

# Cancer Epidemiology - Cases, Causes, Challenges

## Abstract

Cancer is a major cause of death and disease burden worldwide. Cancer deaths are expected to further increase over the next decades if prevention and therapy fail to change current trends. Epidemiology aims to establish cancer causes through observational population studies. Functioning registration of cancer cases is a decisive tool for cancer epidemiology, and cancer registries continue to be established in Germany and other European countries.

In the past, one of the major successes of cancer epidemiology was the identification of tobacco as a cause of lung and many other cancers. More recently, certain infections have been shown to lead to cancer, opening exciting options for cancer prevention through immunization. Diet and environmental causes also continue to be at the core of current cancer research, and large multicenter investigations such as the EPIC study enhance our knowledge of the association between nutrition and cancer. Radiation is an example of environmental cancer causes. Recent studies on occupational radiation and on radon provide better insight into health effects of low-dose radiation.

Increasingly, genetically susceptible subgroups are being identified by modern methods of molecular epidemiology, and some challenges of these approaches will be discussed. In terms of public health, screening for early cancer is an important aim. Cancer epidemiology contributes to the evaluation of screening programmes. The investigation of screening for neuroblastoma, a brain tumour of young children, conducted in Germany demonstrated the lack of benefit obtained through the specific programme and can serve as an example for this specific application of epidemiologic methods.



## Curriculum Vitae

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### Education:

1990 Doctoral degree (Dr.med.), RWTH Aachen (Thesis Analysing a stressful situation: psychological consequences of a nuclear catastrophe)  
1996 MSc Community Health and Health Management (CHHM), Heidelberg University Hospital, Germany (Thesis: Provision of Care for Patients with Sexually Transmitted Diseases in Pokhara, Nepal)  
2003 Habilitation (PhD) in Public Health, Focus Epidemiology, School of Public Health, University of Bielefeld, Germany

### Professional appointments:

1996–1999 Scientist, Dep. of Epidemiology, German Cancer Research Center (DKFZ), Heidelberg, Germany  
4/1999 - 5/2005 Scientist (equiv. to Assist. Professor), Dep. of Epidemiology and Medical Statistics (now: & International Health) School of Public Health, University of Bielefeld, Germany; deputy Head of department  
10/2003-10/2004 Acting Professor of epidemiology and Head of department  
since 6/2005 Scientist, World Health Organization, Radiation and Environmental Health unit, Geneva

### Activities in Professional societies etc.:

since 1999 Member, AG occupational epidemiology, German Society for Epidemiology DGEpi  
since 2000 Speaker, AG Cancer epidemiology, German Society for Epidemiology DGEpi  
since 2000 Organisation of several workshops on cohort studies in Germany in the framework of the DGEpi