SPM Institute of Social and Preventive Medicine
BIHAM Berner Institut für Hausarztmedizin
CTU Clinical Trials Unit

UNIVERSITÄT BERN

The Bern Lectures in Health Science

**Rudi Westendorp** is professor of Medicine at Old age at the Faculty of Health and Medical Sciences at Copenhagen University, Denmark (2015) where he performs state-of-the-art and inter-disciplinary research within the Department of Public health and the Center for Healthy Aging. Understanding the regulation of human life history is a necessary step towards 'personalized aging' allowing people to live a healthier life for longer. In order to achieve this aim, he makes use of 'big data' and 'computational power' within Statistics Denmark for observational studies and exploit the vibrant environment in the Mærsk Tower when performing experimental studies. He is continuously in dialogue with Danish citizens as the acquisition, handling and interpretation of personal data necessitates transparency and trust. Trained as a consultant in internal medicine and epidemiology, he was full professor at the Leiden University Medical Center, and chair of the department of old age medicine (2000-2014) and founding director of the Leyden Academy on Vitality and Ageing (2007-2014) that conducts research, provides education and pursues societal innovations to improve quality of life of older people.

## « Harnessing the Power of Big Data to address the Societal Challenge of Aging »

The continuous increase in life-expectancy and lengthening of disease trajectories cause profound upheaval at an individual and a societal level. Above age 65, the great majority of people suffer multiple morbidities and polypharmacy is the rule. Age is the most important single risk factor of manifold diseases such as diabetes, cancer and dementia, but it is too often ignored as the underlying causal mechanism and largely understudied. Within the project Data for good science we make an investment in interdisciplinary research combining the strengths of the Danish data repositories, the access to the manifold biological samples in the hospital archives, and innovative computational analysis. First, we will analyze the life-histories of people with fast and slow aging trajectories in the general population to identify the contributing life events, rather than just being able to predict outcomes. Second, we will detect the pathological, morphological and molecular biomarkers of aging in samples of human tissue which provides unprecedented opportunities for (nested) case control studies for causal inference. Third, through matching approaches of statistical- and actual sampling, as well as through experimental perturbation of biological systems, we will decipher the molecular mechanisms in aging cells.

**Join the seminar on Monday, 3 February 2020 at 3:00 pm in room 220!**