



ID der Kurzfassung : 382

Early-Life Environmental Exposures, Microbiome, and Immune Development: A One Health Perspective on Viral Infections in Children (EMVIC)

Inhalt

The EMVIC network project investigates how early environmental exposures from pregnancy onwards –including chemical exposures, psychosocial stressors and lifestyle factors –shape immune development, virus-related immune and vaccine responses, the microbiome, and long-term health in children and adolescents. EMVIC builds on a well-characterised birth cohort with longitudinal data and biosamples from pregnancy to adolescence. Existing information on environmental exposures, immunological parameters, health outcomes, vaccination status and infections is complemented by new analyses of viral infections, immune responses, microbiome structure and function, and vaccine effectiveness. This enables an integrated assessment of complex exposure patterns and their relevance for immune resilience and viral disease risk across the life course. Four interlinked sub-projects address environmentally associated effects on acute (measles, SARS-CoV-2) and persistent viral infections (Epstein-Barr virus), cellular immune mechanisms, microbiome-mediated immune modulation and vaccine responses. Harmonised data management and interdisciplinary analyses will strengthen the One Health Platform's methodological and infrastructural foundations. EMVIC thus provides a basis for disease prevention, vaccination strategies, and the identification of health-relevant environmental pollutants, thereby supporting evidence-based decision-making in the field of public health.

Keywords

immune response, vaccines, environmental exposure, microbiome

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Professional Status of the Speaker

Senior Scientist

Junior Scientist Status

No, I am not a Junior Scientist.

Autoren: Dr. KLETT-TAMMEN, Carolina (Department of Epidemiology, Helmholtz Centre for Infection Research GmbH (HZI), Braunschweig); Dr. MELHORN, Vanessa (Department of Epidemiology, Helmholtz Centre for Infection Research GmbH (HZI), Braunschweig); Dr. VITAL, Marius (Institute for Medical Microbiology and Hospital Epidemiology, Hannover Medical School, Hannover); Dr. PIETSCH, Corinna (Institute of Medical Microbiology and Virology, Medical Faculty, Leipzig University, Leipzig); HERBERTH, Gunda (Helmholtz Centre for Environmental Research - UFZ, Leipzig)

Vortragende(r): HERBERTH, Gunda (Helmholtz Centre for Environmental Research - UFZ, Leipzig)

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