

Joachim Heinrich

General information

Name: Joachim Heinrich
Title: Prof. Dr.

Born: 12.03.1952 in Germany
Children: 2 (41 and 39 years), married

Current employment status: Unit head of "Global Environmental Health"
Institute Address: Ludwig-Maximilians-University
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Social and Environmental Medicine
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Academic education

1982-1986 Postgraduate Training in Biomathematics and Statistics in Medicine, Berlin, Germany
1970 - 1974 Study of Mathematics, Friedrich-Schiller University of Jena, Germany

Scientific degrees and employments

2018 Honorary professorial Fellow (Level E) at Melbourne School of Population and Global Health, The Melbourne University, Australia
2015 Unit head of "Population Studies" at Ludwig-Maximilians-University
2011 - 2015 Director of Institute of Epidemiology I, Helmholtz Zentrum München, Neuherberg/Munich
1992 - 2011 Unit leader of "Environmental Epidemiology", Helmholtz Zentrum München, Institute of Epidemiology, Neuherberg/Munich
1990 - 1992 Senior scientist, University of Wuppertal
1983 - 1989 Group leader, Department of Preventive Cardiology, Medical School Erfurt
1982 PhD in Epidemiology, Medical School Erfurt
Thesis: Methododology for assessment of psychosocial risk factors for myocardial infarctions using longitudinal data of a population-based cohort of males from Erfurt South.
1974 - 1983 Scientist, Medical School Erfurt

Research area

- Long-term and short-term effects of ambient air pollution and exposure to greenspace on a broad spectrum of health parameters with a focus on respiratory health
- Measurement and monitoring of ambient air pollution and assessment of exposure to ambient air pollution
- Determinants of asthma and allergies (including indoor biocontaminants, dietary factors, life-style related factors)
- Methodology of exposure assessment and biomonitoring
- Longitudinal data analysis
- Birth cohort study methodology

Teaching

- Lecturer in Environmental Epidemiology at Ludwig-Maximilians-University, and Epidemiology at Technical University München and University of Mainz and Vienna and further international Universities

- Supervisor of doctoral students

Grants

- 1994 -** PI and Co-PI of 13 EU funded Projects on determinants of asthma and allergies
- 2019** (ECRHS, PEACE, ULTRA II, TRAPCA, AIR ALLERG, PINCHE, PATY, EARNEST, INTARESE, ESCAPE, HITEA, MeDALL, ALEC)
- 2000 - 2016** PI of 10 projects on epidemiology of chronic diseases and in particular on respiratory health funded by German Research Foundation (DFG)
- 1997 - 2016** PI of the Munich Birth cohort studies LISA and GINI, funded by the BMBF
- 1997 - 2009** Co-PI of three projects on air pollution effects (Bitterfeld-Study, UBA-funded diesel exhaust project, Women cohort in North-Rhine Westphalia) funded by Federal and State German Ministries

Miscellaneous

- Member of several Review Panels for German Ministries such as the BMBF, the German Research Foundation, the EU, the Wellcome Trust, several national research funding institutions from UK, The Netherlands, The Czech Republic, Norway, China, Australia, WHO and other funding agencies
- Associate editor and member of editorial boards of several scientific journals
- Reviewer for numerous scientific journals such as New England Journal of Medicine, The Lancet, Environmental Health Perspectives, European Respiratory Journal, JACI, Allergy, etc
- Member of steering committee of several national and international scientific research projects and consortia

Scientific Collaborations

Long-lasting collaborations with University of British Columbia, Vancouver (M. Brauer), US EPA, Chapel Hill (L. NEAS), ISGlobal (CREAL), Barcelona (JM Anto, J. Sunyer, M. Kogevinas), Imperial College London (P. Burney, D. Jarvis), Karolinska Institutet, Stockholm (G. Pershagen, M. Wickman), University of Utrecht (B. Brunekreef, G. Hoek), University of Melbourne (S. Dharmage), Monash University (M. Abramson) and several further European and German research institutions,

Publications

Total number of publications: more than 1000 papers in peer reviewed journals,; h-index: 104

International ranking of worldwide leading researchers on asthma on rank 16; top 10 ranking in air pollution epidemiology authors (Zell et al J Occup Med Toxicol. 2010; 5: 5.) and rank 1 as most cited author for lung research in German speaking countries (Laborjournal 10/2016)

Most influential publications based on own evaluation

Ambient environmental exposure and health

Two of few papers, which showed that improved air quality is related to temporal positive changes of respiratory health

(Heinrich J, B Hoelscher, HE Wichmann. Decline of Ambient Air Pollution and Respiratory Symptoms in Children. *Am J Respir Crit Care Med* (2000) 161:1930-1936; # Citations 91
Heinrich J, Hoelscher B, Frye C, Meyer I, Pitz M, Cyrus J, Wjst M, Neas L, Wichmann HE. Improved air quality in reunified Germany and decreases in respiratory symptoms. *Epidemiology* 2002; 13(4):394-401. # citations 69

The first study, which showed effects of exposure to ultrafine particles on respiratory symptoms.

(Peters, A., Wichmann, H.E., Tuch, T., Heinrich, J., Heyder, J.: Respiratory effects are associated with the number of ultrafine particles. *Am. J. Respir. Crit. Care Med.* 155, 1376-1383 (1997)) # citations 797

Indoor factors and health

A comprehensive review on main indoor factors and onset of asthma in children.

Heinrich J. Influence of indoor factors in dwellings on the development of childhood asthma. *Int J Hyg Environ Health.* 2011 Jan;214(1):1-25 # citations 94

One of the two first papers, which showed potential protective effects for allergies of high exposure to endotoxin (Gehring U, Bischof W, Fahlbusch B, Wichmann HE, Heinrich J. House Dust Endotoxin and Allergic Sensitization in Children. *Am J Respir Crit Care Med* 2002; 166: 939-944.) # citations 162

Determinants of allergies

The first study, which showed that early attendance of a day care (as proxy of exposure to infectious agents) is related to lower risk of allergies later in life. This study was replicated by many other studies and is one, which supported to concept of hygiene hypothesis.

Krämer U, Heinrich J, Wjst M, Wichmann HE. Age of entry to day nursery and allergy in later childhood. *Lancet.* 1999 Feb 6;353(9151):450-4, # citations 267

Timing of introduction of solids is now a topic of hot debate. We published several papers on that topic more than 10 years ago.

Zutavern, A., Brockow, I., Heinrich, J.: Timing of Solid Food Introduction in Relation to Atopic Dermatitis and Atopic Sensitisation: Results From a Prospective Birth Cohort Study. *Pediatrics* 117(2), 401-411 (2006), # citations 149

Genetics

The first study, which showed that fatty acid composition in blood is under control of FADS gene cluster. (Schaeffer I, Gohlke H, Müller M, Heid IM, Palmer LJ, Kompauer I, Demmelmair H, Illig T, Koletzko B, Heinrich J. Common genetic variants of FADS1 FADS2 gene cluster and their reconstructed haplotypes are associated with the fatty acid composition in phospholipids. *Human Molecular Genetics* 2006; 15/11:1745-1756.), # citations 277, This study stimulated a lot of other studies and was frequently replicated by candidate gene approaches and genome wide scans.

The most comprehensive multicenter study identified several novel candidate genes for atopic eczema (Paternoster L, Standl M, ..., Heinrich J*, Evans DM*, Weidinger S*. Meta-analysis of genome-wide association studies identifies three new risk loci for atopic dermatitis. *Nat Genet.* 2011 Dec 25;44(2):187-92;* shared last authorship), # citations 122

Gene – Environment interaction

While this concept is well established now, we published one of the first studies, which showed that exposure to endotoxin on asthma symptoms is related to TLR gene variants (Werner M, Topp R, Wimmer K, Richter K, Bischof W, Wjst M, Heinrich J. TLR4 gene variants modify endotoxin effects on asthma. *J Allergy Clin Immunol* 2003; 112(2):323-330.).
citations 107