

AIT in 2026

Practice-Parameter Updates, Pollen Shifts & South African Considerations

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Disclosures & Important Note on Draft Practice Parameter Status

This lecture draws substantially on the 4th update of the JTF Allergen Immunotherapy Practice Parameter (AITPP) for the treatment of aeroallergen-induced disease

- Emphasis on new evidence since 2010 & preference for North America extract products
- All recommendations and CoE shown are in DRAFT form — under formal review by the Joint Task Force on Practice Parameters (JTFPP), and members of the AAAAI and ACAAI— and subject to change
- This is a traditional practice parameter — not a formal GRADE guideline — but it separates strength of recommendation from certainty of evidence.
- The parameter is North-American in scope; product availability and usage will differ in South Africa.
- Climate/pollen content is drawn from the published literature (NA & Europe) and unpublished University of Cape Town Lung Institute research

Abbreviations & How to Read the Recommendations

AIT — allergen immunotherapy

SCIT — subcutaneous immunotherapy

SLIT-T — sublingual immunotherapy – tablet

SLIT-L — sublingual immunotherapy – liquid

AR / AC — allergic rhinitis / conjunctivitis

AA — allergic asthma

AD — atopic dermatitis

HDM — house dust mite

Rec — recommendation

SoR — strength of recommendation

CoE — certainty of evidence

SDM — shared decision-making

Format adapted from GRADE-style reporting (Chu, Golden, Guyatt. JACIP 2021).

How to read each recommendation

Strength of Recommendation (SoR):

- Strong = “We recommend”
- Conditional = “We suggest”

[Utilize Shared decision-making]

Certainty of Evidence (CoE):

- High → Moderate → Low → Very Low

DRAFT = wording not yet final

SoR: Conditional

CoE: Moderate

DRAFT

Roadmap

1. Climate change, pollen shifts (emphasis on South African)
2. The 2026 JTF AIT Practice Parameter — what's new
 - a) Patient selection
 - b) Efficacy of SCIT and SLIT
 - c) Safety
 - d) Prescribing and administering AIT (emphasis on South Africa)
 - e) Future directions



Climate Change, Pollen Shifts-- Emphasis on South African

Will allergen immunotherapy demand rise with climate change?



Climate Change is Lengthening Pollen Seasons

North America, 1990–2018 (60 monitoring stations)¹

- Pollen season start shifted **~20 days earlier**
- Season duration extended by **~8 days**
- Annual pollen concentrations increased **+21%**
- Climate change accounts for **~50%** of season length changes
- Largest increases: Texas and Midwestern US
- Tree pollen season duration increased **+0.47 wks/yr**

+20

days earlier start

+21%

pollen concentration

+8

days longer season

~50%

due to climate change

60 North American cities

- **821 site-years of data**
- **1990–2018**

1) Anderegg WRL, et al. Proc Natl Acad Sci US A. 2021;118:e2013284118. (US & Canada) 2) Zhang Y, Steiner AL. Nat Commun. 2022;13:1234. (US) 3) Paudel B, et al. Sci Rep. 2021;11:12816.(US)

Climate Change Increases Pollen Allergenicity

How Climate Change Affects Pollen Quality

- Elevated CO₂ increases plant pollen production and prolongs flowering^{1,2}
- Ragweed (Ambrosia) pollen: up to **1.7x more allergenic by 2100²**
- Temperature is an independent driver — pollen allergenicity rises with warming
- In vitro and in vivo studies confirm stronger IgE-mediated response from CO₂-exposed pollen ¹
- Air pollution (ozone, diesel) synergizes with CO₂ to further damage pollen surface proteins

1) Rauer D, et al. *Allergy*. 2021;76:1718-1730. (Germany)

2) Singer BD, et al. *Funct Plant Biol*. 2005;32:667-670. (US)

3) Wayne P, et al. *Ann Allergy Asthma Immunol*. 2002;88:279-282. (US)

1.7x

more allergenic

+CO₂

increased potency

Mechanism

Elevated CO₂ → faster plant growth
→ prolonged flowering → more pollen grains per plant

Higher temperatures → altered pollen protein expression → increased allergenic load per grain

Combined effect: more overall AND more allergenic exposure

Mold & Fungal Spores: Expanding Seasons

Fungal spore seasons are also expanding under warming — with clinical implications for allergic asthma and rhinitis

Key Findings

- Cladosporium season extended **20–60 days**¹
- Earlier season start AND later end — with just 1–2°C warming (Poland data)¹
- Alternaria: peak concentrations exceed clinical threshold (>100 spores/m³) in more locations^{1,2}
- Median Cladosporium peaks: ~18,827 spores/m³;
Alternaria: ~665 spores/m³^{1,2}
- Mediterranean climates expected to worsen more than Northern Europe²
- Mold spore season duration increased by **+0.51 wks/yr**
- Warm, dry weather accelerates and elongates mold seasons^{1,2,3}

1) Kasprzyk I, et al. *Aerobiologia*. 2016;32:109-126. (Poland)

2) Anees-Hill S, et al. *Sci Total Environ*. 2022;818:151716. (Europe)

3) Paudel B, et al. *Sci Rep*. 2021;11:12816. (US)

20–60

extra days
Cladosporium
season

+0.51

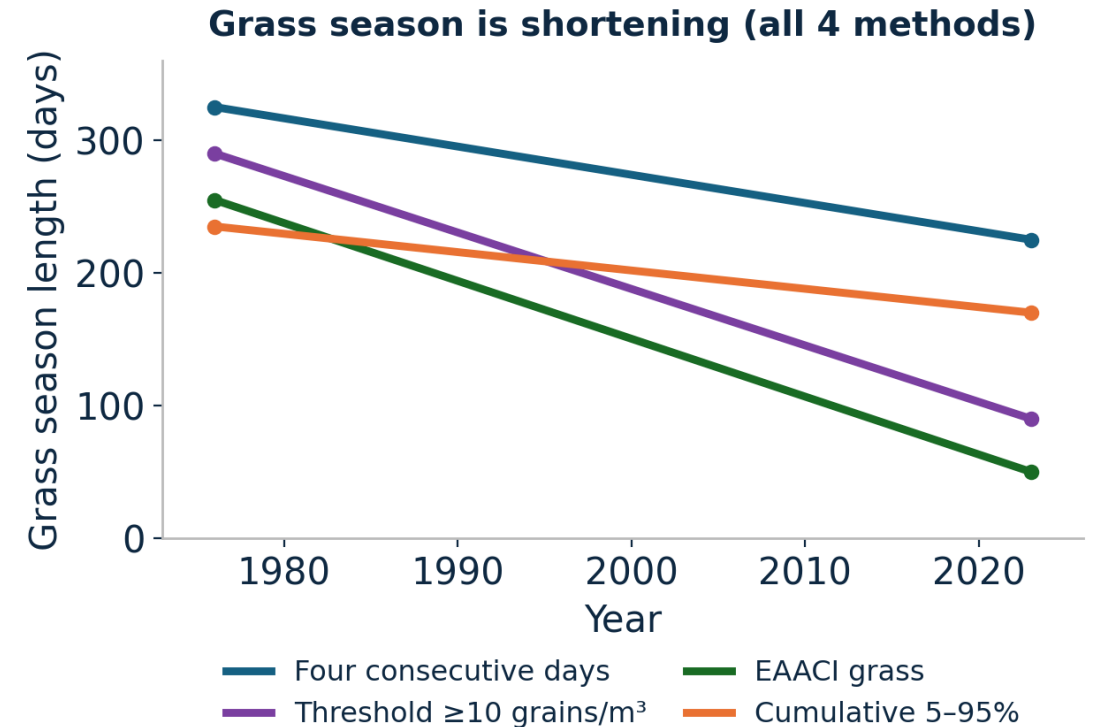
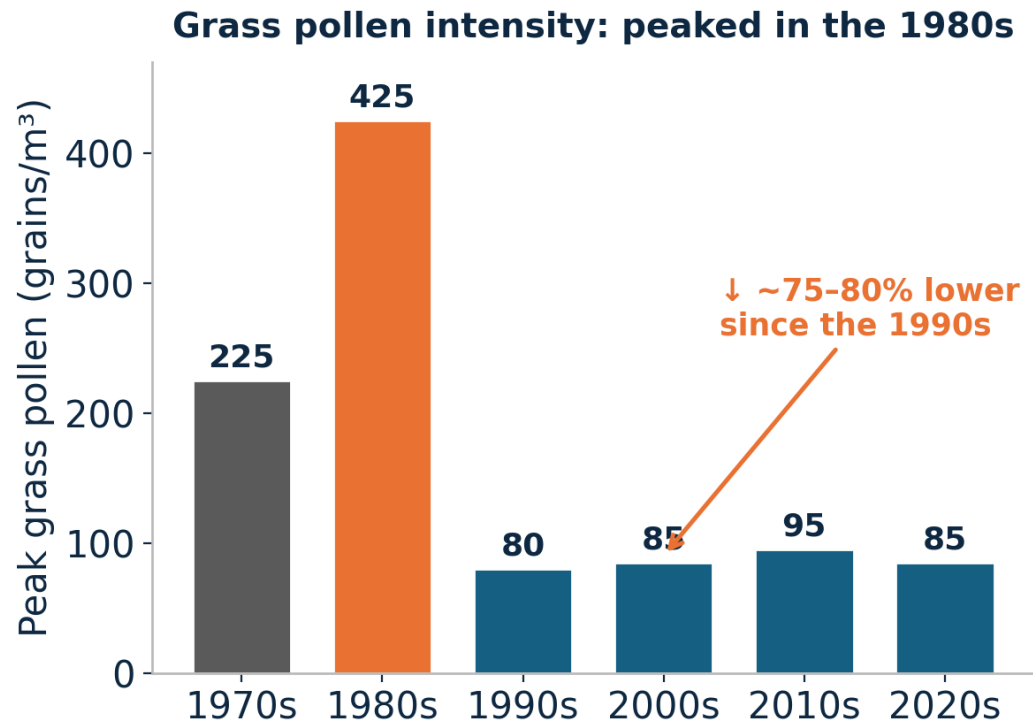
wks

per year longer
mold spore season

South Africa Context

Alternaria and Cladosporium are the most clinically relevant mold allergens in SA. SAPNET monitoring includes fungal spores. Climate projections suggest southern African mold seasons will lengthen, with implications for asthma management.

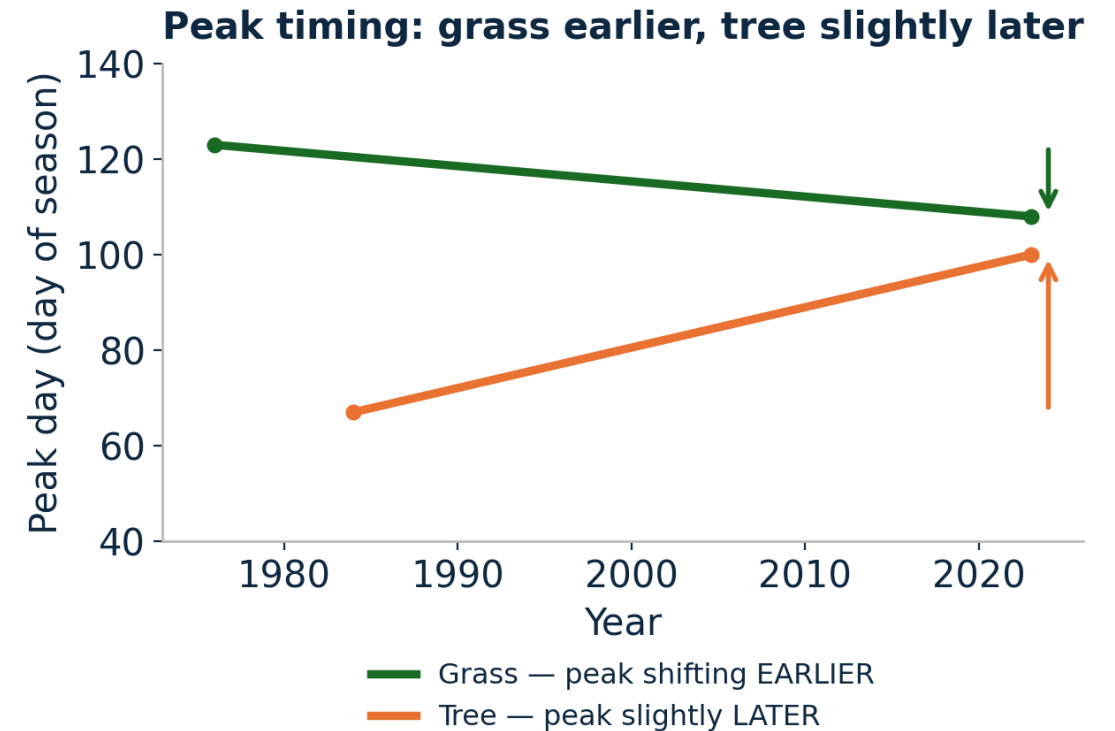
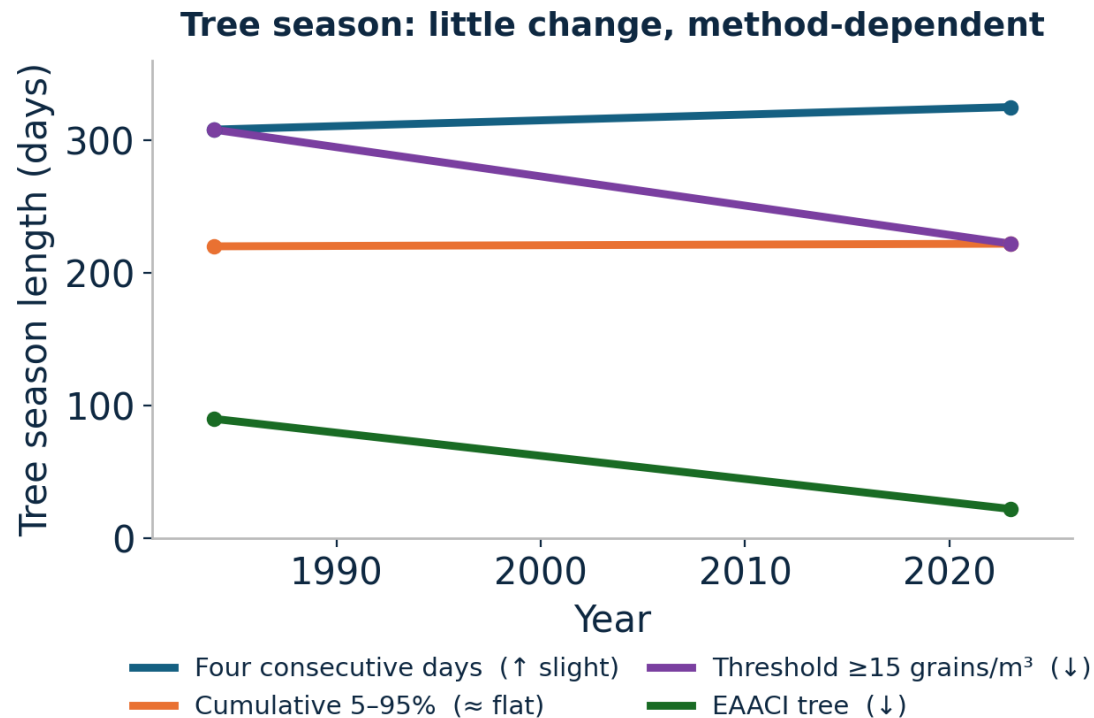
Cape Town Grass Pollen — Less, Not More (1976–2023)



Grass pollen intensity peaked in the 1980s and has fallen ~75–80% since; the grass season is shortening (later start, earlier end).

Source: T. Matuvhunye, Postdoctoral Fellow, University of Cape Town Lung Institute. Cape Town aerobiology record (~1976–2023); figures redesigned for clarity.

Cape Town Tree Pollen & Peak Timing



Tree season shows little net change (direction depends on method). Peak timing shifts: grass earlier, tree slightly later.

Source: T. Matuvhunye, Postdoctoral Fellow, University of Cape Town Lung Institute. Cape Town aerobiology record (~1976–2023); figures redesigned for clarity.

Reconciling Cape Town with the Global Climate–Pollen Story

Global literature (mostly N. Hemisphere)

- Pollen season starts ~20 days earlier
- Season ~8 days longer
- Annual pollen +21% (≈50% climate-driven)
- Some pollens more allergenic

Cape Town, 50-year record

- Grass intensity ↓ (peaked in 1980s)
- Grass season shorter (later start, earlier end)
- Tree season: little change, varies by method
- Grass peak earlier; tree slightly later

Pollen responses to climate change are REGIONAL. Cape Town's winter-rainfall (Mediterranean) climate with limited rainfall and drying likely drives the divergence — plan AIT from local aerobiology, not extrapolation.

Allergy Immunotherapy: Global Overview

• Routes of AIT

SCIT (Injections)

Gold standard; up dosing + maintenance; clinic visits required

SLIT Drops

Home administration; glycerinated native extracts (e.g. Oraltek/Immunotek in SA)

SLIT Tablets

EMA/FDA approved for specific allergens (grass, HDM); not all registered in SA

Venom IT

SCIT only; bee/wasp; highly effective

• Global Market Share

SCIT

~55–66% of global AIT market (dominant, slower growth)

SLIT

~34–45% market share; fastest growing (CAGR ~15%)

SLIT Tablets

54% of SLIT segment; drops 46%

Global market: USD ~1.95B (2024) → USD ~4.5B (2034)
CAGR: ~8.7%

• Evidence-Based Indications

Allergic Rhinitis

Strongest evidence; 3-year course recommended

Allergic Asthma

Reduce severity; may prevent new sensitisations

Venom Allergy

90–95% protection; lifelong in high-risk patients

Atopic Dermatitis

Benefit with aeroallergen sensitisation (emerging evidence)

AIT is used in <10% of eligible patients globally

Despite robust efficacy evidence — the most undertreated disease-modifying therapy in medicine.



The 2026 JTF AIT Practice Parameter

What's new & how it was made



Mechanism of AIT involves early changes and sustained tolerance

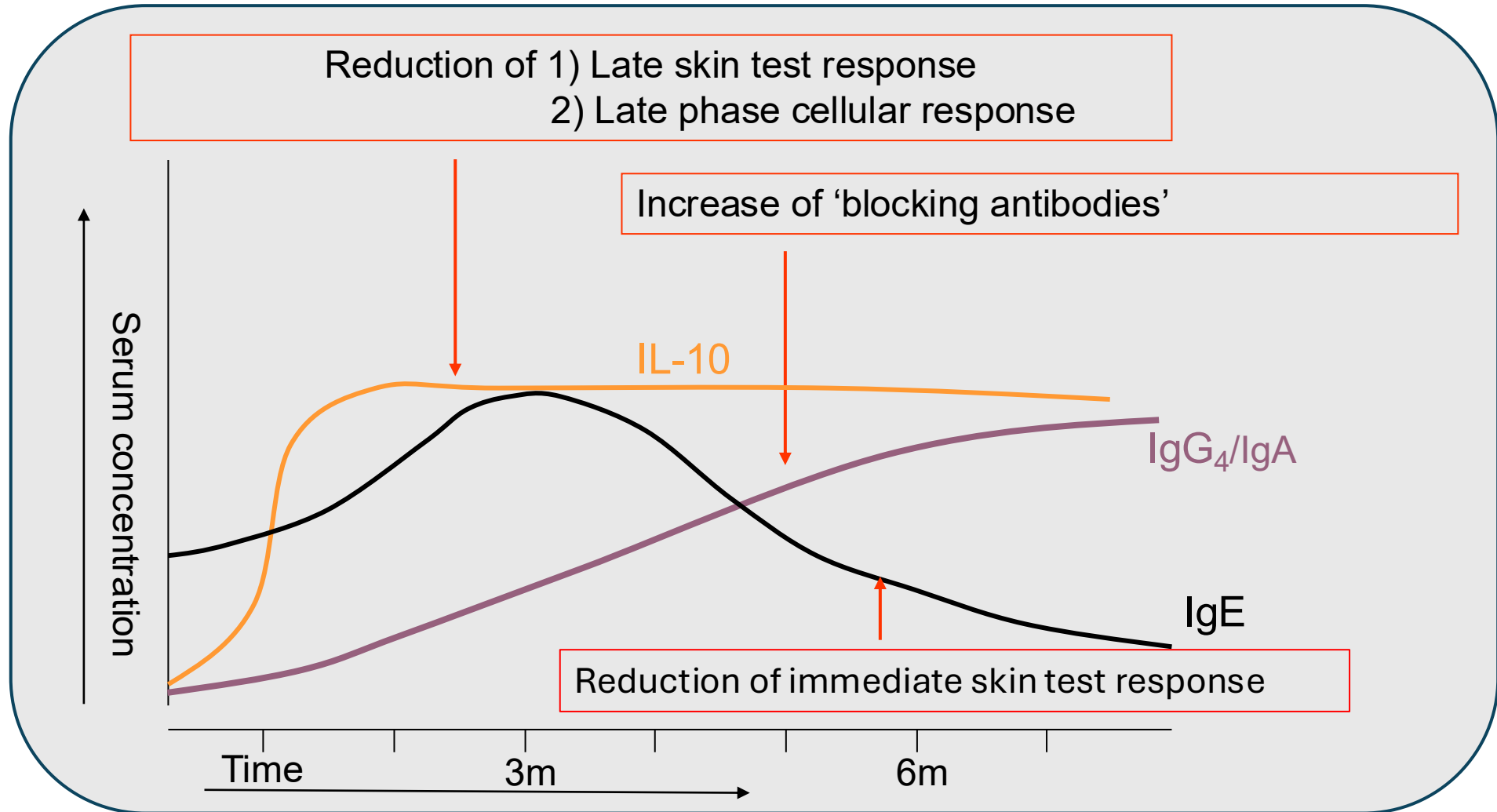
Early changes (days–weeks)

- Mast cell & basophil desensitization; ↓ early-phase reactivity
- Induction of regulatory T cells (Treg) with resultant IL-10 & TGF- β production, and regulatory B cells
- Shift away from Th2 cytokines (IL-4, IL-5, IL-13)

Sustained / disease-modifying

- ↑ Allergen-specific IgG4 'blocking' antibodies; ↓ IgE over time
- Reduced tissue eosinophil & mast cell recruitment
- Long-term tolerance persisting after a 3+ year course

Timing of Antibody & Skin Test Changes



Biomarkers Do Not Guide AIT

We suggest AGAINST using immunologic markers/biomarkers (specific-IgE, skin prick test, or specific-IgG4 quantification) to predict or assess the clinical efficacy of SCIT/SLIT.

SoR: Conditional

CoE: Low

DRAFT



Patient Selection

Section 2 of the practice parameter



Core Indications for AIT

We recommend AIT for allergic patients with AR, AA, and/or moderate to severe AD associated with allergen exposure and with persistent symptoms/signs despite medication and environmental control or intolerance to medications or reluctance or incapacity to implement environmental control or hesitancy to continue with long-term use of medications.

SoR: Strong

CoE: High

DRAFT

We recommend a documented shared decision-making discussion prior to AIT on the risks and benefits of AIT and the patient's preference

SoR: Strong

CoE: Low

DRAFT

Prevention of Asthma & Treatment of Atopic Dermatitis & EoE

We suggest aeroallergen SCIT and SLIT to help **PREVENT the development of AA** in children with AR

SoR: Conditional

CoE: Moderate

DRAFT

We recommend SCIT and SLIT for children with moderate-to-severe AD (with relevant aeroallergen sensitisation).

SoR: Strong

CoE: Low

DRAFT

We suggest that SCIT may be considered as an adjunct treatment option for clinically relevant aeroallergens in select patients with EoE who are poorly responsive to standard treatments and have comorbid **allergic rhinitis**.

SoR: Conditional

CoE: Very Low

DRAFT

AIT Across the Age Spectrum

Adults of any age, including >65 years: SCIT and SLIT should be considered when standard eligibility criteria are met.

SoR: Strong

CoE: Moderate

DRAFT

Children aged ≥ 4 years with AR: we suggest SCIT and SLIT if other eligibility criteria are met.

SoR: Conditional

CoE: Moderate

DRAFT

Use the SAME dose, dosing schedule, and duration in children as in adults.

SoR: Strong

CoE: Low

DRAFT

Comorbid Urticaria & Mastocytosis

Co-existing chronic spontaneous urticaria: we suggest NO adjustment to the SCIT/SLIT dose for treating AR/AA.

SoR: Conditional

CoE: Very Low

DRAFT

Criteria-established systemic mastocytosis: we suggest AGAINST aeroallergen SCIT due to potential increased anaphylaxis risk.

SoR: Conditional

CoE: Very Low

DRAFT

AIT in Pregnancy

Continue SCIT or SLIT at the last tolerated dose without dose escalation during pregnancy, after shared decision-making.

SoR: Conditional

CoE: Low

DRAFT

We suggest AGAINST INITIATING SCIT during pregnancy.

SoR: Conditional

CoE: Very Low

DRAFT

Immunodeficiency, Autoimmunity & Malignancy

AIT for AR and/or AA is an OPTION in patients with primary or secondary immunodeficiency.

SoR: Conditional

CoE: Very Low

DRAFT

AIT for AR and/or AA is an OPTION in patients with comorbid autoimmune disease.

SoR: Conditional

CoE: Very Low

DRAFT

Malignancy: we suggest consultation with the patient's oncologist when initiating/continuing AIT.

SoR: Conditional

CoE: Very Low

DRAFT



Efficacy of SCIT and SLIT

Section 3 of JTFPP practice parameter— the core evidence



Types of Allergen Extracts for SCIT — U.S., Europe & South Africa

Extract Type	Description	U.S.	Europe	South Africa
Aqueous	Saline-based; no stabilizer; mixable; fast absorption; ↑ systemic-reaction risk	~60–70%	<5% (mostly venom)	Limited; imported
Glycerinated	50% glycerin; longer shelf life; viscous; slower absorption	~30–40%	Rare	Limited; imported
Aluminium / tyrosine adsorbed (depot)	Depot; slower release; fewer systemic reactions; not mixable	Not available	~70–80%	Main SCIT type — imported (e.g., Alutek)
Allergoids	Chemically modified; ↓ allergenicity & IgE binding; rapid, safe build-up	Not available	~20%	Available — imported (e.g., Alxoid)
Lyophilised	Powdered; reconstituted for use	Venom	Venom	Venom (e.g., Venox)

South Africa: no locally manufactured / SAHPRA-registered AIT products – all are imported from Spain

Extract data (U.S./Europe): Dhami 2017; Mahler 2019; Jensen-Jarolim 2021. South Africa: Jaye T. Curr Allergy Clin Immunol 2019;32(2):91–95.



SCIT for pollen and HDM-induced AR: Single Allergen has the strongest evidence Adult evidence stronger than that for children

We recommend single-allergen pollen or HDM SCIT for adults and children with seasonal or perennial AR when a single allergen is a major cause of symptoms.

SEASONAL	SoR: Strong	CoE: High (SAR adults)	CoE: Moderate (SAR children)	DRAFT	
PERENNIAL	SoR: Strong	CoE: Moderate (PAR Adults)	CoE: Moderate (PAR children)	CoE: Low	DRAFT

SCIT for Asthma & Fungal Allergy

We suggest single-allergen SCIT for allergic asthma when a single allergen (pollen or dust mite) is likely the major contributor.

SoR: Conditional

CoE: Low

DRAFT

Fungal (mold) SCIT may be considered in selected patients with fungal allergy.

SoR: Conditional

CoE: Very Low

DRAFT

SCIT for Animal Allergens

Cat SCIT for patients with AR and/or AA and symptoms on cat exposure.

SoR: Conditional

CoE: Low

DRAFT

Dog SCIT (minimum 15 µg Can f 1 per maintenance dose) for symptomatic dog-exposed patients.

SoR: Conditional

CoE: Very Low

DRAFT

Laboratory-animal or horse SCIT for patients with occupational/recreational exposure.

SoR: Conditional

CoE: Very Low

DRAFT

SCIT & Prevention

We recommend AGAINST SCIT to prevent AR/AA in ASYMPTOMATIC (non-sensitized or sensitized but no symptoms or disease state)

SoR: Strong

CoE: Moderate

DRAFT

We suggest SCIT in patients with AR and/or AA to help prevent the development of additional sensitizations.

SoR: Conditional

CoE: Very Low

DRAFT

AIT Prevention of Allergic Disease — 2026 Evidence

Primary Prevention (prevention of allergic sensitization)

- AIT shows NO allergen-specific effect, but a transient, NON-allergen-specific effect on new sensitizations

Secondary Prevention (prevention of a first allergic disease in sensitized individuals)

- AIT in preschool children may induce pro-tolerogenic mechanisms (one study only)

Tertiary Prevention (prevention of a secondary allergic disease or long-term reduction of symptoms)

- Grass/tree pollen SCIT prevents asthma in children with AR/C (mainly PAT study) — strongest evidence
- HDM and other allergens: effect inconclusive
- SCIT vs. SLIT: comparable preventive effect; SCIT may have longer-lasting humoral effects
- Higher AIT doses associated with greater immunomodulatory effects; higher dose safety may favour SLIT
- **Heterogeneous multi-allergen mixtures did NOT show a preventative effect**

SCIT — Duration & Long-Term Efficacy

Single-allergen SCIT (at effective doses) for a MINIMUM of 3 years to achieve long-term efficacy lasting ≥ 2 years after stopping.

SoR: Conditional

CoE: Moderate

DRAFT

AIT may be extended beyond 5 years for patients who highly value avoiding medication — with SDM— however, there is no proven added benefit beyond 5 years.

SoR: Conditional

CoE: Low

DRAFT

Duration of Efficacy After Stopping AIT: limited long-term data

SCIT: Sustained Efficacy Post-Discontinuation

- Ariano 1999 (Parietaria, 3 yr SCIT; active pts=**35**): AR symptom relief maintained at 4-yr follow-up
- Möller 2002 / Jacobsen 2007 (Grass/birch, 3 yr SCIT; active pts=**79**): Reduced asthma development at **2 yr**; sustained relief & asthma prevention at 7 yr follow-up (PAT study)
- **Eng 2006 (Grass, 3 yr SCIT; active pts=13): AR symptom control maintained up to 12 years post-SCIT**
- Tabar 2011 & Stelmach 2012 (HDM, 3–5 yr SCIT; active pts=**52, 41**): 50% asthma remission sustained at 2–3 yr follow-up
- Arroabarren 2015 (HDM, 5 yr vs. 3 yr; active pts. 31, **40**): 3-yr group AR and asthma improved and **remained improved 2 yrs** after discontinuation. **5-yr** group showed 30% additional improvement in AR global severity scores (but not statistically significant).

Studies cited: Möller/Jacobsen (PAT), Tabar, Stelmach, Arroabarren, Di Rienzo, Wahn, Yonekura, Zeng. SCIT follow-up 2–12 yrs; SLIT follow-up 2–5 yrs post-discontinuation.

Duration of Efficacy After Stopping AIT: limited long-term data

SLIT: Sustained Efficacy Post-Discontinuation

- Di Rienzo 2003 (HDM SLIT-drops, 4–5 yr of AIT; active pts=35): At 5 yrs post cessation: Reduced asthma, medication use & improved PFT; no new sensitizations
- Wahn 2012 (5-Grass SLIT-tablet, 3 yr; **131**): Sustained AR relief (28% > placebo) at 2 yr post-treatment
- Yonekura 2021 (Japanese Cedar SLIT-tablet, 3 yr; active pts 150): 34% relative reduction in TNSMS at 2 yr follow-up
- Zeng 2023 (**HDM SLIT-drops**, 3 yr group; active pt=306: Improved CSMS & tolerance markers; only 3-yr treatment group (not 1 or 2 yr tx group) showed long-term effect at 2 yr follow-up

Key message: Both SCIT and SLIT provide sustained benefits post-discontinuation — BUT only after adequate treatment duration (≥3 years). Shorter courses are insufficient. Follow-up is rarely longer than 2 years

Multi-Allergen SCIT — The Evidence Gap

We suggest multi-allergen SCIT when symptoms are caused by more than one allergen.

SoR: Conditional

CoE: Low

DRAFT

Include the SMALLEST number of relevant allergens, each at a maintenance dose shown effective in single-allergen studies; treat ≥ 3 years.

SoR: Conditional

CoE: Low–Very Low

DRAFT

Repeat Testing During / After SCIT

We recommend AGAINST routine repeat skin/sIgE testing during or after successful SCIT solely to guide continuation/discontinuation.

SoR: Strong

CoE: Moderate

DRAFT

Repeat testing IS suggested as part of assessment when new sensitisation is suspected after 3–5 years of partially successful SCIT.

SoR: Conditional

CoE: Low

DRAFT

SLIT-T is efficacious for House Dust Mite AR

We recommend HDM SLIT-tablets for HDM-allergic adults and children (≥ 5 yr) with AR, to reduce symptoms and medication use.

SoR: Strong

CoE: High

DRAFT

Inform patients that the HDM SLIT-tablet becomes effective after ~8–14 weeks of treatment.

SoR: Conditional

CoE: Moderate

DRAFT

SLIT-T for HDM — Asthma & AD

HDM SLIT-tablets for adults and children with mild-to-moderate allergic asthma — reduce symptoms and ICS dose.

SoR: Strong (adults); Conditional (children)

CoE: High (adults)

CoE: Modate (children)

DRAFT

HDM SLIT-tablets to reduce asthma EXACERBATIONS.

SoR: Conditional

CoE: Low

DRAFT

HDM SLIT-tablets for moderate-severe atopic dermatitis.

SoR: Conditional

CoE: Moderate

DRAFT

SLIT-T for Grass Pollen for AR has high CoE; Asthma has low CoE

We recommend pre-/co-seasonal or perennial Northern-grass SLIT-tablets for grass-allergic adults and children with AR.

SoR: Strong

CoE: High

DRAFT

Three years of grass SLIT-T reduces AR symptoms for ≥ 2 years after stopping (long-term efficacy).

SoR: Strong

CoE: High

DRAFT

Three years of grass SLIT-T also reduces allergic-asthma symptoms post-discontinuation (long-term efficacy).

SoR: Conditional

CoE: Low

DRAFT

SLIT-T Efficacy of Ragweed & Trees high CoE for AR, lower for AA

Ragweed SLIT-tablets for adults and children (>5 yr) with ragweed **AR** (pre-/co-seasonal or perennial).

SoR: Strong

CoE: High

DRAFT

Ragweed SLIT-tablets for mild-moderate ragweed **AA**; treat 3–5 years.

SoR: Conditional

CoE: Moderate (Children)

CoE: Low (adults)

DRAFT

Birch and Japanese-cedar pollen SLIT for tree-pollen **AR** ±conjunctivitis for patients ≥5 yr., where available.

SoR: Strong

CoE: High

DRAFT

SLIT — Polyallergic Patients, Tablets & Liquid

Polyallergic AR: use Single SLIT-T with the dominant allergen; use a limited # of multiple SLIT-tablets.

SoR: Conditional

CoE: Low (1 tablet)

CoE: Very Low>1

DRAFT

We recommend FDA-approved SLIT-tablets over off-label SLIT liquid/extracts for AR and AA.

SoR: Strong

CoE: Low

DRAFT

SLIT-liquid (on and off-label) is an option for allergens lacking a tablet, in patients valuing fewer visits / lower risk than SCIT — dose within proven ranges; using extrapolated evidence.

SoR: Conditional

CoE: Low

DRAFT

SCIT vs SLIT — Which is Better?

2023 Systematic Review and Meta-Analysis — Yang & Lei, Frontiers in Immunology

50 studies, 10,813 AR children (SLIT n=4,122; SCIT n=1,852; control n=4,839)

- Only a few head-to-head trials available — both direct and indirect comparisons performed

Direct Comparison (SLIT vs. SCIT)

- Symptom scores (SS): No significant difference [3 studies]
- Medication scores (MS): No significant difference [2 studies]
- Combined symptom/medication score (CSMS): SLIT favored ($P < 0.0001$) [1 study]
- Treatment-related adverse events (TRAEs): **SLIT significantly safer (pooled RR 0.17; 95% CI 0.11–0.26)**
- Subset analysis: With AIT >24 months, symptom scores significantly lower in SCIT group ($P < 0.001$)

Conclusion (indirect comparison): SLIT vs. SCIT — No difference in efficacy but SLIT is safer



Safety

Section 4 of JTFPP practice parameter— adverse events, premedication & schedules



SCIT Safety: Systemic Reactions, Fatalities

Systemic Reactions & Fatalities — Quantifying the Risk (US data)

- Severe anaphylaxis: 1 per million injections
- Fatal reactions: 1 per 7.2 million injections
- 10 fatalities reported in the AAAAI US survey 2008-2018

SCIT & SLIT systemic Reactions & Fatalities — Prevention

- SCIT: Highest-risk windows: dose build-up (vs. maintenance)
- SCIT: Key risk factors: uncontrolled asthma, high degree of sensitivity, dosing errors, symptomatic season, prior systemic reaction.
- SCIT: Mitigation: confirm asthma control (e.g., ACT or measure peak flow), 30-minute observation, immediate epinephrine availability, well-trained staff.
- SLIT: systemic reactions are far less frequent; **no SLIT fatalities** reported across >1 billion doses.

Premedication for SCIT- Conventional SCIT build-up

We recommend AGAINST using H1-antihistamines to reduce anaphylaxis risk during CONVENTIONAL (non-accelerated) SCIT build-up.

SoR: Strong

CoE: Moderate

DRAFT

Accelerated Schedules (Cluster / Rush) using SCIT & Premedication

Cluster build-up is an option in AR $\pm$ asthma — only if asthma is not severe and is controlled.

SoR: Conditional

CoE: Moderate

DRAFT

We recommend oral antihistamine + leukotriene-receptor-antagonist pretreatment during cluster or rush build-up.

SoR: Strong

CoE: Moderate

DRAFT

For 1-day rush / modified rush, we suggest antihistamine + LTRA + oral corticosteroid; convert cluster to conventional at the 1:10 v/v vial.

SoR: Conditional

CoE: Moderate–Low

DRAFT

SCIT Local Reactions

Local Reactions (LLRs)

- Occur in 26–86% of patients: itching, redness, swelling, heat at injection site
- **Local reactions have only 12% predictive value for future systemic reactions**
- For persistent large local reactions, consider:
 - Cool compress immediately post-injection
 - Pre-medication with non-sedating H1 antihistamines
 - Temporary dose adjustment if reactions are frequent or distressing

Local Reactions to SCIT (LLRs)

We recommend AGAINST using large local reactions (LLRs) to routinely predict the risk of subsequent systemic reactions.

The benefit of routine premedication to prevent LLRs is unknown.

SoR: Conditional

CoE: Low

DRAFT

We suggest AGAINST routine SCIT dose adjustment for most patients with LLRs.

SoR: Conditional

CoE: Moderate

DRAFT

We suggest AGAINST epinephrine/antihistamine syringe rinses to prevent LLRs.

SoR: Conditional

CoE: Low

DRAFT

SLIT Local Adverse Effects

Local Side Effect	Approximate Frequency	Typical Duration
Oral pruritus (itching)	40–85%	Usually resolves within 4–10 days
Throat irritation	13–20%	Typically subsides within the first week
Mouth edema (swelling)	10–15%	Generally diminishes within 1–2 weeks
Lip/tongue swelling	5–10%	Often resolves within a few days
Gastrointestinal discomfort	5–10%	Usually transient; resolves within a few days; rare case reports EoE
EoE: 9 pediatric; 7 adults	14/16 drops; 2/16 tablets	Usually manifests in build-up phase; improves or resolves with discontinuation

Seidenberg, J. et al. (2009). Journal of Investigational Allergology and Clinical Immunology 19(Guidelines): 125-131. Passalacqua, G. et al. (2013). Journal of Allergy and Clinical Immunology **132**(Guidelines): 93-98. Biedermann, T (2023). et al. International Archives of Allergy and Immunology **184**(1): 1-10. Wallace, DV. Pediatric Allergen Immunotherapy in the United States: Current Practice, Safety, and Unmet Needs for Long-Term and Preventive Outcomes. Allergy and Asthma Proceedings, in press.

SLIT & Local Reactions

We suggest AGAINST routine pre-medication (e.g., antihistamines) before each SLIT-tablet dose to reduce local reactions.

SoR: Strong

CoE: Moderate

DRAFT

We suggest AGAINST administering SLIT during oral mucosal ulceration or after dental extraction.

SoR: Conditional

CoE: Low

DRAFT

SLIT Safety — EoE & Asthma

Monitor SLIT patients for symptoms suggestive of eosinophilic esophagitis (EoE); withhold SLIT if EoE confirmed/suspected.

SoR: Strong

CoE: Low

DRAFT

We recommend AGAINST SLIT administration during an active asthma exacerbation.

SoR: Strong

CoE: Low

DRAFT

SCIT and SLIT & Cardiovascular Medications

Initiation or continuation of SCIT is an OPTION in patients on a beta-blocker, ACE-inhibitor, or ACE Receptor Blockers — after documented shared decision-making about potential risks.

SoR: Conditional

CoE: Low

DRAFT

Beta-blockers / ACE-inhibitors / ARBs may be used during SLIT after shared decision-making.

SoR: Conditional

CoE: Very Low

DRAFT

SCIT: Highly Sensitive Patients & Supervision

Exercise greater caution initiating SCIT in highly sensitive patients, those with comorbidities that may increase anaphylaxis severity, or those who may not tolerate/respond to epinephrine.

SoR: Conditional

CoE: Moderate

DRAFT

We recommend ALL SCIT doses be administered under direct medical supervision in an office/clinic setting.

SoR: Strong

CoE: Moderate

DRAFT

Improving AIT Adherence — Why It Matters and How

Why Adherence Matters

- **Only ~30% of patients complete the recommended 3-year AIT course globally**
- Incomplete courses are insufficient for long-term disease modification and sustained post-treatment benefit

Strategies to Improve Adherence (EAACI Guidelines, Roberts et al. 2018)

- **Patient reminders** to follow AIT schedule — Recommended (III, C):
 - Text messages
 - Social media reminders
 - Phone apps and digital tools
- **Follow-up visits every 3 months** recommended to improve adherence (II, B)
- **Convenient clinic hours** no appointment clinics for AIT
- For SLIT: simplify dispensing; **provide written instructions**
- Address patient concerns about **cost, time commitment, and side effects** at each visit

SA context: Patient education about the 3-5 year commitment and cost is essential — discontinuation wastes the investment and leaves the patient unsatisfactorily treated.



Prescribing and administering AIT in South Africa

AIT in South Africa— a different model than US



AIT in South Africa: A Different Model

The South African Model: European Approach, Not US Compounding

- In the United States, allergists compound patient-specific multi-allergen vials in the office.

SA follows the European model — pre-formulated manufacturer products

- Dosing is determined by the manufacturer's product insert, NOT by physician calculation

In SA: Allergens Currently Available via Immunospec / Immunotek

- SCIT most commonly prescribed: Grasses • HDM (Dp/Df) • Cat • Dog • Bee venom • Wasp venom
- SCIT Tree pollens (olive, cypress, oak, birch) • Weed pollens (plantain, ragweed) • Moulds (Alternaria, Aspergillus, Cladosporium) • Horse also available
- Evidence for SCIT with specific SA tree/weed species is limited.
- SLIT drops (Oraltek): Grasses • HDM • Cat • Dog • Tree pollens • Weeds • Moulds

Selecting Allergens for AIT in South Africa

Step 1: Identify Clinically Relevant Sensitisations

- Perform skin-prick testing (SPT) and/or specific-IgE to the allergen panel relevant to SA exposures
- Correlate positive tests with patient history

Step 2: Select Allergens — Follow European/EAACI Principles

- Treat the **SINGLE dominant allergen** first where possible (best evidence, EAACI • 2026 JTF PP)
- For polysensitised patients: select maximum **1–2 UNRELATED** allergens, given as separate injections 30–60 min apart
- Cross-reactive allergens (e.g., Northern grass; dust mite) can be treated as a SINGLE allergen group

SCIT Dosing in South Africa — Alxoid Protocol

Alxoid (SCIT) — Product Characteristics

- Manufacturer: **Immunotek SL (Spain)** • Distributed in SA by: **Immunospec (Pty) Ltd, Randburg**
- Formulation: Glutaraldehyde-POLYMERIZED allergen extract adsorbed to aluminium hydroxide gel
- **NOT an aqueous extract — cannot be mixed with other allergens in the clinic**
- Standard concentration: 30,000 UT/mL • Supplied as 3 mL vial (= 90,000 UT total)

Dosing Schedule — Follow the Manufacturer's Product Insert

- Updosing phase: weekly injections with increasing volume per the Immunotek protocol
- Maintenance dose: 0.5–1.0 mL (= 15,000–30,000 UT) per injection, at 4–8 week intervals
- Duration: minimum 3 years; extend to 5 years for patients with severe disease or high re-sensitisation risk

Ordering AIT in South Africa — Process & Costs

Sole Authorised SA Distributor: Immunospec (Pty) Ltd

- Products supplied: **Alxoid (SCIT inhalant)** • **Venox (SCIT venom)** • **Alutek (SCIT Alternaria/Horse)** • **Oraltek (SLIT drops)**
- Contact: +27 (11) 791-3232 • Johannesburg has the largest AIT patient volume in SA

Regulatory Pathway: Section 21 (Unregistered Medicines)

- No allergen immunotherapy product is currently SAHPRA-registered in South Africa
- **All AIT products must be obtained via Section 21 of the Medicines Act — requires per-patient SAHPRA approval**

Approximate Costs (2026, subject to change)

- Inhalant SCIT (Alxoid) and SLIT drops (Oraltek): ~**R800/month** at maintenance • Full 3–5 year course: ~**R29,000–48,000**
- Venom SCIT (Venox): initiation ~**R8,000** • Maintenance ~**R1,000/month**

Immunospec (Pty) Ltd; Immunotek.com/en/immunospec; Lancet SA Current Allergy & Clinical Immunology 2019; SAHPRA Section 21 pathway.

Barriers to AIT Use — Global & South Africa

Despite proven efficacy, AIT is used in **<10% of eligible patients worldwide** — a profound evidence-to-practice gap.

COST

SA: ~R800/mo for 3–5 yrs =
R29,000–48,000 total. Exchange-
rate dependent (all imported).

MEDICAL COVER

Most SA medical schemes **do NOT**
reimburse AIT. Patients pay out-of-
pocket.

ACCESS

Concentrated in **urban private**
practice (Joburg, Cape Town,
Pretoria). Public sector: virtually
none.

COMPLIANCE

Only ~30% of patients complete a
3-year course. Time commitment
and frequent visits reduce
adherence.

CLINICIAN TRAINING

Most AIT in SA delivered by
GPs, paediatricians and ENTs.
Number of allergists **declining**.
(For panel discussion)

REGULATORY

Section 21 unregistered
medicine pathway for all AIT
products in SA. **No SAHPRA-**
registered AIT product.

The gap is widening: allergy prevalence is rising (partly due to climate change) while access barriers are not decreasing.

SA faces all global barriers PLUS a public/private divide and full import-dependence.



Future Directions

Sections 6.1 & 6.2 of JTFPP practice parameter— new methods & the research agenda



Building the Evidence Base- emphasis on multi-allergen AIT

Record **OBJECTIVE outcome measures** (e.g., RCAT, TNSS, provocation tests) before and after starting AIT — especially for multi-allergen AIT — **to show real-world effectiveness.**

SoR: Conditional

CoE: Low

DRAFT

Specialty societies should invest in **real-world DATABASES/REGISTRIES** to strengthen the evidence for multi-allergen AIT safety and effectiveness.

SoR: Conditional

CoE: Low

DRAFT

Research Calls to Action

- Establish extract quality & standardization for all allergens — reproducible, standardized manufacturing.
- Help patients adhere to a 3-year course of AIT— strategies and real-world data
- Determine biomarkers & objective outcomes — to predict responders & determine required duration of treatment for maximum long-term efficacy
- Ensure safety optimization — best pre/post regimens, schedules; safest extracts.
- Provide climate-specific, personalized treatment — integrate micro-climate data.
- Continue research into innovative therapies— biologics alone or currently with AIT; novel routes, e.g., intralymphatic
- **Collect real-world objective efficacy data; Collaborative registries.**

2026 JTF AIT PP (draft), §Future 6.2, Research Call-to-Action statements.

Key Takeaways

- AIT is the only disease-modifying treatment for allergic respiratory disease
- Strongest, efficacy evidence for single-allergen Pollen-induced AR (SCIT) in adults and single allergen HDM/grass/ragweed/tree SLIT-tablets for adults and children.
- Multi-allergen SCIT — common in NA and SA — still lacks new high-certainty evidence; dose each component effectively (per single allergen efficacy data) and pursue registries.
- Most recommendations are conditional → shared decision-making is essential; recommendations are a starting point.
- Safety hinges on asthma control, correct dosing/verification, 30-min observation, and recognizing SLIT-specific signals (EoE).
- Climate change is lengthening and intensifying pollen seasons — rising demand meets real SA access, cost, and supply barriers.



Thank You • Questions

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