasal discharge / cough

Color and facial tenderness alone cannot distinguish viral from bacterial disease

ABRS: observation or antibiotics

Uncomplicated adult ABRS

Offer watchful waiting with reliable follow-up

Use symptom treatment and shared decisions

Reassess within 3–5 days after diagnosis

Treat if worsening or failure to improve

When antibiotics are chosen

Amoxicillin with or without clavulanate

Typical duration: 5–7 days for most adults

Example: amoxicillin-clavulanate
875/125 mg twice daily

Reassess after 3–5 days of therapy if not improving, or sooner if worse

Severe illness, immune compromise, or suspected complications requires an individualized plan

Cough and hoarseness after a URI

Acute cough / bronchitis

Cough commonly lasts 2–3 weeks

Assess for pneumonia and asthma / COPD

Colored sputum does not establish bacteria

No routine antibiotics or systemic steroids

Acute laryngitis

Hoarseness often accompanies a viral URI

Hydration and relative voice rest

No routine antibiotics or empiric steroids

Laryngoscopy if not improving by 4 weeks or earlier when concerning features appear

Paroxysms, post-tussive vomiting, or exposure should prompt consideration of pertussis

Influenza and COVID-19: early treatment

Influenza

Treat high-risk, severe, or progressive illness promptly

Do not wait for test confirmation in priority patients

Greatest benefit within 48 hours

Adult oseltamivir example:
75 mg twice daily for 5 days

COVID-19

Consider antivirals for patients at risk of progression to severe disease

Nirmatrelvir / ritonavir:
start within 5 days

IV remdesivir for 3 days:
start within 7 days

Review interactions and kidney / liver function

The treatment window begins at symptom onset, not the date of the visit

Symptom treatment with a safety check

Symptom	Reasonable options	Important limitation
Pain / fever	Acetaminophen or an NSAID when appropriate	Review liver / kidney disease, GI risk, pregnancy, and duplicate products
Congestion	Saline spray Short course of a decongestant if suitable	Pseudoephedrine: screen BP and interactions Oxymetazoline: no more than 3 days
Cough / sore throat	Honey for age ≥ 1 year Warm fluids and suitable lozenges	Honey is unsafe in infants < 1 year Benefits are symptomatic and often modest
Common prescribing traps	Choose treatment for the dominant symptom	Oral phenylephrine lacks efficacy Routine antibiotics do not treat a cold

Pediatric differences in family medicine

Strep testing	Back up a negative RADT with culture in symptomatic children age ≥ 3 years.
Ear examination	AOM requires middle-ear effusion and compatible tympanic-membrane findings.
Symptom medicines	Avoid OTC cough / cold products in children < 6 years. No honey before age 1.
Young infants	Age ≤ 3 months with rectal temperature $\geq 38^{\circ}\text{C}$ needs prompt medical evaluation.

Red flags and urgent escalation

Airway / breathing

Stridor, drooling, inability to handle secretions, severe dyspnea, or hypoxemia

Deep neck infection

Trismus, muffled voice, unilateral swelling, uvular deviation, or neck swelling

Orbital / intracranial spread

Painful or limited eye movements, diplopia, visual change, severe frontal headache, meningismus, altered mental status, or focal neurologic deficit

Systemic illness

Toxic appearance, hemodynamic instability, severe dehydration, or fever in a young infant

Airway compromise or suspected orbital / intracranial disease requires emergency evaluation

Follow-up and antibiotic stewardship

A specific return plan

Return urgently for breathing or swallowing difficulty

Contact us for fever >4 days, no improvement by >10 days, or improvement followed by worsening

Reassess GAS if not improving in 48–72 hours
ABRS: reassess within 3–5 days, sooner if worse

Language for the visit

“Your symptoms fit a viral infection.
Here is what can help today, what recovery should look like,
and when I want to reassess you.”

The case, revisited

Four days of congestion, sore throat, and cough
Reassuring vitals and lung examination

Working diagnosis Uncomplicated viral URI

Testing No routine GAS test with a clear viral pattern
Consider flu / COVID-19 testing if it changes management

Treatment Targeted symptom relief and expected-course counseling

Follow-up Reassess for a prolonged course, double worsening,
or any breathing, swallowing, orbital, or neurologic warning sign

The primary care decision rests on syndrome, trajectory, risk, and a reliable follow-up plan

References 1 of 4

[1] Centers for Disease Control and Prevention. About Common Cold. Updated February 19, 2026.

[2] Kennedy JL, Turner RB, Braciale T, Heymann PW, Borish L. Pathogenesis of rhinovirus infection. Curr Opin Virol. 2012;2(3):287–293. doi:10.1016/j.coviro.2012.03.008.

[3] Centers for Disease Control and Prevention. Outpatient Clinical Care for Adults. Antibiotic Prescribing and Use. April 16, 2024.

[4] Infectious Diseases Society of America. Clinical Practice Guideline Update on Group A Streptococcal Pharyngitis: Risk Assessment Using Clinical Scoring Systems in Children and Adults. Updated October 14, 2025.

[5] Centers for Disease Control and Prevention. Clinical Guidance for Group A Streptococcal Pharyngitis. Updated November 18, 2025.

[6] Centers for Disease Control and Prevention. Preventing and Managing the Common Cold. Patient education fact sheet. 2026.

References 2 of 4

[7] Chow AW, Benninger MS, Brook I, et al. IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults. Clin Infect Dis. 2012;54(8):e72–e112. doi:10.1093/cid/cis370.

[8] Payne SC, et al. Executive Summary of the Clinical Practice Guideline on Adult Sinusitis Update. Otolaryngol Head Neck Surg. 2025. doi:10.1002/ohn.1342. Key action statements 1, 4, 5, and 6.

[9] National Institute for Health and Care Excellence. Sinusitis (Acute): Antimicrobial Prescribing. NG79. Evidence review. 2017.

[10] Galioto NJ. Peritonsillar Abscess. Am Fam Physician. 2017;95(8):501–506.

[11] Centers for Disease Control and Prevention. Influenza Antiviral Medications: Summary for Clinicians. Updated March 10, 2026.

[12] Centers for Disease Control and Prevention. COVID-19 Treatment Clinical Care for Outpatients. Current online guidance.

References 3 of 4

[\[13\] American Family Physician. Acute Bronchitis: Rapid Evidence Review. 2025;111\(3\).](#)

[\[14\] Stachler RJ, et al. Clinical Practice Guideline: Hoarseness \(Dysphonia\) \(Update\). Otolaryngol Head Neck Surg. 2018;158\(1 Suppl\):S1–S42. doi:10.1177/0194599817751030.](#)

[\[15\] Centers for Disease Control and Prevention. Manage Common Cold. Updated March 11, 2026.](#)

[\[16\] Centers for Disease Control and Prevention. Outpatient Clinical Care for Pediatric Populations. Antibiotic Prescribing and Use. Current online guidance.](#)

[\[17\] US Food and Drug Administration. FDA Proposes Ending Use of Oral Phenylephrine as OTC Monograph Nasal Decongestant Active Ingredient After Extensive Review. November 7, 2024.](#)

[\[18\] MedlinePlus. Pseudoephedrine. Drug information from the American Society of Health-System Pharmacists.](#)

References 4 of 4

[19] MedlinePlus. Oxymetazoline Nasal Spray. Drug information from the American Society of Health-System Pharmacists.

[20] Centers for Disease Control and Prevention. Preventing Spread of Respiratory Viruses When You're Sick. Community guidance. Healthcare settings use separate guidance.

[21] North Dakota State University Center for Collaboration and Advancement in Pharmacy. Acute Bacterial Rhinosinusitis. Outpatient antimicrobial stewardship reference.

[22] American Academy of Pediatrics. Fever and Your Baby. HealthyChildren.org. Adapted from Caring for Your Baby and Young Child: Birth to Age Five, 8th ed., 2024.

[23] Shulman ST, Bisno AL, Clegg HW, et al. Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by IDSA. Clin Infect Dis. 2012;55(10):e86–e102. doi:10.1093/cid/cis629.

[24] MedlinePlus. Epiglottitis. Medical Encyclopedia. Used for emergency airway assessment and precautions during examination.