LEARNING OBJECTIVE

TOPIC 2: Allergic Rhinitis – Differential Diagnosis, Evaluation, and Management

Understand the differential diagnosis, evaluation, and management of allergic rhinitis

JUMP TO SECTION

Background

Allergic rhinitis affects **10–30% of children** with nearly half developing symptoms **before age 6**. The condition impairs quality of life through sleep disruption and school absenteeism while frequently coexisting with asthma, atopic dermatitis, and sinusitis.

Clinical Features

Core symptoms include: paroxysmal sneezing, clear rhinorrhea, nasal pruritus and congestion, bilateral ocular itching with tearing, postnasal drip with throat clearing, and fatigue from sleep fragmentation. Symptoms tend to worsen in early morning.
Seasonal triggers: tree pollens (spring), grass pollens (summer), ragweed (fall).
perennial triggers: indoor allergens (year-round).

Physical examination findings include: pale boggy turbinates with clear discharge, transverse nasal crease (allergic salute), allergic shiners and Dennie-Morgan lines (infraorbital creases), pharyngeal cobblestoning, and mouth breathing with high-arched palate.

Red flags requiring expanded differential: unilateral symptoms (foreign body, tumor, CSF leak), **recurrent severe infections with poor growth** (immunodeficiency, CF, PCD); **nasal polyps in young children** (CF, vasculitis).

Differential Diagnosis

Important: All is **rare before age 2 years**; consider other diagnoses first in this age group.

CATEGORY	EXAMPLES	KEY FEATURES	EVALUATION
Allergic rhinitis	Seasonal (pollens), Perennial (dust mites)	**Prominent itching/sneezing**, pale turbinates, positive atopic history	SPT or serum IgE
Nonallergic rhinitis	Chronic nonallergic, Vasomotor, NARES	**Minimal itching**, triggered by irritants/weather, negative allergy testing	Clinical diagnosis
Infectious	Viral URI, Bacterial sinusitis, CRS	**Purulent discharge**, facial pain, fever (acute)	Consider imaging if >12 weeks
Structural	Adenoids, Deviated septum, Polyps, Foreign body	**Unilateral symptoms**, mouth breathing, snoring	Nasal endoscopy, imaging
Systemic	CF, PCD, Immunodeficiency	**Recurrent infections**, multisystem involvement	Sweat test, immune workup

Evaluation and Diagnosis

History

Key history elements include: symptom pattern (**intermittent**: <4 days/week OR <4 weeks; **persistent**: >4 days/week AND >4 weeks); triggers (outdoor allergens like pollens, indoor allergens like dust mites, pets, and mold, irritants like smoke); impact on sleep and school performance; and personal/family atopic history.

Physical Examination

Examination should assess: nasal turbinate appearance and discharge quality; conjunctival involvement; tympanic membrane (retraction or effusion), and signs of atopic dermatitis or asthma.

Diagnostic Tests

- **Skin prick testing (SPT):** Preferred when considering immunotherapy or refractory symptoms; **wheal ≥3mm** indicates positive
- **Serum specific IgE:** Alternative when SPT unavailable or patient on antihistamines; **>0.35 kU/L** positive
- **Imaging:** Reserved for symptoms >12 weeks or suspected complications

Management and Treatment

Nonpharmacologic measures: allergen avoidance (dust mite encasings, pet removal from bedrooms, **humidity <50%**) and nasal saline irrigation before intranasal medications.

Treatment Algorithm

1. Classify as **mild vs moderate-severe** (based on sleep/activity impairment)
2. For mild intermittent AR, use **as-needed INCS or intranasal antihistamine**
3. For persistent or moderate-severe AR, prescribe **daily INCS** ± add-on antihistamine after 2–4 weeks if needed
4. For refractory cases, verify adherence/technique, consider combination INCS/antihistamine, evaluate for immunotherapy

Pharmacotherapy Options

MEDICATION CLASS	EXAMPLES	ROLE	KEY POINTS
INCS	Fluticasone, mometasone, budesonide	**First-line for persistent/moderate-severe**	**Most effective**; approved >2 years
Oral antihistamines	Cetirizine, loratadine, fexofenadine	Alternative first-line	**Avoid first-generation** (sedating)
Intranasal antihistamines	Azelastine, olopatadine	Rapid relief (15 min)	Bitter taste
Montelukast	-	Reserve for comorbid asthma	**FDA black box: neuropsychiatric**
Decongestant sprays	Oxymetazoline	Short-term only	**Limit to 5 days** (rhinitis medicamentosa)

Immunotherapy: Consider for moderate-severe AR with documented IgE sensitization in **children ≥5 years** who fail optimal pharmacotherapy, SCIT or SLIT options available; requires **3–5 year commitment**.

Counseling and Prevention

- **INCS require days-weeks for full effect**; must use daily, not PRN
- **Proper spray technique:** Aim away from septum to prevent epistaxis
- **Growth monitoring:** Check height annually for children on long-term INCS
- **Seek care for:** persistent sleep disruption, school impairment, inadequate response after appropriate trial

Complications and Referral

Complications of undertreated AR include: chronic sinusitis, otitis media with effusion, OSA from adenoidal hypertrophy, poor asthma control, and impaired school performance.

Referral Triggers

- **Allergy:** Moderate-severe AR despite optimal therapy, immunotherapy candidates (≥5 years)
- **ENT:** Anatomic abnormalities, chronic sinusitis, suspected OSA, **unilateral symptoms**
- **Immunology:** Recurrent bacterial infections, suspected CF or PCD

Prognosis: Typically persists into adulthood. **Early treatment may prevent asthma development** and complications.

JUST IN CASE (CURATED EXAM-DAY SUPPORT)

- Allergic Rhinitis - AAP Pediatrics In Review
- Allergic Rhinitis: Clinical Manifestations, Epidemiology, Pathogenesis, and Diagnosis - UpToDate
- Pharmacotherapy of Allergic Rhinitis - UpToDate

↑ Back to Top

Pediatrics® BOARD REVIEW

MOCA-PBR

Trusted by 10,000+ Pediatricians
Over 15+ Years.

Find the right answers quickly...
Pass MOCA-Peds in 3 years...
Get a two-year break...

Start Your Free Trial.

Money Back Quarterly Pass Guarantee