

Publication**AllergoOncology: microbiota in allergy and cancer - a European Academy for Allergy and Clinical Immunology position paper****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4507176**Author(s)** Untersmayr, Eva; Bax, Heather J.; Bergmann, Christoph; Bianchini, Rodolfo; Cozen, Wendy; Gould, Hannah J.; Hartmann, Karin; Josephs, Debra H.; Levi-Schaffer, Francesca; Penichet, Manuel L.; O'Mahony, Liam; Poli, Aurelie; Redegeld, Frank A.; Roth-Walter, Franziska; Turner, Michelle C.; Vangelista, Luca; Karagiannis, Sophia N.; Jensen-Jarolim, Erika**Author(s) at UniBasel** [Hartmann, Karin](#) ;**Year** 2019**Title** AllergoOncology: microbiota in allergy and cancer - a European Academy for Allergy and Clinical Immunology position paper**Journal** Allergy**Volume** 74**Number** 6**Pages / Article-Number** 1037-1051**Mesh terms** Animals; Asthma, microbiology; Bacteria, metabolism; Child; Child, Preschool; Diet; Epithelium, microbiology; Female; Gastrointestinal Microbiome, immunology; Host Microbial Interactions, immunology; Humans; Hygiene Hypothesis; Immunity, Cellular; Infant; Male; Micronutrients; Mucous Membrane, microbiology; Neoplasms, microbiology; Phylogeny

The microbiota can play important roles in the development of human immunity and the establishment of immune homeostasis. Lifestyle factors including diet, hygiene, and exposure to viruses or bacteria, and medical interventions with antibiotics or anti-ulcer medications, regulate phylogenetic variability and the quality of cross talk between innate and adaptive immune cells via mucosal and skin epithelia. More recently, microbiota and their composition have been linked to protective effects for health. Imbalance, however, has been linked to immune-related diseases such as allergy and cancer, characterized by impaired, or exaggerated immune tolerance, respectively. In this AllergoOncology position paper, we focus on the increasing evidence defining the microbiota composition as a key determinant of immunity and immune tolerance, linked to the risk for the development of allergic and malignant diseases. We discuss novel insights into the role of microbiota in disease and patient responses to treatments in cancer and in allergy. These may highlight opportunities to improve patient outcomes with medical interventions supported through a restored microbiome.

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