

Press Release (5th Global Allergy Forum: Allergy & Environment – Loss of Balance and Ways to restore it)

Davos, Switzerland, October 2025

Allergy and Environment

Allergic diseases have increased dramatically in industrialized countries in the recent years, affecting up to 40 percent of the population leading to decreased quality of life and causing a significant annual economic burden. Emerging evidence shows that our exposure to environmental triggers can play a key role, which causes an imbalance in our immune system. Therefore, it is important to better understand the relation between our environment and allergic diseases and to find ways how to prevent and restore the lost balance.

These questions were at the heart of the **5th Global Allergy Forum (GAF)**, held from October 16–18, 2025, at the Medicine Campus Davos. The forum was organized by the Scientific Committee led by Prof. Dr Claudia Traidl-Hoffmann and Prof. Dr Peter Schmid-Grendelmeier, on behalf of CK-CARE (Christine Kühne – Center for Allergy Research and Education). The aim of this three-day working meeting was to identify gaps in medical care and research related to allergic diseases such as atopic dermatitis, and to develop a joint statement as a foundation for future directions.

Claudio Rhyner, CEO of CK-CARE, stated: “This year’s meeting, titled ‘*Allergy and Environment – Loss of Balance and Ways to restore it*’, left a strong impression on me. International experts and young researchers discussed current topics and future actions in the field of allergy and environment. I was deeply impressed by the intensity of the debates, the active exchange of ideas, and the search for solutions. These findings will be summarized in the so-called ‘*Davos Declaration*’ and published soon.”

Prof. Dr. Claudia Traidl-Hoffmann from the University of Augsburg, spokesperson for CK-CARE, added: “Atopic dermatitis is like an open window into the world of allergies – it shows how closely environment and immune system are connected. Once we understand these connections, we will be able to restore the balance before allergies even develop.”

The GAF 2025 brought together over 70 internationally recognized experts in allergy and related fields. They discussed five main themes for potential solutions: (1) how to improve patients’ lives by environmental and nutritional approaches, (2) trained immunity for long-term remission of allergic diseases, (3) disrupted barrier(s) and ways to restore them, (4) psychoneuroimmunological aspects and the impact on patient burden and care, as well as (5) digitalization of medicine and artificial intelligence in allergies. The outcome of this meeting is the collection of key messages from the experts and young researchers.

A holistic perspective for the future of allergy medicine

How to improve patients’ lives by environmental and dietary approaches

Allergic diseases arise from the complex interplay between our environment, nutrition, and individual exposure profiles, especially during the first 1,000 days of life, a critical window for the establishment of immune tolerance. Understanding the allergy epidemic requires linking

pollution (indoor and outdoor), diet, and early-life nutrition to immune imbalance. Pharmacosexposomics – a term introduced at GAF 2025 – should be recognized as a key approach to uncover how environmental factors shape therapy responses and allergic inflammation. By combining a healthy environment, tailored nutrition, and exposome-informed pharmacology, we can create a transformative path toward effective allergy prevention and individualized allergy care.

New research links environment to allergies through ‘Trained Innate Immunity’

Researchers have discovered that an ancient process called trained immunity, the innate immune system’s ability to ‘remember’ past exposures, may influence the development of allergic diseases like eczema, food allergies, asthma, and hay fever.

Exposure to food, pollution, infections, and climate change starting in early life could shape this immune training, affecting how allergies begin and progress.

This insight opens new possibilities for preventing and managing allergies by understanding how our environment programs the immune system.

Disrupted barrier(s): clinical effects and possible ways to restore them

Barriers include the skin and the lining of the nose, lungs and gut. Keeping the barriers healthy, combined with a balanced microbiome (the helpful bacteria that live on and in us), could open up new approaches to prevent and treat allergic diseases. The strength and function of these barriers strongly depend on the balance between protective and harmful influences from our environment, such as pollution, allergens, diet, infections, and lifestyle. More research is needed to better understand how these barriers work as interfaces, how they interact with their microbiomes, how environment affects them, which molecules can help to maintain them, and how to best measure and monitor their health. Future allergy prevention and treatment should focus on protecting and strengthening the barriers, supporting a healthy microbiome, reducing harmful exposures, and promoting beneficial factors, especially early in life when body and immune system are still developing.

Psychoneuroimmunological aspects and the impact on patient burden and care

Atopic diseases are characterized by important bidirectional interactions of peripheral organ inflammation (skin, airways, gut) and central/peripheral nervous system processes (itch/sleep/emotions) which lead to patients and family burden called cumulative life course impairment.

In the future hypothesis-driven, neuroimmunological research (with topics chosen with patient input) needs to holistically address pathophysiology plus psychosocial phenomena through novel therapeutics (drugs, nutrition, psychological interventions and combination of them) and embrace new biomarkers/brain imaging/digital tools (wearables/AI). Early (preventative) interventions will be as important as intervening in establishing allergic diseases, in part to prevent systemic inflammation and psychological/CNS scars. Multimodal education of patients and HCPs bears immediate potential for improving patients’/families’ understanding of our better understanding of the peripheral organ-CNS/mind axis, leading to enhanced patient-centered care and novel prevention/treatment approaches (incorporating EDI). Future research should ideally be multidisciplinary and multisystemic, rather than focused on one organ system.

Digitalization of medicine and artificial intelligence in allergies

Artificial intelligence (AI) is revolutionizing allergy research and care by integrating big data, digital diagnostics, and continuous patient monitoring into a unified ecosystem. By connecting mobile sensors, electronic health records, and interoperable registries, transparent and explainable AI enables personalized, predictive, and preventive allergy management. This digital transformation empowers clinicians to make faster, data-informed decisions and deliver precision medicine to patients with atopic diseases.



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