Oxidative stress in chronic diseases: causal inference from observational studies

Luo, J.

List of publications

Published articles included in this thesis

1. **Luo J**, le Cessie S, Blauw GJ, et al. Systemic inflammatory markers in relation to cognitive function and measures of brain atrophy: A Mendelian Randomization study. Geroscience. 2022. Epub ahead of print.
2. **Luo J**, Hashimoto Y, Martens LG et al. Associations of metabolomic profiles with circulating vitamin E and urinary vitamin E metabolites in middle-aged individuals. Nutrition 2022; 93:111440.
3. **Luo J**, Xu Z, Noordam R, van Heemst D, Li-Gao R. Depression and inflammatory bowel disease: A bidirectional two-sample Mendelian randomization study. J Crohns Colitis. 2022. 16(4): p. 633-642.
4. **Luo J**, le Cessie S, van Heemst D, Noordam R. Diet-derived circulating antioxidants and risk of coronary heart disease: A Mendelian randomization study. J Am Coll Cardiol. 2021; 77:45-54.
5. **Luo J**, Meulmeester FL, Martens LG, et al. Urinary oxidized, but not enzymatic vitamin E metabolites are inversely associated with measures of glucose homeostasis in middle-aged healthy individuals. Clin Nutr. 2021; 40:4192-4200.
6. **Luo J**, Mills K, le Cessie S, Noordam R, van Heemst D. Ageing, age-related diseases and oxidative stress: What to do next? Ageing Res Rev. 2020; 57:100982.

Other publications

7. Martens LG, **Luo J*,** Willems van Dijk K, Jukema JW, Noordam R, van Heemst D. Diet-derived antioxidants do not decrease risk of ischemic stroke: A Mendelian randomization study in 1 million people. J Am Heart Assoc. 2021;10: e022567. (*co-first author)
8. Wang W, **Luo J**, Willems van Dijk K, et al. Assessment of the bi-directional relationship between blood mitochondrial DNA copy number and type 2 diabetes mellitus: a multivariable-adjusted Mendelian Randomization study. Diabetologia. 2022.
9. Martens LG, **Luo J**, Willems van Dijk K, et al. The association between lymphocyte mitochondrial DNA abundance and Stroke: a combination of multivariable-adjusted survival and mendelian randomization analyses. Atherosclerosis. 2022.
10. Meulmeester FL, **Luo J**, Martens LG, et al. Association of measures of body fat with serum alpha-tocopherol and its metabolites in middle-aged individuals. Nutr Metab Cardiovasc Dis. 2021;31:2407-2415.
11. Martens LG, **Luo J**, Meulmeester FL, et al. Associations between Lifestyle Factors and Vitamin E Metabolites in the General Population. Antioxidants. 2020 Dec 15;9(12):1280.
12. Faquih T, van Smeden M, **Luo J** et al. A Workflow for missing values imputation of untargeted metabolomics data. Metabolites 2020;10 (12).

Other manuscripts

13. **Luo J**, Noordam R, Jukema JW, et al. Low mitochondrial DNA abundance drives atherosclerotic cardiovascular disease: cohort and genetic studies. In revision. 2022.
14. **Luo J**, Noordam R, et al. Associations of mtDNA copy number with circulating lipoprotein, lipid, and metabolite levels. Under submission.

PhD Portfolio

Courses	Years	Hours
PhD Introductory Meeting	2018	5
Introduction to Clinical Epidemiology	2018	56
Basic Methods and Reasoning in Biostatistics	2018	42
Academic Writing for PhDs	2019	60
Regression Analysis	2019	42
Clinical Epidemiology	2019	56
Prediction modelling and intervention research	2019	84
Causal Inference	2020	84
Statistical Aspects of Clinical Trials	2021	42
Meta-analysis	2021	28
Survival Analysis	2021	42
Analysis of Repeated Measurements	2021	42
Congress attendance	**Years**	**Hours**
Oral presentation 45th Annual Dutch Diabetes Research Meeting (NVDO)	2019	7
Oral presentation 6th Junior Dutch Endocrinology Meeting (JNVE)	2019	7
Poster presentation 26th European and International Congress on Obesity (ECOICO)	2020	14
Poster presentation 5th International conference on Mendelian randomization	2021	14
Oral presentation The Future of Mendelian Randomization Studies 2020	2021	21
Student supervision	**Years**	**Hours**
Yasufumi Hashimoto (exchange project)	2021	28
Maël Thielman (master thesis)	2021	42
Romy Kwakernaak (master thesis)	2021	42
Personal grant	**Years**	**Hours**
Chinese Scholarship Council	2018	-
Leiden University Fonds	2021	-

Curriculum Vitae

Jiao Luo was born on the 23rd of December 1991 in Hongya, China. She attended medical school at Sichuan University (China) from 2009 to 2014, whereafter she obtained her Master of Public Health degree in 2017 at the same university. She worked as a junior researcher handling data from clinical trials in the National Engineering Research Center of Immunological Products in Chongqing, China, between 2017 and 2018.

In 2018, she received a scholarship from the Chinese Scholarship Council to start as a PhD student at the Departments of Clinical Epidemiology and Internal Medicine (Section of Gerontology and Geriatrics) at the Leiden University Medical Center (LUMC), under the supervision of Prof. dr Saskia le Cessie, Dr. Diana van Heemst, and. Dr. Raymond Noordam. She spent part of her PhD abroad in Denmark at the Department of Clinical Biochemistry, Rigshospitalet - Copenhagen University Hospital, under the supervision of Prof. dr. Ruth Frikke-Schmidt. This research period was supported by a grant from the Leiden University Fonds (LUF).

From April 2022 onwards, she started as a postdoctoral researcher in the group of Prof. dr. Ruth Frikke-Schmidt at the Department of Clinical Biochemistry, Rigshospitalet - Copenhagen University Hospital.

Acknowledgements

I would like to thank all participants and staff of the Netherlands Epidemiology of Obesity study and UK Biobank as well as the genetics consortia on which the studies in this thesis are based.

This thesis would not have been possible without the help in many ways from many people.

Foremost, I would like to express my greatest appreciation to my promotor, prof. dr. Saskia le Cessie for your guidance, advice, and support. Saskia, if there would ever be an award to the best promotor, you are the one, being exceptionally professional but extremely nice and approachable.

I would like to extend my gratitude to my co-promotor, dr. Diana van Heemst. Diana, I am always amazed by how biologically knowledgeable you are, and thanks for your tremendous help in all discussions and for always being supportive of any projects I wanted to explore.

To my co-promotor, dr. Raymond Noordam. Raymond, thank you for taking me on this PhD project, for providing your valuable daily supervision, hands-on mentoring, and for allowing me to develop as an independent researcher. Thanks for your support in exploring new topics and for answering all my questions.

To my lovely colleagues at the epi and ouderengeneeskunde departments. I am so thankful for the 'gezellige' time throughout this journey, especially roomies from C7-125 who helped me learn and practice the word 'gezellig'.

I am grateful to my friends both from Leiden and back home in China for your company and support. A special acknowledgement to 胡静, who takes care of my parents during my absence. You know that we are more than friends, but non-blood-related sisters.

I would like to thank my parents, who offered me the priceless treasure in this world - education. Thank you for your unwavering encouragement and for shaping me into an independent, resilient, and thoughtful person. 我要诚挚地感谢我的父母。感谢你们为我提供了良好的家庭和教育环境，并把我塑造成了一个独立、坚忍和思辨的人。

Finally, to my best friend and beloved, Zhongwei. You have lightened up my life with love, support, encouragement, and most importantly, twisted humor. Without you, I would not have become the person I am today. I am glad you are here by my side on this special day. You are the incomparably best.