



Pocket
guide
**ALLERGIC
RHINITIS
IN CHILDREN**

DEVELOPED BY EUFOREA EXPERT TEAMS
BASED ON INTERNATIONAL GUIDELINES



What is Rhinitis?

Rhinitis is characterized by at least two symptoms nasal running, blocking, sneezing or itching. Rhinitis can be allergic, infectious non-allergic non-infectious or a mixture of these. Rhinitis is common in children and has negative effects on their well-being, especially if undiagnosed or undertreated.

Allergic rhinitis (AR) is mediated by an antibody, IgE, against common environmental, usually inhaled, allergens such as pollens, house dust mites, cat and dog dander.

Natural history of allergic rhinitis (AR) in childhood

The prevalence of allergic sensitization to indoor or outdoor allergens is very low in the first 2 years of life. Usually, 2 years of allergen exposure are needed before allergic sensitization can be detected. Consider other diagnoses in the presence of the above symptoms in the first two years of life.

Between the third and 15th year of life the annual incidence of allergic rhinitis/rhinoconjunctivitis - is around 2 to 3 percent. In teenagers, a prevalence of greater than 20% has been reported. Most children remain symptomatic over many years and do not outgrow the disease. There is a significant risk of asthma development in persistent AR patients.

Parental allergic rhinitis is the strongest risk factor for allergic airway diseases in childhood. Together with atopic dermatitis, it allows prediction early in life and facilitates early diagnosis and targeted therapeutic intervention.



1. Diagnosis of AR

A. History – most important

Rhinitis symptoms are nasal running, blocking, itching, and sneezing, all of which are common in children due to viral colds.

Think of allergy if:

- ✓ **Eyes** are involved
- ✓ **Itching** is noticeable- child gives allergic salute, has allergic crease
- ✓ Exposure to a known **allergen** reliably causes these symptoms
- ✓ Personal or family history of **other allergic diseases**
- ✓ Some children present with a **comorbidity** (asthma, atopic eczema, rhinosinusitis, hearing difficulties, sleep disturbance, behaviour problems, pollen food syndrome). Always ask about nasal symptoms in such patients.

Always ask about asthma in children with rhinitis and vice-versa. Children with unilateral symptoms, severe nasal obstruction +/- sleep apnoea should be seen by an ENT surgeon.

B. Examination

- ✓ **Allergic facies** (see photos)
- ✓ Nasal lining- can be seen with an otoscope- may be **pale, boggy and wet**
- ✓ Check for **asthma** and **eczema**
- ✓ Record **weight** and **height**

C. Tests

- ✓ **Skin prick or blood tests for IgE** to the allergen(s) suggested by the history.
- ✓ If unavailable consider a trial of therapy.
- ✓ **Peak flow** if possible.

Children with symptoms present since birth and poor responders to treatment may need a specialist referral for other tests.

Rotiroti G, Roberts G, Scadding GK. Rhinitis in children: Common clinical presentations and differential diagnoses. *Pediatr Allergy Immunol* 2015; 26: 103–110.
Greiner AN, Hellings PW, Rotiroti G, Scadding GK. Allergic rhinitis. *Lancet*. 2011 Dec 17;378(9809):2112–22. doi: 10.1016/S0140-6736(11)60130-X

2. Treatment

Education needs to involve parents/carers as well as the child. Once daily therapy likely results in better concordance. Children themselves should be asked about their symptoms- a simplified VAS with faces is provided.

Allergen and pollutant reduction parental smoking in the home contributes to symptoms and should be stopped if possible. Obvious allergy to non-domestic animals such as horses should lead to avoidance. Pets should be kept out of the child's bedroom/ playroom at all times. Allergens such as HDM are difficult to avoid completely, but multiple measures do show benefits in AR and asthma.

Nasal saline irrigation is effective and safe either alone or as an aid to reducing other medication requirements; hypertonic saline or sterile sea water are probably most effective.



Allergic facies-pale, mouth breathing, dark circles beneath eyes, double eye creases, loss of lateral eyebrow.

PAEDIATRIC AR Management Algorithm

Patient education on disease and therapy adherence

Avoid irritants and allergens | Advise saline nasal sprays/douching

FIRST LINE CARE
Pharmacist – General Practitioner

SPECIALIST CARE
Specialist

• Two or more nasal symptoms suggestive of allergic rhinitis

Antihistamine (anti-H1) non-sedating, oral or nasal



Uncontrolled

- (*) Add-on therapies**
- **Rhinorrhoea in asthmatics:** Leukotriene R antagonist
 - **Ocular itch/skin rash:** Oral non-sedating anti-H1
 - **Ocular symptoms:** Intra-ocular anti-H1 or Cromones
 - **Sudden onset nasal blockage:** nasal / oral decongestant ≤ 7 days under specialist guidance
 - **Ocular corticosteroid:** short course, 0,5mg/kg, 5 days under specialist guidance

• Nasal congestion
• Difficult-to-treat AR
• Failure of previous treatment

Diagnosis of AR

Nasal corticosteroid



Uncontrolled

• Severe AR
• Non-responder to step 2

Re-evaluate diagnosis

Nasal corticosteroid plus nasal antihistamine if > 6years or oral antihistamine if < 6years and/or Add-on therapies (*) Consider Allergen Immunotherapy

Carer and patient aiming for long term relief or cure

Allergen Immunotherapy (AR due to e.g. tree pollen, grass pollen, house dust mite)

CARER AND PATIENT PARTICIPATION IN TREATMENT PLAN

(#) Depending on availability at national level

Oral antihistamines only improve symptoms by 7-8% and take 1-3 hours to take effect. Sedating antihistamines should be avoided as they worsen the psychomotor retardation of AR. Nasal antihistamines are available for children over 6 years. They act rapidly but are less effective than INS for nasal obstruction.

Topical nasal steroids reduce nasal inflammation and the excessive immune response to an allergen. Modern INS such as mometasone furoate, fluticasone propionate or furoate have excellent safety for long-term use. Treating the nose reduces eye symptoms but topical mast cell stabilising antihistamines are superior to nasal sprays for isolated eye symptoms.

Decongestant medications and sprays have limited safety in children and should be avoided unless under specialist guidance.

If there is no improvement in symptoms – the above algorithm indicates the need for a medical review. If there are minimal symptoms with no mouth breathing, snoring, sniffing, sneezing, runny nose and poor sleep quality, then medications can be reduced or stopped, but are very safe to restart if symptoms recur.

VAS scale for children < 6 years



How to use a nasal spray

- Keep bottle next to toothbrush and use every morning before tooth cleaning.
- Shake the bottle, remove cap.
- Spray one puff towards the side wall of the nose, using the opposite hand, aiming inside the nose towards the ear and avoiding the septum.
- Repeat in the other nostril.
- Do not sniff. Wipe top of bottle, put it down and clean your teeth.
- “If you taste it... you waste it” ... reinforces the technique.



Spray technique: despite using the wrong hand the child is spraying correctly onto the lateral wall.

Specific Immunotherapy

Allergen-specific immunotherapy (AIT) in children has been demonstrated to have the potential for long-term disease modification and reduction of the incidence of asthma symptoms. It should therefore be considered early in the disease. Since not all AIT allergen products are approved for pediatric use, it is recommended to check the product package insert and/or literature and prefer products with specific evidence for use in children.

What is AIT? ⁶

AIT (also called desensitization, hyposensitization or allergy vaccination) is a treatment with the administration of increasing amounts of an allergen to induce immunological tolerance and to prevent allergic symptoms upon re-exposure. AIT can be administered via different routes: subcutaneous immunotherapy (SCIT), with s.c. injections of the sensitizing allergens in the upper arm, and sublingual immunotherapy (SLIT), with the sensitizing allergen kept under the tongue for 1-2 min (in the form of tablets or drops).

What are the advantages of AIT? ⁶

Efficacy varies between specific products

- ✓ Improves disease control
- ✓ Only treatment with disease modifying capacity
- ✓ Reduces nasal and/or ocular symptoms
- ✓ Enhances the quality of life
- ✓ Lowers need for intake of other anti-allergic medication
- ✓ Induces immunological tolerance, providing sustained clinical benefit
- ✓ Has the potential to prevent asthma

(6) Hellings PW, et al. Clin Transl Allergy, 2019; 9:1-7.

Which patients can benefit from AIT? ⁵

AIT should be considered if ALL are present:

- ❑ Uncontrolled moderate-to-severe symptoms of AR +/- conjunctivitis, on exposure to clinically relevant allergens
- ❑ Confirmation of IgE sensitization to clinically relevant allergens (via skin prick test or serum specific IgE)
- ❑ Inadequate control of symptoms despite reliever medication and allergen avoidance measures and/or unacceptable adverse effects of medication

HOW to choose allergen immunotherapy

1. The product for AIT should be **available by national marketing authorization** (registration)
2. Check national or international AIT guidelines to select **evidence based products**
3. If several products are available prefer products that are documented in **controlled clinical trials**
4. Use of non-documented products (**Named Patient Products**) only if no alternative is available and based on the physician's liability and indication

(5) Roberts G, et al. Allergy, 2018; 73: 765-798.

Vision

EUFOREA is an international non-profit organisation forming an alliance of all stakeholders working towards prevention and reduction of burden of chronic respiratory diseases

Mission

EUFOREA proposes to reduce the preventable and avoidable burden of morbidity due to chronic respiratory diseases through innovation and digital solutions

EUFOREA cannot be held liable or responsible for inappropriate healthcare associated with the use of this document, including any use which is not in accordance with applicable local or national regulations or guidelines.



www.euforea.eu