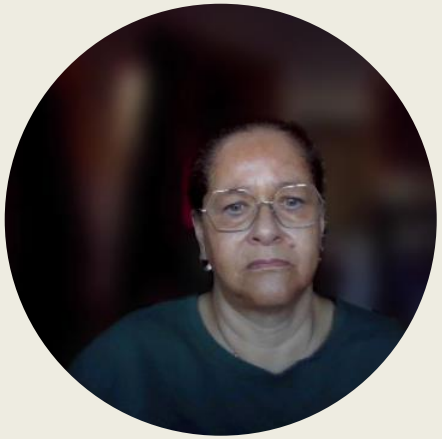
Allergic Rhinitis in Children with Asthma: Don't forget the Nose! Understanding the Impact, Diagnosis, and Management (including insights from Prof. Glenis Scadding)

Surrey Heartlands
Children and Young People's Asthma Team
beating asthma together

Suzanne Bailey, ICS CYP Clinical Respiratory Lead/Senior Specialist CYP Asthma Practitioner

1st April 2025



Professor Glenis Scadding

Currently: Honorary Consultant Physician in Allergy and Rhinology, Royal National ENT Hospital, London.

Glenis Scadding is an Honorary Associate Professor in the Department of Infection and Immunity at University College London, President of the UK Semiochemistry Network and Chair of Trustees of the Rhinology and Laryngology Research Fund.

Secretary of the British Society for Allergy and Clinical Immunology (BSACI) 2007-2009, President 2009-2012.

Chair European Academy of Allergy & Clinical Immunology Ethics Committee 2018-2020.

Chair of the EUFOREA Rhinitis Expert Panel.

Scientific Chief Editor for Rhinology Section of Frontiers in Allergy.

Research interests include rhinitis and its co-morbidities, including rhinosinusitis; aspirin hypersensitivity and sublingual immunotherapy.

Allergy

2011 Allergist of the Year - Allergy UK
2012 Clemens von Pirquet award for research from the European Academy of Allergy

Immunology

2012 Walter Jobson Horne award of the British Medical Association
2013 World Allergy Organization - Outstanding Clinician

Publications

Author of over 300 pre-reviewed publications.
(Information correct 2021).

European Forum for Research and Education in Allergy and Airway Diseases (EUFOREA) Home – EUFOREA

PCRS in Conversation - Allergic Rhinitis | Primary Care Respiratory Society

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Please turn your cameras on ☺ (unless you are eating lunch)

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Overview

- Prevalence of allergic rhinitis (AR) in children with asthma (~80% comorbidity)
- Nasal symptoms are often overlooked in children.
- Link between upper and lower airway diseases (United Airway Concept) PIIS2213219823005470.pdf
- Treating the nose improves asthma control and quality of life.

"You can look at it, challen
and measure the outcom

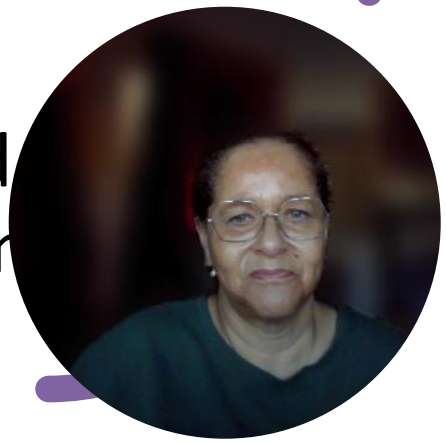
Unified Airways – One System

Upper and lower airways are functionally connected.

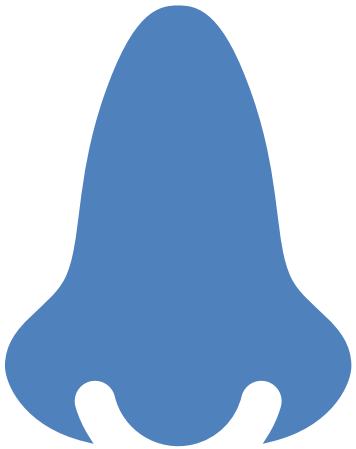
Nasal inflammation can exacerbate lower airway disease.

Always assess the nose in asthma.

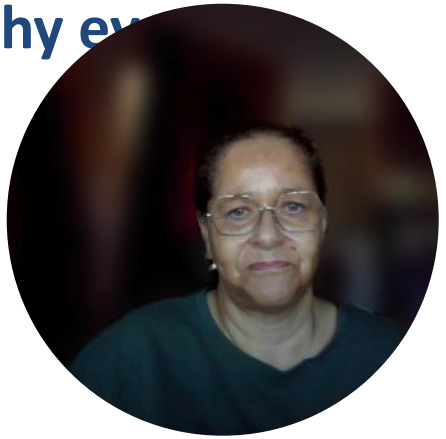
- Rhinitis in a child = Ask about wheeze
- Asthma in a child = Ask about nasal symptoms



Definition of Allergic Rhinitis



Allergic rhinitis, often called hay fever, is an inflammation of the nasal membranes caused by an allergic reaction to airborne allergens, leading to symptoms like sneezing, runny nose, and itchy ey



Definition of Chronic Rhinosinusitis (CRS)

Chronic rhinosinusitis (CRS) is defined as inflammation of the nasal passages and paranasal sinuses lasting 12 weeks or longer, characterized by symptoms like nasal congestion, facial pain, and reduced sense of smell.

CRS is a persistent inflammatory condition affecting the nose and sinuses, unlike acute rhinosinusitis which resolves within a few weeks.

The key factor in distinguishing CRS is the duration of symptoms, which must persist for 12 weeks or longer.

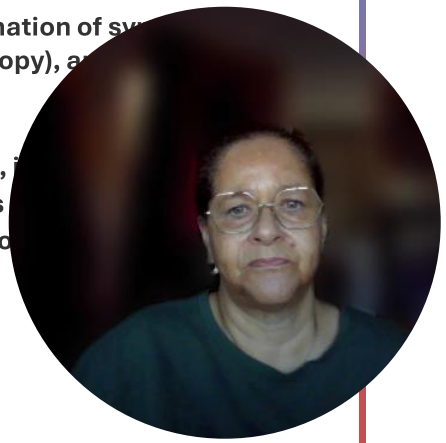
Common symptoms include nasal blockage or congestion, nasal discharge, facial pain or pressure, and a reduced sense of smell.

CRS can be caused by a variety of factors, including infections, allergies, structural abnormalities in the nasal passages, and other underlying conditions.

CRS can be further classified based on the presence or absence of nasal polyps (growths in the nasal passages).

Diagnosis is typically based on a combination of sy
physical examination (including endoscopy), a
like CT scans.

Treatment aims to reduce inflammation,
and address any underlying causes. This
like nasal corticosteroids, saline irrigatio
surgery.



Pathophysiology of Allergic Rhinitis

Allergen exposure → Immune response → Inflammation

- Role of IgE, mast cells, histamine, and cytokines

- How inflammation in nose affects asthma

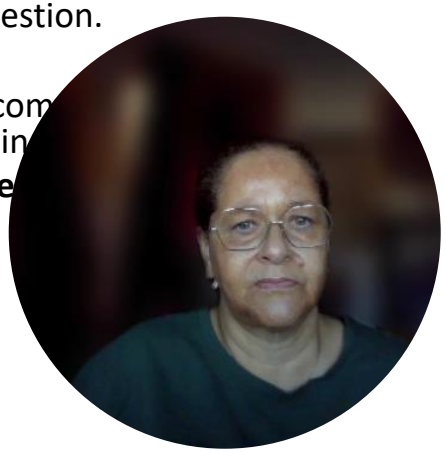
Two explanations – one simplified

Pathophysiology of Allergic Rhinitis

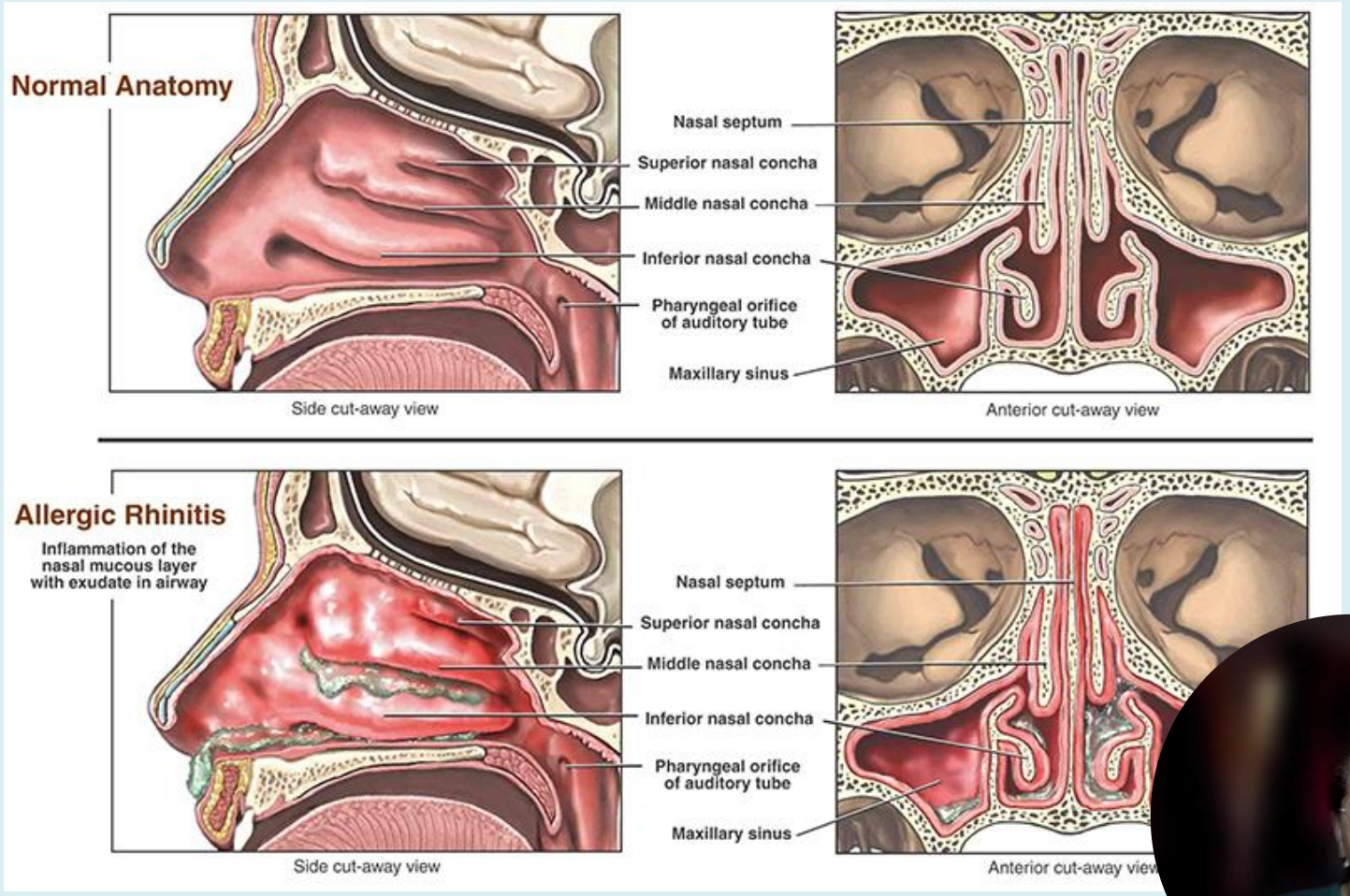
1. **Allergen Exposure**
    1. Common allergens: pollen, dust mites, pet dander, mould
    2. Inhaled allergens come into contact with nasal mucosa
2. **Sensitisation Phase**
    1. Allergen is processed by **antigen-presenting cells**
    2. **T-helper 2 (Th2)** cells activate
    3. Release of **IL-4, IL-5, IL-13** → stimulate **B cells** to produce **IgE antibodies**
    4. IgE binds to **mast cells** (priming them)
3. **Early-Phase Reaction (Minutes after exposure)**
    1. Re-exposure → allergen binds to IgE on mast cells
    2. Mast cells degranulate → release **histamine, prostaglandins, leukotrienes**
    3. Causes **sneezing, nasal congestion, itching, rhinorrhoea**
4. **Late-Phase Reaction (4–8 hours later)**
    1. Recruitment of **eosinophils, basophils, T cells**
    2. Sustained inflammation → prolonged symptoms (especially nasal congestion)
    3. Leads to **nasal hyperresponsiveness** and **chronic mucosal inflammation**

🌼 Allergic Rhinitis – What Happens in the Body?

1. **Trigger**
    1. You breathe in something you're allergic to (like pollen, dust, or pet hair).
2. **Immune System Reacts**
    1. Your body sees it as a threat (even though it's harmless).
    2. It makes antibodies (IgE) to fight it off.
3. **Histamine Release**
    1. The next time you breathe it in, your immune cells (mast cells) release **histamine**.
    2. This causes sneezing, runny nose, itchy eyes, and nasal congestion.
4. **Ongoing Inflammation**
    1. More immune cells com
    keep the reaction goin
    2. This leads to a **blocke**
    lasting symptoms.



Pathophysiology of Allergic Rhinitis

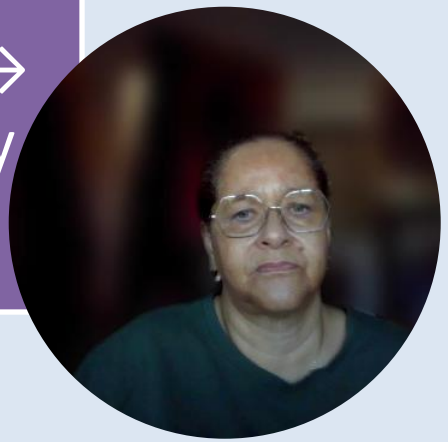


Nasal Involvement in Allergic Rhinitis & Asthma

Chronic nasal inflammation→ Airway hyperreactivity

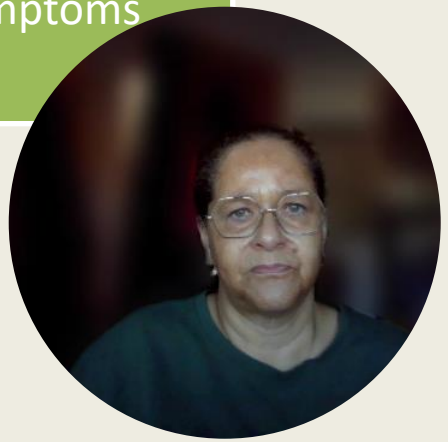
Nasal obstruction → Mouth breathing → Poor asthma control

Postnasal drip → Cough & airway irritation



Clinical Features of Allergic Rhinitis

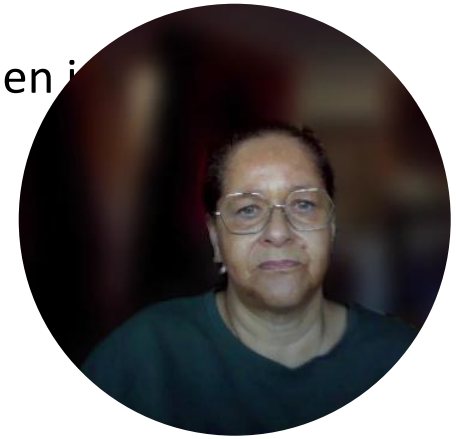
- Nasal symptoms: Sneezing, congestion, rhinorrhoea, nasal itching
- Eye symptoms: Redness, itching, watering
- Mouth breathing & sleep disturbances
- Impact on QoL, learning, and asthma symptoms



Recognising Allergic Rhinitis in Children – Key Questions during Assessment

Key Questions:

- Can you breathe through your nose?
- Do you snore at night? Does it wake you or other people in the home.
- Have you got a sense of smell? Lack of smell indicates chronic rhinosinusitis, possibly with polyps, rather than allergic rhinitis.
- Does your nose run?
- Does your nose itch?
- Do you sneeze?
- Do symptoms worsen when i
places?



Perennial vs Seasonal Rhinitis

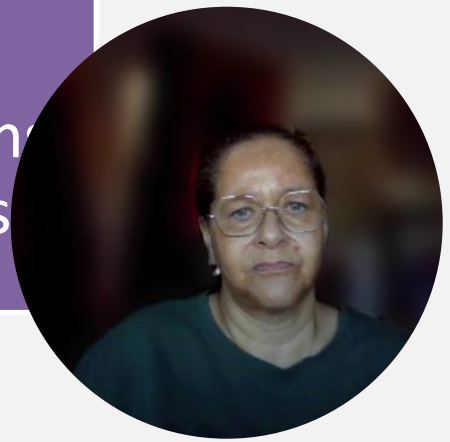
- Seasonal: Pollen-related (e.g., hay fever)
- Perennial: Dust mite, pet dander, mould
- Perennial presents mor
with congestion, post
drip, reduced smell

Importance of Recognising Allergic Rhinitis in Asthma Management

Uncontrolled AR = Poor asthma control

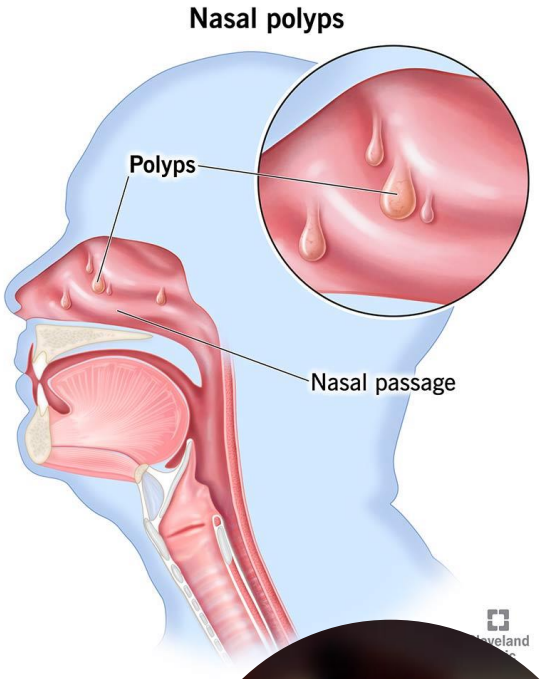
Risk of exacerbations & hospital admissions

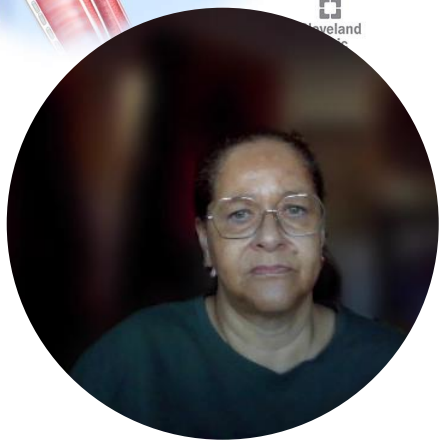
Overlap with asthma symptom
Misdiagnosis ris



Clinical Tip – Nasal Exam Signs

- 👃 Examine the nasal passages using a pen torch - Allergic nose: Pale, boggy, wet
- 🧪 Smell loss: Consider chronic rhinosinusitis ± polyps
- 🔵 Glue ears: May suggest allergic link (esp. in children) and may be as a result of primary ciliary dyskinesia.





Clinical Assessment & Diagnosis

- History: Trigger identification, symptom pattern, impact on sleep & daily life

Examination: Allergic shiners, nasal crease, mouth breathing

Investigations: Refer for Skin prick tests, specific IgE, nasal endoscopy (if needed)

Management Strategies Allergic Rhinitis and its Impact on Asthma (ARIA) Guidelines

ARIA – EUFOREA

1.Allergen avoidance

House dust mite, pollen, pet dander – practical tips

2. Pharmacotherapy

Intranasal corticosteroids (1st line) – Gold standard

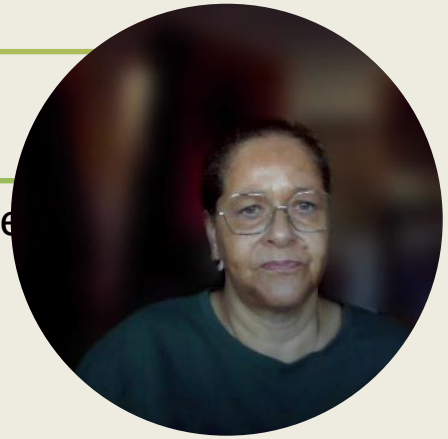
Oral & intranasal antihistamines – Symptom relief

Nasal saline irrigation– Mucosal clearance

Montelukast? – Limited role in AR alone

3. Immunotherapy

Sublingual or subcutaneous – for seve



The Truth About Antihistamines

🚫 Avoid Sedating Antihistamines:

- Cognitive slowing

- Poor academic performance

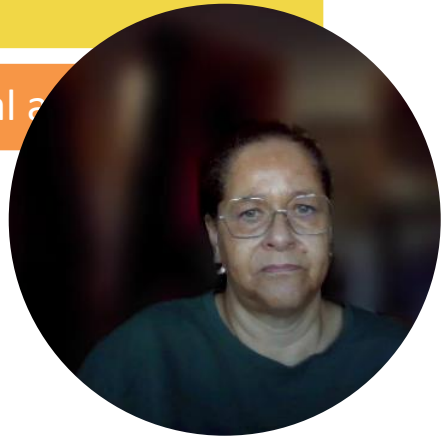
- ↑ car accident risk (4x – Finland data)

☑ Preferred Options:

- Loratadine, Fexofenadine

- Cetirizine (mild sedation)

- Azelastine (nasal antihistamine) > oral a



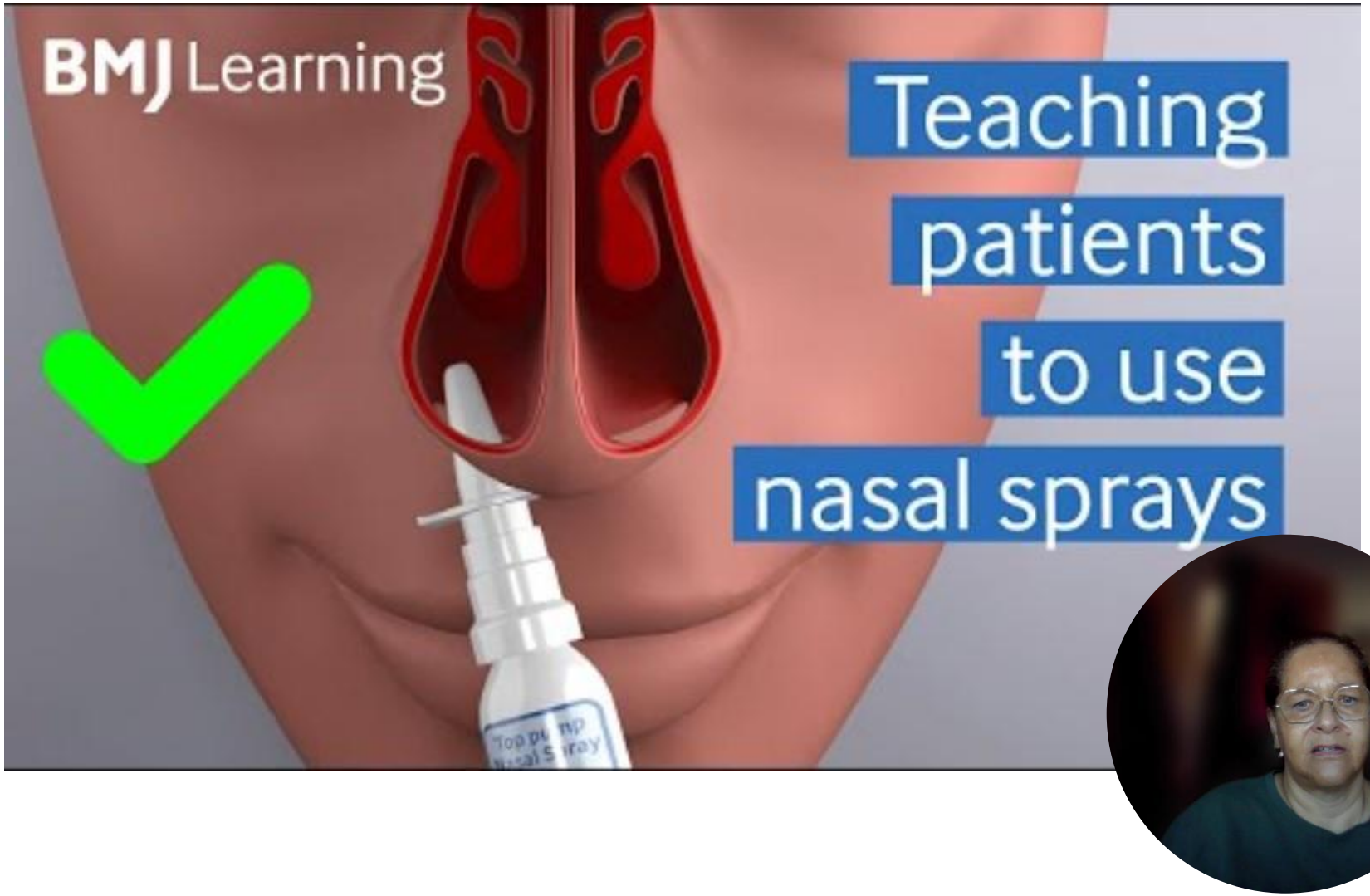
Intranasal Corticosteroids – Best Practice

Fluticasone, mometasone, budesonide

Proper technique: Aim spray away from septum, sniff gently, use regularly

Common errors & troubleshooting

Teaching a patient how to use a nasal spray



First-Line Treatments

💨 Intranasal Corticosteroids:

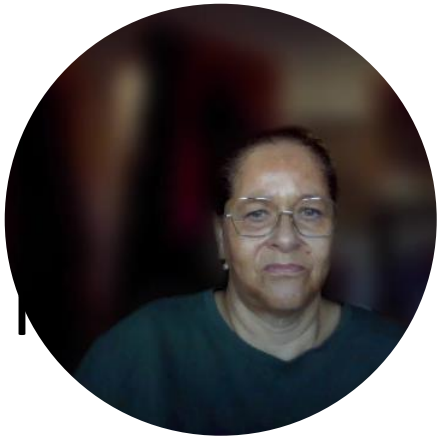
- Fluticasone, Mometasone (safe, low systemic absorption)

💊 Combo Sprays:

- Fluticasone + Azelastine

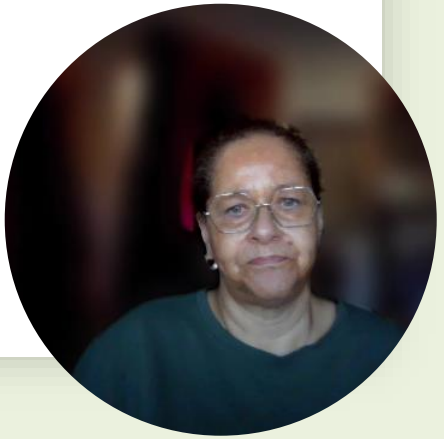
- Mometasone + Olopatadine

⚡ Fast relief: 5–15 M



Saline: The Underrated Hero

- Reduces medication need in mild rhinitis
- Safe for all ages
- Spray or rinse depending on age
- "Big Douche" rinse for chronic rhinosinusitis



Immunotherapy for allergic rhinitis, or hay fever, aims to desensitize the body to allergens by gradually exposing it to increasing doses of the allergen, either through injections (subcutaneous immunotherapy) or under-the-tongue tablets (sublingual immunotherapy): Changing the Disease Pathway

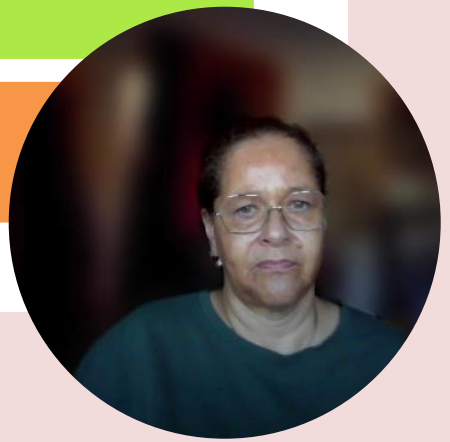
- SLIT now licensed in young children
- Start before age 7 for best results
- Prevents asthma progression
- Needs 3-year course
- Refer to paediatric allergist for initi

Impact of Poorly Managed Allergic Rhinitis on Asthma

- Increased airway inflammation
- Higher medication use & hospitalizations
- Sleep disturbance → Daytime fatigue → concentration

Medical Management of Polyps

- Betamethasone drops in head-down position
- Oral prednisolone (short bursts only)
- Long-term steroid sprays preferred
- ENT referral if persistent or recurrent



Treatment Do’s and Don'ts

Avoid:

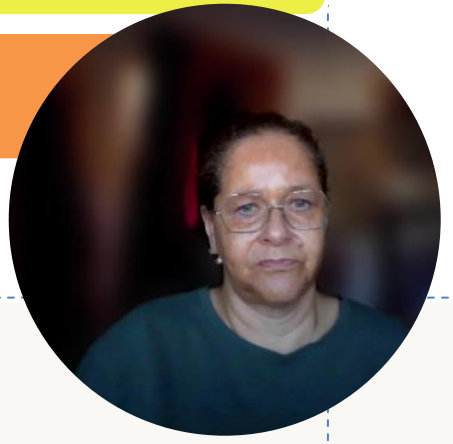
- Intramuscular steroids for hay fever

- Sedating antihistamines

- Long-term decongestants

Do:

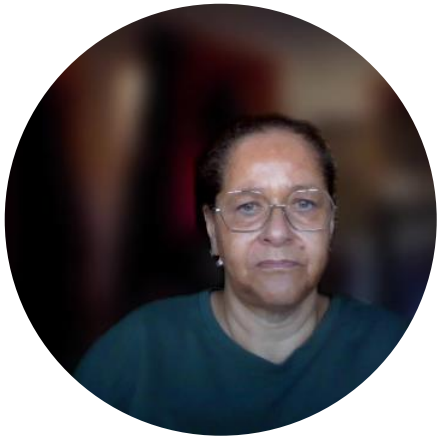
- Treat early and daily



Referral to secondary care?

REFER IF:

- PERSISTENT RHINITIS + POOR ASTHMA CONTROL
- RECURRENT EAR SYMPTOMS
- SUSPECTED POLYPS
- NO RESPONSE TO MAX THERAPY



Case Study

Case Study: Asthma and Allergic Rhinitis in a Child

Patient: Jacob, 10-year-old boy
Presenting Complaint: Persistent blocked nose, worsened asthma symptoms

Background:
Jacob is a 10-year-old boy with a known diagnosis of moderate persistent asthma. He has been well-controlled on a low-dose inhaled corticosteroid and a salbutamol inhaler as needed. Recently, Jacob's mother reported that he had been experiencing a constantly blocked nose for several months, especially at night, which was disturbing his sleep and resulting in increased use of his reliever inhaler.

Assessment:
Jacob was reviewed in a community asthma clinic. His asthma control test (ACT) score was suboptimal, and he reported frequent night-time coughing. On examination, he had nasal congestion, mouth breathing, and pale, boggy nasal mucosa. There was no fever or signs of infection. Spirometry was stable compared to previous results.

Further History:
Jacob's symptoms were worse in the spring and autumn and in the presence of dust or pet dander. He also experienced sneezing, itchy eyes, and occasional headaches. No significant findings on chest auscultation.

Diagnosis:
Based on the history and examination, Jacob was diagnosed with **allergic rhinitis**, contributing to his poor asthma control.

Management Plan:

Initiated once-daily **intranasal corticosteroid spray** (mometasone).

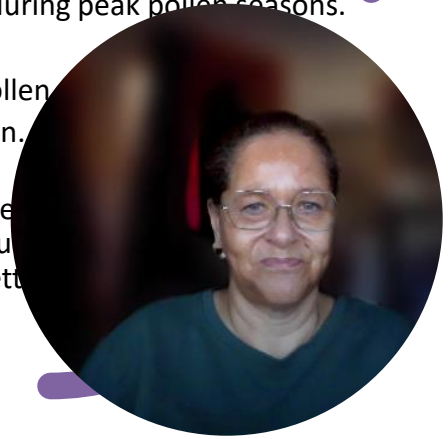
Advised regular use of **non-sedating oral antihistamine** during peak pollen seasons.

Provided nasal saline spray for symptom relief.

Education provided on allergen avoidance (dust mites, pollen

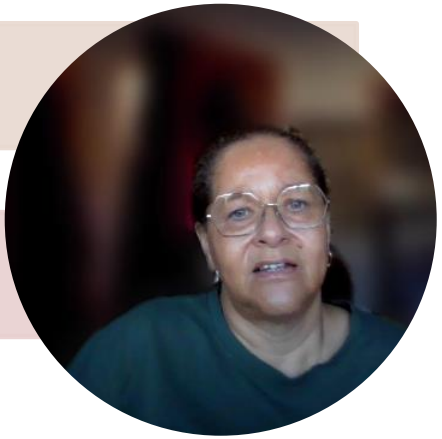
Reinforced good inhaler technique and asthma action plan.

Outcome:
At 6-week follow-up, Jacob's nasal symptoms had improve
asthma control had stabilised with reduced need for salbu
back in the well-controlled range, and he was sleeping bett



Quick Clinical Algorithm

Confirm	Confirm allergic rhinitis
Check	Check impact (sleep, school)
Start	Start nasal steroid
Consider	Consider SLIT if allergy confirmed
Refer	Refer if comorbidities or poor response



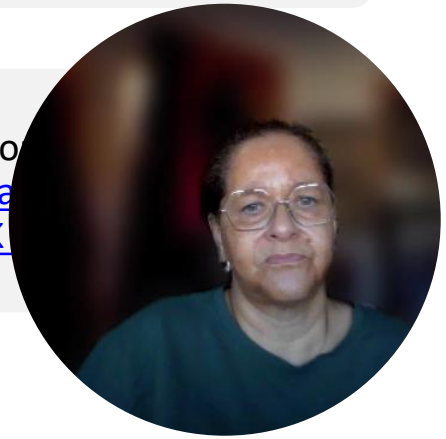
Resources

EUFOREA: www.euforea.eu

NICE Allergic Rhinitis Guidelines
Allergic rhinitis | Health topics A to Z | CKS | NICE

BNFc: Paediatric meds.

Patient leaflets fo
control. Example: Ha
Rhinitis | Allergy UK

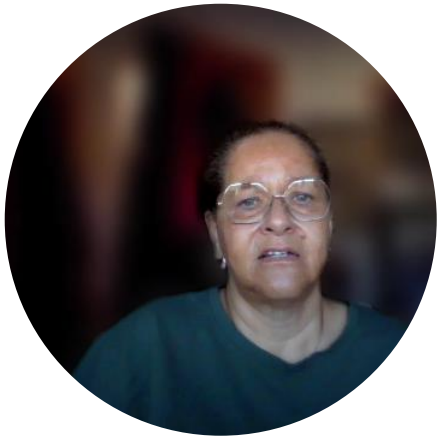


Final Thoughts

- Allergic rhinitis isn't "just a runny nose"

- Early, correct treatment prevents asthma

- Empower families with knowledge & routine
- Prevention starts with the nose!

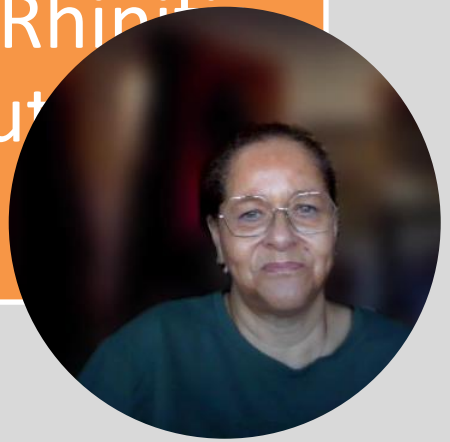


Key Takeaways

- Allergic Rhinitis is a major contributor to poor asthma control

Intranasal corticosteroids are first-line treatment

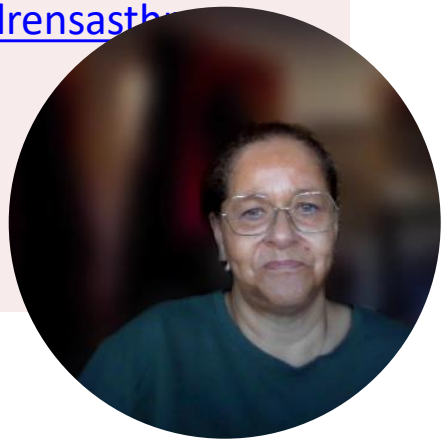
Addressing Allergic Rhini
improves asthma out
& QoL



Questions & Discussion

A recording and PDF of the webinar can be found by signing up with FutureNHS Collaboration Platform - FutureNHS Collaboration Platform and request to join the Surrey Heartlands Children & Young People's Asthma workspace.

CYP Asthma Team Email Address: syheartlandsicb.childrensasth[illegible]@nhs.net



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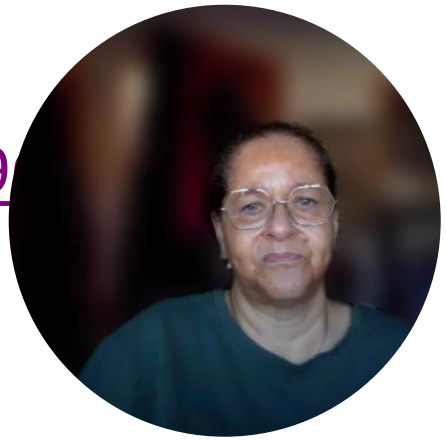

References

- Bousquet, J., et al. (2008). *Allergic Rhinitis and its Impact on Asthma (ARIA) Guidelines*. Allergy, 63, 8-160.
- PCRS in Conversation - Allergic Rhinitis | Primary Care Respiratory Society
- Scadding, G. K., & Kariyawasam, H. H. (2020). Allergic Rhinitis in Childhood: A Comprehensive Review. Paediatric Allergy and Immunology, 31(4), 345-356.
- Global Initiative for Asthma (GINA) (2024). Global Strategy for Asthma Management and Prevention.
- NICE Guidelines (NG245) (2024). Asthma: Diagnosis, Monitoring, and Chronic Asthma Management. O Asthma: diagnosis, monitoring and chronic asth management (BTS, NICE, SIGN) | Guidance | NI