Despite years of research and the considerable progress that has been achieved by identifying a number of genes and genetic risk factors for Parkinson’s disease (PD), the cause for vast majority of cases is still unknown. It is suspected that a multitude of interacting genetic and environmental risk factors, rather than single genetic mutations or single toxins, are responsible for the disease in most instances.

The project “COmprehensive Unbiased Risk factor Assessment for Genetics and Environment in Parkinson’s Disease (Courage-PD)” takes an integrated approach to unravel these underlying factors. The genetic make-up of large, well-characterized patient cohorts from different ethnic populations will be deciphered. At the same time, environmental exposures will be documented, and interactions between both classes of risk factors will be elucidated using novel statistical methods.

Finally, the relevance and validity of the findings will be tested in innovative cellular models, including neuronal cells, which will be generated from patient-derived induced pluripotent stem cells. We expect that this combination of state-of-the-art genetic technologies with a detailed ascertainment of environmental modifiers will provide important clues to decipher the complexity of neurodegeneration in Parkinson’s Disease.

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Coordinator: Thomas Gasser
T: +49 7071-29-86529
E: Thomas.gasser@uni-tuebingen.de

Project Partners:

- **Thomas Gasser & Rejko Krüger** University of Tuebingen, Germany
- **Alexis Elbaz** INSERM, France
- **Stefano Goldwurm** Istituti Clinici di Perfezionamento, Italy
- **Mathias Toft** Oslo University Hospital, Norway
- **Nicholas Wood** University College London, United Kingdom
- **Avi Or-Utregreger** Tel Aviv Sourasky Medical Center, Israel
- **Joaquim Ferreira** Instituto de Medicina Molecular, Portugal
- **Eduardo Tolosa** Universitat de Barcelona, Spain
- **Rudi Balling** University of Luxembourg, Luxembourg
- **Peter Heutink** VU University Medical Centre, Amsterdam, The Netherlands

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