

Modifiable dementia risk factors in experimental and observational studies

Research project – Lion Soons

Background: Dementia is a major health problem in the ageing worldwide population. The prevalence of dementia is increasing, with the number of people living with dementia projected to reach more than 100 million by 2050 (Prince et al., 2015). The rising prevalence of dementia, combined with the burden imposed on people suffering from it, as well as their families and society, has made the prevention of dementia a public health priority. Several prospective cohort studies have provided evidence of several modifiable risk and protective factors contributing to dementia risk, and the number of randomized controlled trials investigating the effect of targeting these risk factors is increasing (Livingston et al., 2020).

Objective: the aim of this project is to build further on previous findings into modifiable risk and protective factors for dementia. By means of different studies using diverse methods, we aim to (1) examine the association between hearing impairment and cognitive decline, and investigate whether this possible association is explained by social engagement; (2) examine whether a change in LIBRA score is correlated with a change in cognition over time, and (3) investigate effects of targeting modifiable risk factors (in a multidomain lifestyle intervention) in older adults at risk of cognitive decline.

Methods: Data from the ongoing Maastricht Ageing Study (MAAS) will be used to examine the associations between social activities, hearing impairment and cognitive decline. Furthermore, to investigate whether a change in LIBRA is associated with a change in cognition over time, an ongoing longitudinal database will be used (e.g., MAAS or ELSA). Lastly, investigating effects of targeting modifiable risk factors in older adults at risk of cognitive decline will be examined using data of the FINGER-NL study, a 2-year multicenter, randomized, controlled trial comparing a high-intensity (personalized multi-domain) lifestyle intervention with a low-intensity intervention (access to online general lifestyle-related health information) (1:1 ratio) in 1206 adults at risk of cognitive decline, which started in January 2022.

References

- Livingston, G., Huntley, J., Sommerlad, A., Ames, D., Ballard, C., Banerjee, S., ... & Mukadam, N. (2020). Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. *The Lancet*, 396(10248), 413-446.
- Prince, M. J., Wimo, A., Guerchet, M. M., Ali, G. C., Wu, Y. T., & Prina, M. (2015). World Alzheimer Report 2015-The Global Impact of Dementia: An analysis of prevalence, incidence, cost and trends.