Best of allergology 2024

Module : ORL-Ophtalmologie

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DES Allergologie

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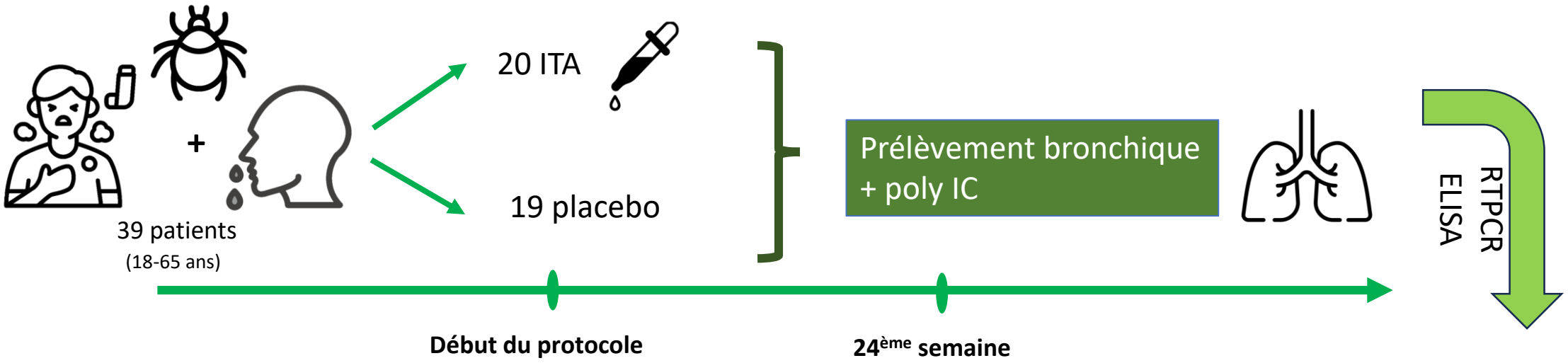
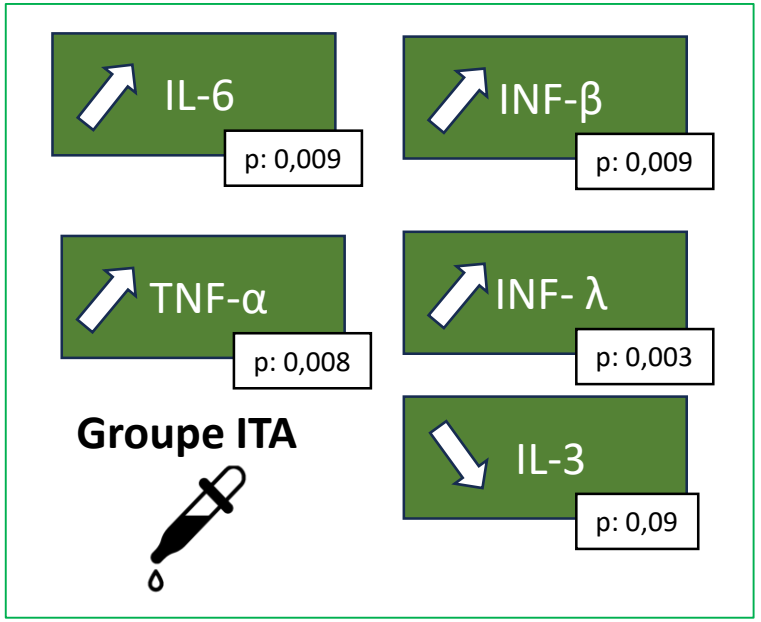
L'immunothérapie allergénique améliore l'immunité antivirale épithéliale des voies respiratoires chez les patients souffrant de rhinite et asthme allergique



L'ITA aux acariens améliore la résistance antivirale épithéliale bronchique aux infections virales.
Ces résultats peuvent expliquer potentiellement l'efficacité de l'ITA dans la réduction des exacerbations de l'asthme allergique.



ITA : Immunothérapie Allergénique aux Acariens
Poly IC : PolyCytidylique mimétique viral

C. Woehlk, Porsbjerg. Allergen Immunotherapy Enhances Airway Epithelial Antiviral Immunity in Patients with Allergic Asthma (VITAL Study): A Double-Blind Randomized Controlled Trial. Am J Respir Crit Care Med. May 2023 1;207(9):1161-1170.

Le dupilumab est plus efficace que l'omalizumab et mépolizumab dans l'asthme allergique et éosinophilique

IgE total 30-700 UI/mL

Eosinophiles
> 150 cellules/uL

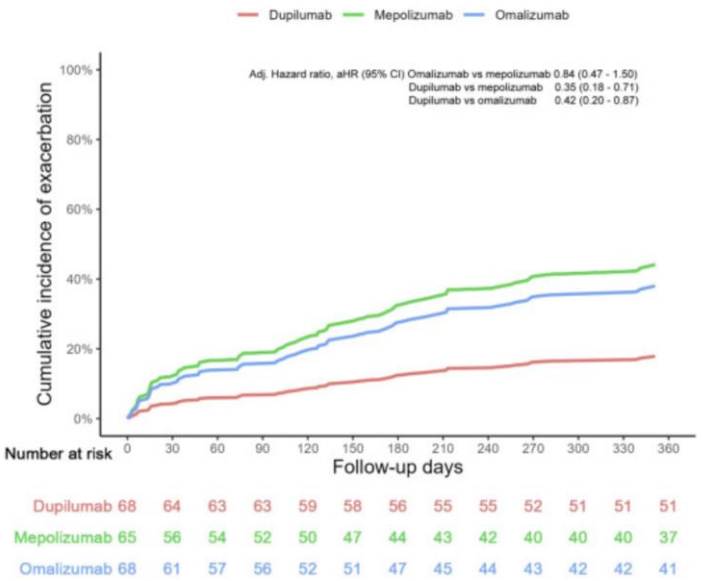
201 patients

68 DUPILUMAB
Anti IL-4, IL-13

65 MEPOLIZUMAB
Anti-IL-5

68 OMALIZUMAB
Anti-IgE

SUIVI 12 MOIS



Le dupilumab a été associé à une plus grande amélioration des exacerbations et de la valeur du VEMs que l'omalizumab et mépolizumab.

	MEPOLIZUMAB	OMALIZUMAB	DUPILUMAB
MEPOLIZUMAB	0	0.028	0,11
OMALIZUMAB		0	0,08
DUPILUMAB			0

Evolution du VEMs (en litre) entre l'inclusion et 1an

Akenroye, Jackson. Comparative effectiveness of omalizumab, mepolizumab, and dupilumab in asthma: A target trial emulation, JIACI. Mai 2023 151(5):1269-1276.

Le Tezepelumab augmente l'efficacité de l'immunothérapie allergénique dans la rhinite allergique

31 Tezepelumab (anti TSLP)

30 ITA

32 Tezepelumab + ITA

28 placebo

TOTAL : 121 patients

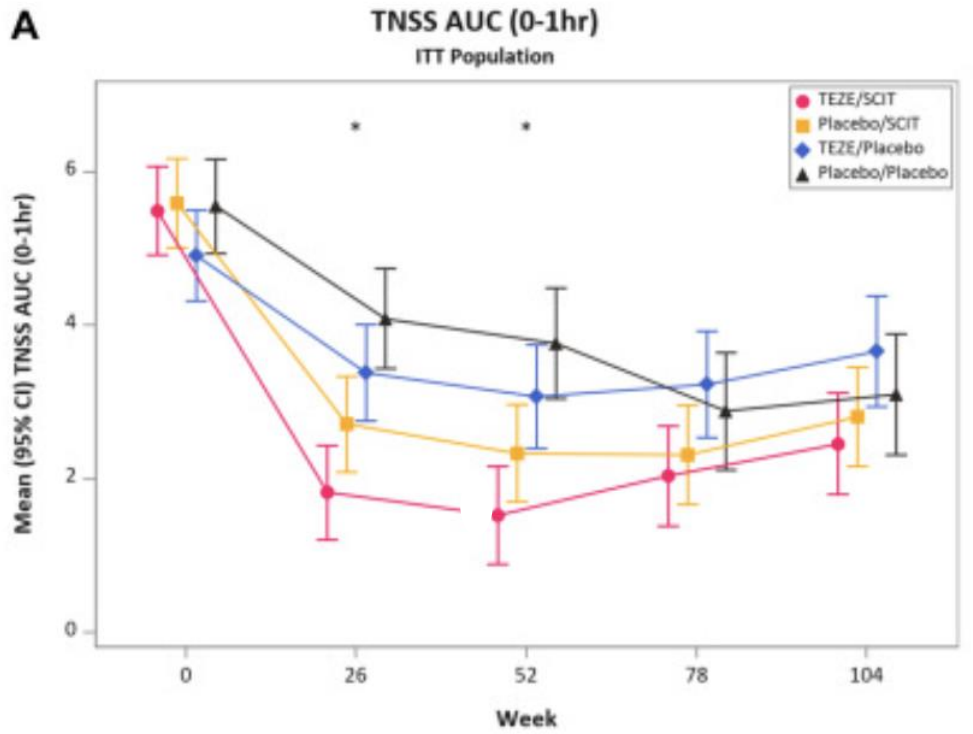
RANDOMISE EN DOUBLE AVEUGLE

PAN

TNSS + PN

> PLACEBO

> PLACEBO



TRAITEMENT PENDANT 52 SEMAINES

SUIVI 52 SEMAINES POST-TRAITEMENT

TSLP : Lymphopoïétine stromale thymique
PAN : Provocation allergenique nasale
TNSS : Total nasal symtom score
PN : Peak nasal
ITA : Immunothérapie allergénique aux chats

Le Tezepelumab augmente l'efficacité de l'ITA pendant et après le traitement.

Corren and Sanda. Effects of combination treatment with tezepelumab and allergen immunotherapy on nasal responses to allergen: A randomized controlled trial JIACI janvier 2023 ;151(1):192-201.

Le mépolizumab réduit l'incidence des interventions chirurgicales dans la rhinosinusite chronique avec polypose nasosinusienne

REFRACTAIRE
ELIGIBLE CHIRURGIE

SUIVI 12 MOIS

MEPOLIZUMAB

n =206

72%

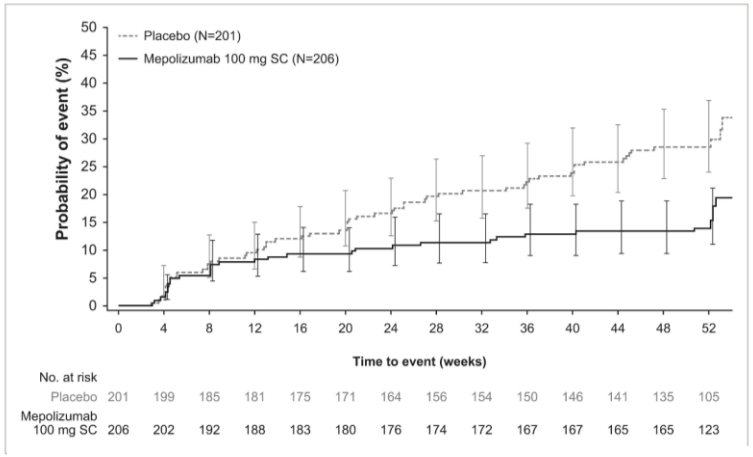
Pas de nécessité de chirurgie

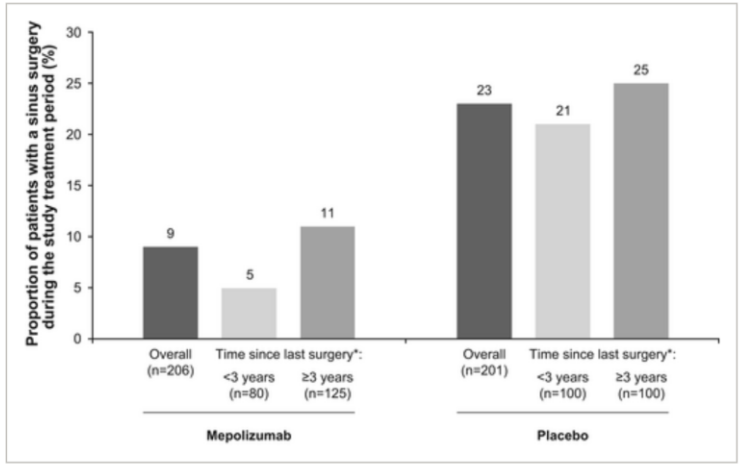
16%

Liste attente chirurgie

9%

Subi une Chirurgie





PLACEBO

n =201

51%

Pas de nécessité de chirurgie

30%

Liste attente chirurgie

23%

Subi une Chirurgie

Fokkens and Gane. Mepolizumab for chronic rhinosinusitis with nasal polyps (SYNAPSE): In-depth sinus surgery analysis. Allergy 2023 78(3):812-821

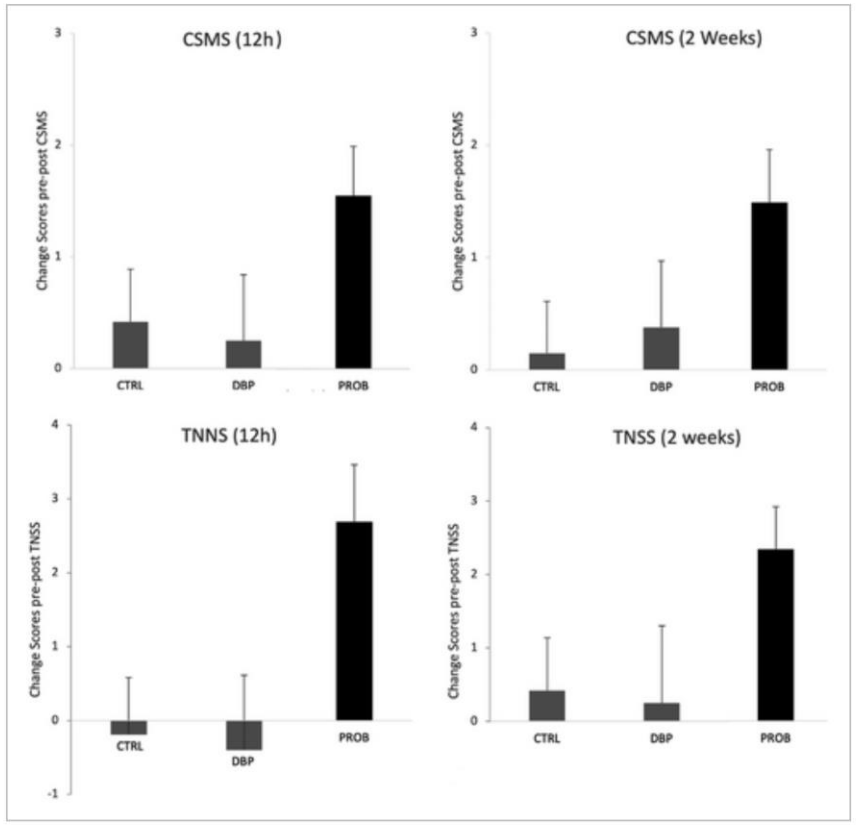
Probiotic treatment (*Enterococcus faecalis*) improves symptoms of seasonal allergic rhinitis: A randomized controlled trial

26 Treatment-as-usual **(CTRL)**

20 Double blind placebo **(DBP)**

21 Probiotic **(PROB)**

4 WEEK FOLLOW-UP



CSMS : Combined Symptoms and Medication Score
RLQI : Rhinitis Quality of Life Questionnaire
TNSS : Total Nasal Symptoms Score

This study report beneficial effects of E. faecalis in patients with seasonal allergic rhinitis.

Schaefer and Enck. Probiotic treatment (Enterococcus faecalis) improvessymptoms of seasonal allergic rhinitis: A randomizedcontrolled trialOctobre 2023 DOI: 10.1002/alr.23154; Rhynology 2023 , Volume 13, Issue 10

Nomenclature 2024 des maladies allergiques et des réactions d'hypersensibilité: EAACI.

du classique, du très bon, du surprenant!

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DOI: 10.1111/all.15889

EAACI POSITION PAPER

Allergy EAACI WILEY

Nomenclature of allergic diseases and hypersensitivity reactions: Adapted to modern needs: An EAACI position paper

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Abstract

The exponential growth of precision diagnostic tools, including omic technologies, molecular diagnostics, sophisticated genetic and epigenetic editing, imaging and nano-technologies and patient access to extensive health care, has resulted in vast amounts of unbiased data enabling in-depth disease characterization. New disease endotypes have been identified for various allergic diseases and triggered the gradual transition from a disease description focused on symptoms to identifying biomarkers and intricate pathogenetic and metabolic pathways. Consequently, the current disease taxonomy has to be revised for better categorization. This European Academy of Allergy and Clinical Immunology Position Paper responds to this challenge and provides a modern nomenclature for allergic diseases, which respects the earlier classifications back to the

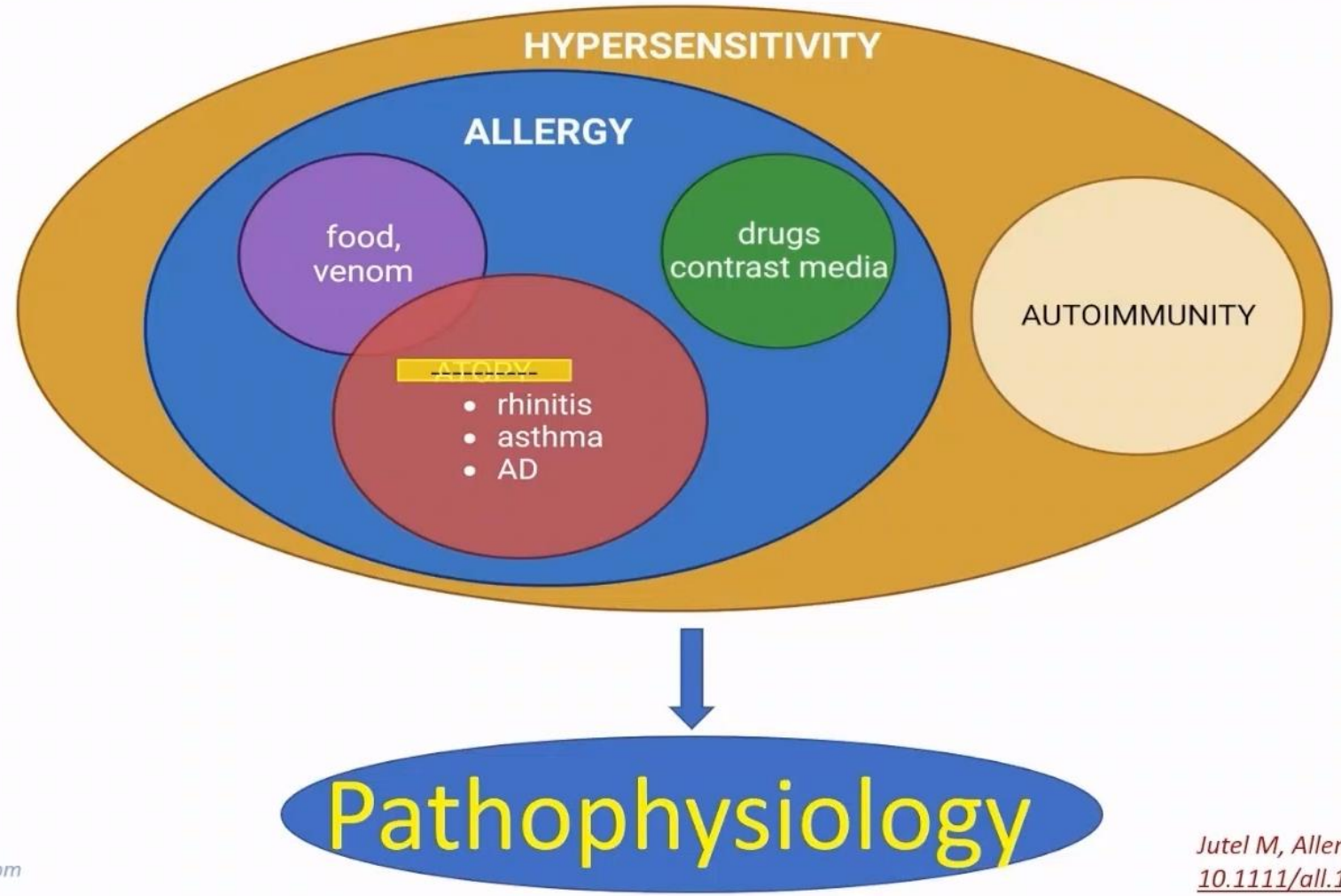
https://hub.eaaci.org/education_webinars/nomenclature-of-allergic-diseases-and-hypersensitivity-reactions-adapted-to-modern-needs-an-eaaci-position-paper/

Definitions/Terminology

- **Hypersensitivity:** refers to an undesirable, uncomfortable, or damaging response that arises from immune system overreaction or tissue dysfunction
- **Allergy:** is an abnormal or exaggerated reaction to exogenous stimuli which involves various types of hypersensitivity reactions engaging antibody, cell-mediated, tissue-driven, or metabolic mechanisms resulting in the development of respiratory, skin, eye, gastrointestinal, and other symptoms, including anaphylaxis
- **Anaphylaxis:** is a serious allergic reaction that is rapid in onset and might cause death
- **Atopy**: deeply enrooted, but limited use today, based mainly on the symptomatic definition of diseases and does not represent the current understanding of the pathophysiology

Jutel M et al. **Nomenclature of allergic diseases and hypersensitivity reactions: Adapted to modern needs: An EAACI position paper**. Allergy. 2023 Nov;78(11):2851-2874. doi: 10.1111/all.15889. Epub 2023 Oct 10.

Established landscape - clinical



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ACD, allergic contact dermatitis; AD,atopic dermatitis; ADCC, antibody-dependent cellular cytotoxicity; AERD, aspirin-exacerbated respiratory diseases; AGEP, acute generalized exanthematous pustulosis; AR, allergic rhinitis; ARC, allergic rhinoconjunctivitis; B, B lymphocytes; BAS, basophil; CRS, chronic rhinosinusitis; DRESS, severe drug reaction with eosinophilia and systemic symptoms; EoE, eosinophilic oesophagitis; EOS, eosinophil; FPIES, food protein-induced enterocolitis syndrome; IFN-γ, interferon-gamma; Ig (E, G, M), immunoglobulin (type E, G, M); IL, interleukin; ILC1/2/3, innate lymphoid cells type 1/2/3; MO, monocyte; MΦ, macrophage; NEU, neutrophils; NK, natural killer cell; NK-T, natural killer T cell; SJS, Stevens-Johnson syndrome; T1/T2/T3, type 1/2/3 immune response; Tc1/2/17, T cytotoxic lymphocyte type 1/2/17; TEN, toxic epidermal necrolysis; Th, T helper lymphocytes; TLSP, thymic stromal lymphopoietin; TNF-α, tumour necrosis factor-alpha.

Jutel M et al. **Nomenclature of allergic diseases and hypersensitivity reactions: Adapted to modern needs: An EAACI position paper**. Allergy. 2023 Nov;78(11):2851-2874. doi: 10.1111/all.15889. Epub 2023 Oct 10.

HYPERSENSITIVITY REACTIONS ▶ AUTOIMMUNITY

ALLERGY

INFLAMMATION / IMMUNE SYSTEM-DRIVEN

ANTIBODY-MEDIATED

Type I Immediate	Type II Cytotoxic	Type III Immune complexes
B cells: IgE Th2, ILC2 (IL-4, IL-5, IL-9, IL-13) Mast cells/BAS	B cells: IgM, IgG Phagocytes: NEU, MΦ C-dependent cytotoxicity, NK (ADCC)	B cells: IgM, IgG Immune complexes Complement, BAS, Mast cells, Platelets Phagocytes: NEU, MO, MΦ
AR/ARC, asthma, AD, acute urticaria/ angioedema, food allergy, venom allergy, drug allergy	Drug-induced cytopenia	Acute phase of hypersensitivity pneumonitis, drug-induced vasculitis, serum sickness/ Arthus reaction

CELL-MEDIATED

Type IVa T1	Type IVb T2	Type IVc T3
Th1, ILC1, Tc1, NK (IFN-γ, TNF-α, granzyme B, perforines) MΦ (granulomas)	Th2, ILC2, Tc2, NK-T (IL-4, IL-5, IL-9, IL-13, IL-31) EOS, B cells, Mast cells/BAS	Th17, ILC3, Tc17 (IL-17, IL-22, IL-23) NEU
ACD, acute phase of hypersensitivity pneumonitis, celiac disease, asthma, AR/ARC, CRS, AD, drug allergy (TEN, SJS, erythema multiforme)	Asthma, AR/CRS AD (T2 endotypes), EoE, food allergy, drug allergy (DRESS)	Neutrophilic asthma, AD, drug allergy (AGEP)

TISSUE-DRIVEN MECHANISMS

Type V Epithelial	Type VI Metabolic
Epithelial barrier defect, leaky junctions Resident cells changes (smooth muscle cells, mucous glands, neuroimmune interactions) Immune modulation (alarmins: TSLP, IL-25, IL-33) Epigenetic impact	Metabolic-induced immune dysregulation, short-chain fatty acids and other microbiome metabolites
Asthma, AR/ARC, CRS, AD, FPIES, EoE, celiac disease	Obesity & asthma, histamine-driven disorders

DIRECT RESPONSE TO CHEMICALS

Type VII
Direct cellular and inflammatory response to chemical substances
AERD, idiosyncratic reactions AR, ARC, asthma, AD, acute urticaria/angioedema and drug allergy