Personalised Prevention: a systematic overview of lifestyle and dna risk factors

PROMOTOR
Maurice Zeegers

ABOUT THE SUPERVISORS
Professor Maurice Zeegers has broad experience in big data, precision medicine, complex genetics, epidemiology, systematic reviewing and health promotion. He is head of the department of Complex Genetics and head of Maastricht University's Care and Public Health Research Institute, CAPHRI.

ABOUT THE RESEARCH GROUP
The studentship will be embedded within the department of Complex Genetics. It is a small research group that aims to create knowledge to help people live a longer, healthier and happier life. Much of their research is based on disentangling the genetic and environmental risk factors of chronic complex diseases. Their research results are being used for the prevention of chronic disease, to improve patient care, to inform legal court decisions, on the market place and to improve the scientific process itself. Their core expertise is in the field of epidemiology but it is continuous reaching outward into adjacent disciplines such as analytics, genomics and forensic medicine to lead new innovations and leave a legacy in public health. (http://www.ccge.nl)

WORK FIELD OF THE PROPOSED PROJECT
Genetic Epidemiology.

ESTIMATED DURATION
4 year fulltime or 3 year part-time.

SCIENTIFIC BACKGROUND
Genetics, lifestyle, and environment are key contributors of many human diseases. Thus, personalized health consulting is particularly effective when all mentioned factors are examined in a comprehensive method. With that articulated, Health Potential (HP), a Maastricht University spin-off, has been established to provide such unique service. The Department of Complex Genetics at Maastricht University is continuously summarizing all scientific studies on the relation between DNA markers, lifestyle risk factors, and the most common chronic diseases. This knowledge has led to a massive data-driven algorithm that

can predict disease risks of individuals. A more personalized, evidence-based, up-to-date and complete disease risk profile has not been available until now, which has created a new market opportunity. The PhD candidate will become involved in these activities and service to translate scientific knowledge to the community.

MAIN RESEARCH QUESTION, SUBQUESTIONS AND AIM(S)

The PhD candidate will be supervised to perform meta-research on the relationship between:
- Life style risk factors for common chronic disease
- DNA risk factors for common chronic disease
- DNA risk factors for athletic performance

RESEARCH DESIGN AND METHODS

Conduct systematic reviews, meta-analyses, or meta-meta-analyses on studies about the association between DNA markers and environmental exposure for chronic disease and keep this up-to-date to be used by Health Potential BV.

RESEARCH ACTIVITIES

In addition, the PhD candidate will have the opportunity develop a research line in systematic review methodology, precision medicine and/or personalised prevention.

EXPECTED RESULTS

PhD Degree in Epidemiology.

COMPETENCES THE APPLICANT NEEDS TO HAVE OR ACQUIRE FOR THE PROJECT

Msc in Genetic Epidemiology and fluency in English.