# Allergic rhinitis in South Africa: 2012 guidelines

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**Keywords:** allergic rhinitis, South African guidelines 2012

## Abstract

Allergic rhinitis (AR) is an important disease in South Africa. The South African Allergic Rhinitis Working Group (SAARWG) has published previous guidelines on AR diagnosis and management. Areas of concern have arisen that require additional information, including the management of AR in infancy, appropriate and inappropriate allergy testing, the cost of AR management, diagnosis and distinguishing the condition from sinusitis, use of over-the-counter (OTC) medications and the concept of the "united airway". Clinicians should consider the possibility of AR in infants with recurrent nasal symptoms. Allergy testing must be used wisely and be based on local allergens. Total immunoglobulin E testing is not routinely required to prove allergy. Acute and chronic sinusitis should be considered in conjunction with AR. Treatment of rhinitis will improve these conditions. OTC medications should be used sparingly and with caution. Concern for long-term use of topical decongestants must be noted. Asthma should always be considered in AR diagnosis. Immunotherapy is available in South Africa and may be extremely useful in selected AR patients. The SAARWG has proposed an algorithm for the diagnosis and management of rhinitis in South Africa. AR is common, important and troubling to patients, so every effort should be made to target therapy correctly. Patient education is important in the management of AR.

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## Introduction

This report concerns problematic issues in the diagnosis and management of allergic rhinitis (AR) in South Africa, as reviewed by the South African Allergic Rhinitis Working Group (SAARWG) in February 2012.

## Allergic rhinitis in infants

Practical paediatric experience suggests that AR in infants, first reported in 1961, is not uncommon. However, its prevalence is unknown and complicated by inconclusive studies suggesting that "seasonal AR" is uncommon in the first two years of life.[2]

The 2003 prospective study on the influence of perinatal factors on the occurrence of asthma and allergies (PIPO) in Belgium surveyed 1 300 infants from the general population.[3] In the first phase of the study, 260 infants were monitored to the age of one year and subjected to a questionnaire, clinical examination and allergy testing. At the end of the first phase, 44% of the infants were reported to snore and breathe noisily, while positive allergy test results were reported in 21%. While this does not prove the existence of AR in infancy, it suggests that this diagnosis is probable in some infants.

The following symptoms should be sought where AR is considered in infants: noisy breathing, snuffles, snorting, snoring, sneezing, feeding difficulties, failure to thrive, irritability, disturbed sleep, watery nasal discharge, nose-rubbing on the pillow, bedding or mother, recurrent serous otitis media, and coughing and wheezing.

Features on examination that suggest AR in infants include: facial appearance (allergic facies); pallor; Dennie-Morgan lines; mouth-breathing; tongue thrusting; a pale, wet and swollen nasal mucosa; serous otitis media and atopic dermatitis (often present).

Skin-prick tests are useful for identifying allergens, even in very young children, and they require only a limited panel. The most common allergens originate from foods (especially milk, peanuts and wheat) and inhalants (especially house dust mite and cats and dogs).

There is no published literature on the manner in which to treat AR in infants. However, three aspects of treatment deserve mention:

- The avoidance of identified allergens and irritants (especially passive environmental tobacco smoke) is critical. Parents must also be advised to avoid unnecessary and potentially harmful therapies,

including most over-the-counter (OTC) cough and cold medications and topical decongestants. The use of a saline nasal preparation is strongly recommended.
- All forms of therapy for older children (including antihistamines, topical corticosteroids and montelukast) are not registered for use in infants. While their use is often necessary, clinicians must be careful to balance efficacy with safety.

## Laboratory-based allergy surveillance in private practice (2007-2011)

Allergy data from South Africa and Africa are limited, with infrequent updates on circulating aero-allergens and the possible impact of climate change. Existing studies are not generalisable, have small sample sizes and assess specific populations. Therefore, alternative ways to audit allergy data have been suggested, including laboratory surveillance of allergy test requests and identified allergens.[4]

To assess the usefulness of laboratory-based allergy surveillance, all allergy test requests and results from 1 September 2007 to 31 August 2011 were extracted from Lancet Laboratories (South Africa and Africa). Test results, including total immunoglobulin E (IgE), ImmunoCAP, immuno solid-phase allergen chip (ISAC), eosinophil cationic protein (ECP) and skin-prick tests were analysed, and data on trends (seasonal), location (country, province and district), doctor type and patient profile (age and sex) were collected.

In total, 1 150 493 allergy-related tests were requested (Table I), including 129 848 requests for total IgE. Although clinical information was not available, it is assumed that total IgE requests were used primarily as part of an allergy work-up. Most published allergy testing guidelines from South Africa and the rest of the world discourage the use of total IgE as a screening test for allergy.[5,6] The SAARWG stresses the importance of an adequate history in uncovering likely allergens as a source of AR.

The 2011 total paediatric allergy testing expenditure of the large healthcare funder, Discovery Health, approximated R10 million. ImmunoCAP testing contributed to 66% of the expenditure, while 11.2% was spent on total IgE testing in children aged ≤ 16 years (Discovery Health, 2010). Directed testing, according to established algorithms with appropriate screening and follow-up tests, must be emphasised in practice.

## Diagnosis of allergic rhinitis and sinusitis

AR is an inflammatory condition of the lining of the nose, characterised by nasal symptoms, including anterior or posterior rhinorrhoea, sneezing, nasal blockage and/or itching of the nose, often associated with ocular symptoms.[7] Itching, sneezing and profuse rhinorrhoea are classic of early AR. However, nasal obstruction manifests as a prominent symptom over time.[8] Ocular symptoms are itchy, red and watery eyes.[9]

The diagnosis of sinusitis is guided by a recent European position paper on rhinosinusitis and nasal polyps (EPOS).[10] The document makes the case that acute rhinosinusitis is often viral and relates to an upper respiratory tract infection (URTI) (Table II). Acute bacterial sinusitis may be considered when symptoms persist for longer than 10 days. The diagnosis of chronic sinusitis is warranted when symptoms persist for longer than 12 weeks.

## Allergic rhinitis and sinusitis treatment principles

Intranasal corticosteroids (INS) are the gold-standard, first-line therapy for moderate or severe and/or persistent AR.[10] Several studies found INS to be more effective than antihistamines against nasal symptoms.[7,11,12] INS treatment

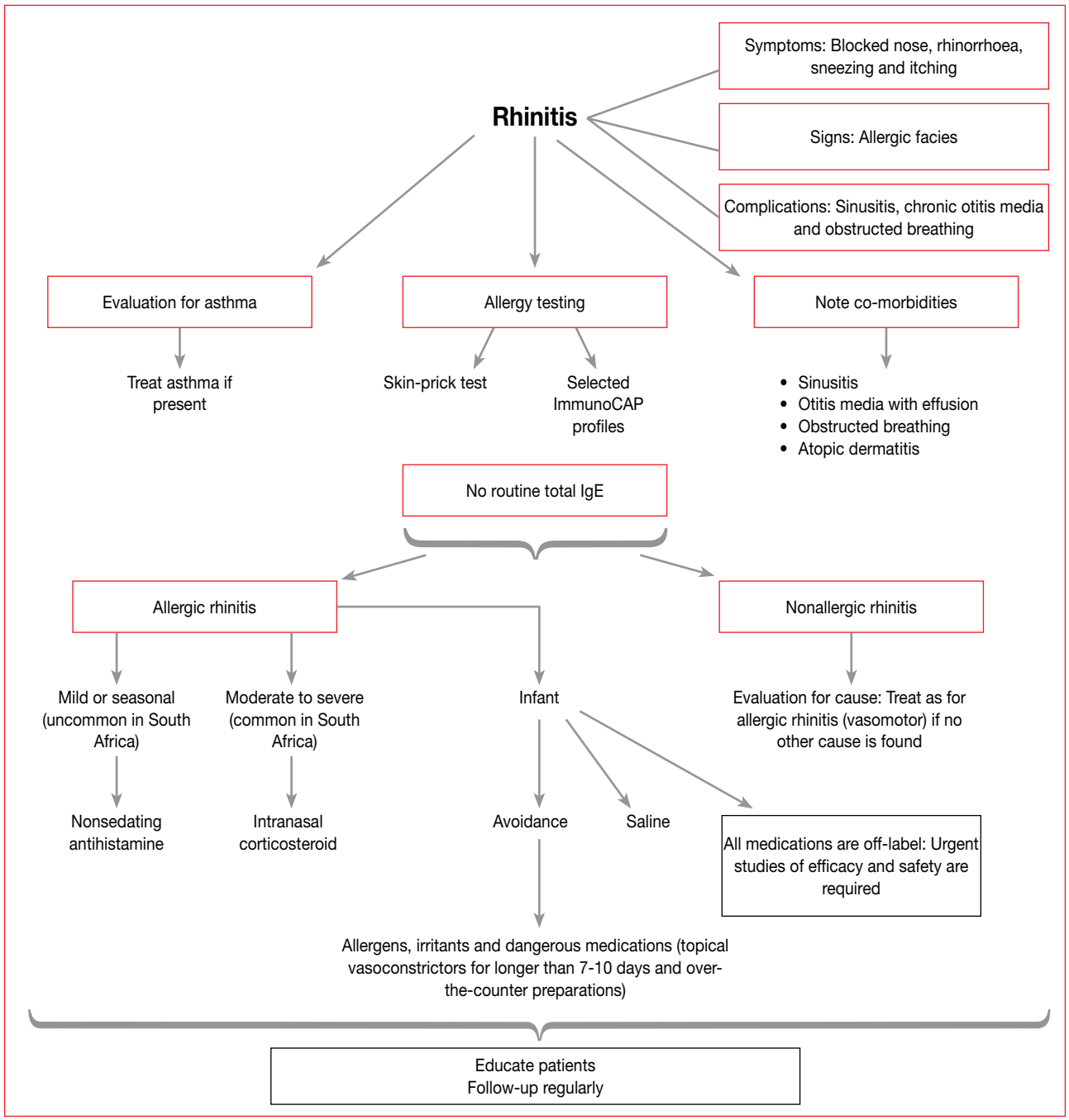
**Table I:** Allergy-related tests conducted by Lancet Laboratories, South Africa and Africa (2007-2011)

| Test | Number of tests performed (n) | | | | |
|---|---|---|---|---|---|
| | 1/9/2007 to 31/8/2008 | 1/9/2008 to 31/8/2009 | 1/9/2009 to 31/8/2010 | 1/9/2010 to 31/8/2011 | Total (1/9/2007 to 31/8/2011) |
| IgE | 30 199 | 32 488 | 33 520 | 33 641 | 129 848 |
| ECP | 363 | 324 | 314 | 132 | 1 133 |
| ImmunoCAP | 201 941 | 244 597 | 258 104 | 250 109 | 954 751 |
| ISAC | N/A | N/A | 309 | 1 854 | 2 163 |
| Skin-prick test | 14 442 | 15 902 | 16 255 | 15 999 | 62 598 |
| Total (n) | | 246 945 | 293 311 | 308 50 | |

ECP: eosinophil cationic protein, IgE: immunoglobulin E, ISAC: immuno solid-phase allergen chip, N/A: not applicable

**Table II:** Diagnosis of acute and chronic sinusitis

| Acute bacterial sinusitis | Chronic rhinosinusitis without nasal polyps | Chronic rhinosinusitis with nasal polyps |
|---|---|---|
| Anterior or postnasal discharge | Anterior or postnasal discharge | Anterior or postnasal discharge |
| OR | OR | OR |
| Nasal obstruction<br>± Facial pain or pressure<br>± Change in sense of smell | Nasal obstruction<br>± Facial pain or pressure<br>± Change in sense of smell | Nasal obstruction<br>± Facial pain or pressure<br>± Change in sense of smell |
| Lasts > 10 days and < 3 months*<br>Severe lasting purulence or temperature<br>Worsening in < 10 days | > 12 weeks and no nasal polyps | > 12 weeks and documented nasal polyps |




IgE: immunoglobulin E

**Figure 1:** Algorithm for the diagnosis and management of rhinitis

may optimise the control of co-morbidities such as asthma, sinusitis, conjunctivitis and otitis media.[13,14]

Acute bacterial sinusitis (ABS) is most often preceded by a viral URTI. Other factors that may lead to inflammation of the nose and paranasal sinuses and predispose to ABS include allergy, trauma and dental infection. Outcomes deemed necessary for managing ABS include eradication of bacterial pathogens from the site of infection, returning the sinuses to health, decreasing the duration of symptoms, preventing severe complications and decreasing the likelihood of chronic disease. There is mounting evidence that topical INS treatment is beneficial in managing ABS.[15,16]

## Evidence for the value of over-the-counter cough and cold medicines

OTC cough and cold medicines are frequently used by patients and often prescribed by doctors. Evidence is absent or negative for the efficacy for many of these preparations. Cough mixtures have no proven value in adults or children in upper (URT) and lower respiratory tract (LRT) pathologies.[17] Mucolytic agents have been studied and a meta-analysis of three studies reveals that they have some benefit in URTIs.[18] Oral decongestants and antihistamines have not demonstrated efficacy in most clinical conditions.[19,20]

The lack of efficacy and unfavourable safety profile of many agents is a major concern. The use of most agents in young children has recently been restricted in the USA.[21] However, even legal restriction has not shown changed prescription or usage patterns in many countries.[22]

Topical decongestants improve the major symptoms of nasal congestion in AR. However, their use may produce rhinitis medicamentosa, which may occur as early as day three in some patients. Their use should therefore be restricted to no more than 7-10 days.[23]

## The "united airway" concept: renewed interest

Despite discussion by world experts on the link between AR and asthma, the SAARWG believes that the evidence strongly supports the concept of a "united airway" and that the identification and management of both conditions (AR and asthma) improves symptoms and quality of life, reduces the severity of the disease and is cost-saving.[24-28]

The reasoning behind a link between AR and asthma centres on the systemic nature of inflammation in these conditions operating on a common epithelium in both sites.[29]

## Immunotherapy

Patients with persistent AR that is affecting quality of life and is resistant to maximal therapy should be assessed for sensitisation. Patients who are monosensitive or "clinically monosensitive", i.e. sensitised to more than one allergen, but with a clear pattern demonstrating one allergen as the important one, should be offered immunotherapy.[30]

## Algorithm for the diagnosis and management of rhinitis

An algorithm proposed by the SAARWG for the diagnosis and management of rhinitis in South Africa is presented Figure 1.

## Conclusion

AR is common, important and troubling to patients. Therefore, every effort should be made to target therapy correctly. Patient education is important in the management of AR.

## Endorsements

This guideline is endorsed by the Allergy Society of South Africa.

## Acknowledgements

The SAARWG acknowledges an unrestricted grant from Aspen/GSK Pharmaceuticals for sponsorship of the working group meeting on 10-12 February 2012, where these guidelines were reviewed.

**SAARWG members:** G Carter, G Des Marais, C Els, C Gravett, I Hunt, M Ossip, OF Jooma, A Manjra, L Maron, A Mc Cullogh, M McDonald, PC Potter, R Seedat and L Woolf.

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