

Rhinitis (Allergic)

Definition / Supporting Information

Although there are many causes of rhinitis the focus of this Key Practice Point (KPP) will be on allergic rhinitis.

- Atopic disease caused by exposure to allergens and characterised by nasal congestion, sneezing, rhinorrhoea, and pruritus
 - Seasonal variation (hay fever)
 - Year-round (perennial) form
- May exist alone or in combination with asthma or atopic dermatitis

Keywords / also known as: allergy, hay fever, runny nose

Essential History

Ask about:

- Nasal congestion, sneezing, rhinorrhoea, and pruritus (eg, nose, eyes, and occasionally palate, pharynx)
 - Facial pain, loss of sense of smell, unilateral or bilateral rhinorrhoea
- In younger children
 - Perennial symptoms
 - History of respiratory infection, acute otitis media, chronic serous otitis media, hearing loss, and sinusitis
- Children > 4 years
 - Seasonal variation (eg, pollen sensitivity is more common)
- Perennial allergic rhinitis
 - Otitis media with effusion
 - Recurrent acute otitis media
 - Nasal speech
 - Decreased hearing
 - Mouth breathing
 - Snoring
 - Poor sleep pattern
 - Fatigue
 - History of recurrent wheeze
 - From triggers such as viral upper respiratory tract infections (URTIs), cold air, dry air, exercise

- Histamine release often creates intense itching in the nose and oropharynx
 - Patients intensely rub the nose (the “allergic salute”)
 - Strange clucking or throat-clearing noises to try to obtain relief

‘Red Flag’ Symptoms and Signs

Ask about:

- Unilateral nasal obstruction
- Obstructive sleep apnoea
- Epistaxis

Look for:

- Features of severe chronic allergic rhinitis
 - Elongated facial growth caused by chronic mouth breathing
 - May include orthodontic changes such as overbite and high-arched palate
 - Enlargement of tonsils and adenoids
 - Chronic middle-ear effusion
 - Granulations, crusting, or perforation of nasal mucosa

Differential Diagnosis / Conditions

- Differential diagnosis of perennial allergic rhinitis
 - Viral URTI
 - Acute-onset of fever
 - Purulent rhinorrhoea
 - Red, swollen nasal mucosa
 - Sore throat
 - Cervical lymphadenopathy
 - Recurrent acute or chronic rhinosinusitis
 - Often presents as viral URTI that does not resolve after 10 to 14 days
 - Symptoms may overlap with mild allergic rhinitis, but typically patients have significant nasal obstruction and nocturnal cough
 - Protracted acute sinusitis may lead to a chronic low-grade infectious component or induce eosinophilic non-allergic rhinosinusitis
 - Non-allergic rhinitis with eosinophilia syndrome (NARES)
 - Relatively rare in young children, but increases in frequency in older children
 - When NARES occurs, it may be associated with nasal polyps and asthma, much like more severe allergic rhinitis
 - By definition, NARES patients have negative skin tests

- Vasomotor rhinitis
 - Condition of nasal hyper-responsiveness to non-specific irritant stimuli (eg, volatile organic compounds, perfumes, smoke, and pollutants)
 - Chronic nasal congestion that is typically minimally improved by environmental controls or medications
 - Unless patients have associated allergic rhinitis or rhinosinusitis
 - Normal nasal cytology
 - Negative skin prick tests
 - Normal total and specific immunoglobulin E (IgE) tests
 - No signs of associated atopic disease (eg, asthma or atopic dermatitis)
- Adenoid hypertrophy
 - Important cause of chronic nasal obstruction
 - It may worsen in a child with significant allergic rhinitis
 - Children with significant adenoid hypertrophy are always congested and exhibit snoring
 - Congestion can lead to:
 - Otitis media with effusion
 - Decreased hearing
 - Decreased appetite
 - Poor sleep pattern (including sleep apnoea)
 - Orthodontic abnormalities (eg, high-arched palate, overbite, mal-aligned teeth)
- Less common conditions that can mimic some symptoms of allergic rhinitis
 - Nasal foreign body
 - Choanal atresia
 - Rhinitis medicamentosa
 - Rhinitis caused by topical medication (eg, topical decongestants)
 - Rhinitis caused by systemic medication (eg, angiotensin-converting enzyme (ACE) inhibitors)
 - Cystic fibrosis
 - Ciliary dyskinesia
 - Nasopharyngeal tumours
 - Enlarged tonsils and adenoids
 - Gastro-oesophageal reflux disease

Investigations

- Diagnosis of seasonal allergic rhinitis is generally straightforward and based on patient history, clinical presentation, and physical examination

- Specific pollen counts can add further support for the diagnosis
- Non-specific perennial symptoms pose a more difficult diagnostic challenge

To be undertaken by non-specialist practitioners (eg, General Practitioner (GP) Team):

- Blood tests are not necessary and diagnosis is mainly clinical. More formal testing for allergens should be undertaken in secondary or tertiary care

To be undertaken by specialist practitioners (eg, Allergy Specialists, Ear Nose and Throat, Respiratory Team(s)):

- Skin prick tests to environmental allergens, such as house dust mite, pollen, and mould
- Skin tests are often preferred because they are less expensive and have somewhat better sensitivity

Treatment Approach

- Treatment of allergic rhinitis is initially based on history and physical examination, which provide a framework of likely triggers and clinical severity
 - Allergen avoidance measures
 - Pharmacotherapy
 - Occasionally, immunotherapy
- Therapy should be individualised based on:
 - Patient age
 - Unique environmental factors
 - Symptom severity
 - Presence of associated medical conditions

To be undertaken by non-specialist practitioners (eg, General Practitioner (GP) Team), or specialist practitioners (eg, Emergency Department / Paediatric Team(s)):

- See Allergic rhinitis [[NICE Clinical Knowledge Summary 2018](#)]

Environmental control

- First-line of therapy at all ages
- Particular attention should be directed to the child's bedroom and other settings where substantial amounts of time are spent

Advise allergen avoidance for people with:

- Suspected pollen allergy
- House dust mite allergy
 - When symptoms are inadequately controlled with maximal preventive drug treatment
 - The responsible allergen has been confirmed by allergy testing

- Suspected animal allergy
 - After confirming the responsible allergen by allergy testing
- Occupational allergy
- **For children and young people with grass pollen allergy**, advise:
 - Against walking in grassy, open spaces, particularly during the early morning, evening, and night, when pollen counts are at their highest
 - Keeping windows shut in cars and buildings
 - Changing car pollen filters with each service, if these are fitted
- **For people with confirmed house dust mite allergy** inadequately controlled by drug treatment, advise:
 - Fitting mattresses and pillows with house dust mite impermeable covers
 - Using synthetic pillows and acrylic duvets, and keeping furry toys off the bed
 - Washing all bedding and furry toys at least once a week at high temperatures
 - Choosing wooden or hard floor surfaces instead of carpets, if possible
 - Fitting blinds that can be wiped clean instead of curtains
 - Surfaces should be wiped regularly with a clean, damp cloth
- **For children and young people with confirmed animal allergy**, advise that ideally the animal should not be allowed in the house
 - When this is not acceptable, advise restricting their presence to the kitchen
- **For children and young people with occupational allergy**, advise eliminating or reducing exposure to allergens
 - By using latex-free gloves
 - Using a dust mask
 - Ensuring that their environment is adequately ventilated

Pharmacotherapy

- Primary pharmacotherapy
 - Antihistamines (eg, oral and nasal)
 - Leukotriene antagonists
 - Nasal corticosteroids
- Adjunctive medications
 - Decongestants
 - Nasal sodium cromoglicate
 - Nasal ipratropium bromide
 - Oral corticosteroids
- **For children and young people who want an ‘as-required’ treatment for occasional symptoms**, prescribe an antihistamine first-line
 - For people with allergic conjunctivitis, children aged 2–5 years of age, and people who prefer oral treatment, prescribe an oral antihistamine (such as cetirizine or loratadine)

- For all other people, prescribe intranasal azelastine first-line. Explain the importance of a good technique
- **For children and young people who want preventive treatment to control more frequent or persistent symptoms**
 - Advise the person to avoid the causative allergen, if possible
 - If allergen avoidance is inadequate or not possible, prescribe drug treatment
 - If nasal drops or a spray is prescribed, explain the importance of a good technique
- **If the predominant symptom is nasal blockage, or nasal polyps are present**, prescribe an intranasal corticosteroid
- **If the predominant symptom is sneezing or nasal discharge**, prescribe an oral antihistamine (if oral treatment is preferred or allergic conjunctivitis is present) or an intranasal corticosteroid (if a more effective treatment is required).
- **For children and young people who require rapid relief of symptoms while awaiting preventive treatment to take effect**
 - If nasal congestion is a problem, prescribe an intranasal corticosteroid for up to 7 days
 - Prolonged use can result in rebound symptoms (ie, rhinitis medicamentosa)
 - If the person is already using an intranasal corticosteroid, add an oral antihistamine
 - If symptoms are severe and / or impairing quality of life
 - Prescribe a 5–10 day course of prednisolone
 - 20–40 mg a day in adults
 - 10 mg a day in children
 - Advise people to reconsult after 2–4 weeks if symptoms remain inadequately controlled

Nasal corticosteroids

- The most effective monotherapy for allergic rhinitis
- Some formulations have been approved for use in children
 - Available formulations:
 - Beclometasone dipropionate (for children > 6 years)
 - Fluticasone propionate (for children > 4 years)
 - Mometasone furoate (for children > 6 years)
 - Budesonide (for children > 12 years)
 - Fluticasone furoate (for children > 6 years)
- Growth suppression is a theoretical risk with nasal steroids, so the lowest effective dose should be used
- Fortunately, several of the newer formulations have reduced bioavailability and are typically well tolerated (mometasone furoate and fluticasone furoate)

Antihistamines (oral and nasal)

- First-line pharmacological treatment, preferably using non-sedating antihistamines
- Block histamine-1 receptors on mast cells, thus preventing rhinorrhoea, sneezing, and itching caused by histamine
- Recently developed antihistamines are typically effective with relatively low risk for side-effects such as sedation
 - Fexofenadine
 - Cetirizine
 - Levocetirizine
 - Loratadine
 - Desloratadine
- First-generation antihistamines such as chlorphenamine, diphenhydramine and hydroxyzine are effective, but their utility is often limited by their sedative side-effect profile
- Nasal antihistamines such as azelastine represent an alternative approach to oral antihistamines
 - Some risk for sedation because the medication is absorbed systemically from the nose

Leukotriene antagonist

- Montelukast
 - Approved for treatment of both seasonal and perennial allergic rhinitis
 - Generally well tolerated
 - Can be used as monotherapy or combined with antihistamines
 - Can be particularly useful in children who have concurrent asthma or will not comply with the use of nasal sprays

Decongestants

- May be useful in the short term to help reverse the effects of acute congestion
- Oral formulations
 - Significant potential for causing irritability, hyperactivity, or sleep disturbances
- Nasal formulations
 - Use should also be limited because prolonged therapy can induce rebound congestion (rhinitis medicamentosa)
- Nasal sodium cromoglicate
 - Well tolerated, but its use is limited because optimal efficacy requires use 2–4 times a day
- Nasal ipratropium
 - Will help control rhinorrhoea, but typically has little effect on other symptoms

To be undertaken by specialist practitioners (eg, Allergy Specialists / Ear Nose and Throat / Respiratory Team(s)):

Oral corticosteroids

- Can be useful in the short term to help reduce acute severe allergic inflammation
- Provide symptom relief and reduce nasal obstruction and nasal hyper-responsiveness; thus, creating a more favourable environment for nasal therapy

Immunotherapy

- Consider after allergy consultation in the setting of moderate to severe allergic rhinitis that does not respond adequately to environmental controls and appropriate pharmacotherapy
- Typically entails a 3–5 year series of subcutaneous injections in a controlled setting to help induce tolerance
- Most effective for seasonal allergic rhinitis (eg, pollen) and dust mite allergy
 - May also have efficacy with animal dander and moulds
- Recently, sublingual allergy immunotherapy has become available to treat grass or ragweed allergy
 - Treatment is started 12 weeks before the relevant pollen season and continued on a daily basis through the season

When to Refer

Refer urgently to specialist practitioners (eg, Emergency Department / Paediatric Allergy / Ophthalmology Team(s)) if:

- Signs of severe associated symptoms (eg, severe eye discomfort, photophobia, swelling of the eye or respiratory distress)

Consider routine referral to specialist practitioners (eg, Allergy Specialists / Ear Nose and Throat / Respiratory Team(s)) if:

- Poor clinical course despite aggressive environmental controls and appropriate frontline medications of topical corticosteroids +/- antihistamines have been trialled for at least 4 weeks
 - Persistent perennial symptoms
 - Poorly controlled seasonal rhinitis symptoms
 - Suspected complications (eg, chronic sinusitis)
 - Recurrent otitis media, recurrent sinusitis, or worsening persistent or intermittent asthma
 - Consideration of allergen-specific immunotherapy

‘Safety Netting’ Advice

If you believe that something in the immediate environment is causing symptoms, remove the child immediately from the situation. Rhinitis can be the initial symptom of much more serious (though rare) reactions, including severe asthma and anaphylaxis.

Patient / Carer Information

****Please note: whilst these resources have been developed to a high standard they may not be specific to children.***

- [Allergic Rhinitis](#) (Web page), the NHS website
- [Understanding the Allergic Rhinitis Care Pathway](#) (PDF), Royal College of Paediatrics and Child Health
- [Non-allergic rhinitis](#) (Web page), the NHS website

Resources

Medical Decision Support

[Supporting pupils at school with medical conditions](#) (PDF), Department for Education, 2015

Suggested Resources

****Please note: these resources include links to external websites. These resources may not have national accreditation and therefore PCO UK cannot guarantee the accuracy of the content.***

[Allergic Rhinitis](#) (Web page), NICE Clinical Knowledge Summary, National Institute of Health and Care Excellence

Arbes SJ, Gergen PJ, Elliot L, et al. Prevalences of positive skin test responses to 10 common allergens in the US population: results from the third National Health and Nutrition Examination Survey. *J Allergy Clin Immunol* 2005;116(2):377–383 [[PubMed](#)]

[Allergic and Non-Allergic Rhinitis](#) (Web page), BSACI

[Cetirizine for hay fever](#) (Web page), Medicines for Children

Gentile D, Bartholow A, Valovirta E, et al. Current and future directions in pediatric allergic rhinitis. *J Allergy Clin Immunol Pract* 2013;1(3):214–216 [[PubMed](#)]

Greiner AN, Meltzer EO. Pharmacologic rationale for treating allergic and nonallergic rhinitis. *J Allergy Clin Immunol* 2006;118(5):985–998 [[PubMed](#)]

[Loratadine for allergy symptoms](#) (Web page), Medicines for Children

Wallace DV, Dykewicz MS, Bernstein DI, et al. The diagnosis and management of rhinitis: an updated practice parameter. J Allergy Clin Immunol 2008;122(2 Suppl):S1–S84 [[PubMed](#)]

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