



Environmental factors and 24-hour movement behaviors in different contexts

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The project aims to examine the longitudinal associations between social, physical and natural environmental characteristics as well as climatic factors on 24-hour movement behaviors (i.e. physical activity, sedentary time and sleep). In addition, we will study how sociodemographic and contextual factors moderate the associations.

The project builds on four cohort studies from the University of Turku representing different age groups and life stages: **Steps to the Healthy Development and Well-being of Children, Special Turku Coronary Risk Factor Intervention Project, Cardiovascular Risk in Young Finns Study, and Finnish Retirement and Aging Study (FIREA)**. In all cohorts, various neighborhood-level indicators (e.g., socioeconomic disadvantage, greenness, climatic factors) are linked to participants home addresses and movement behaviors have been measured with accelerometers using 24-hour / 7-day protocol. In addition, physical activity and activity environments are measured with combined accelerometer and GPS device.

The interdisciplinary project will enhance our understanding how living environment and climatic factors may facilitate or hinder activity behavior. The project will produce knowledge for urban planning and policy making to make investments supporting active urban design and active travel. Moreover, the results will guide decision makers to focus on disadvantaged neighborhoods and to create and maintain environments that promote equitable access to spaces and places to engage regular physical activity and active travel.





Main publications:

Suorsa K, Leskinen T, Rovio S, Niinikoski H, Pentti J, Nevalainen J, Heinonen OJ, Lagström H, Jula A, Viikari J, Rönnemaa T, Raitakari O, Stenholm S, Pahkala K. Weekday and weekend physical activity patterns and their correlates among young adults. *Scand J Med Sci Sports*. 2023 Dec;33(12):2573-2584. doi: 10.1111/sms.14475. Epub 2023 Aug 25. <https://onlinelibrary.wiley.com/doi/10.1111/sms.14475>

Suorsa K, Gupta N, Leskinen T, Andersen LL, Pasanen J, Hettiarachchi P, Johansson PJ, Pentti J, Vahtera J, Stenholm S. Modifications of 24-h movement behaviors to prevent obesity in retirement: A natural experiment using compositional data analysis. *Int J Obes (Lond)* 2023 Oct;47(10):922-930. doi: 10.1038/s41366-023-01326-0. Epub 2023 May 23. <https://www.nature.com/articles/s41366-023-01326-0>

Pasanen S, Halonen JI, Suorsa K, Leskinen T, Kestens Y, Thierry B, Pentti J, Vahtera J, Stenholm S. Does work-related and commuting physical activity predict changes in physical activity and sedentary behaviour during the transition to retirement? GPS and accelerometer study. *Health and Place* 2023 May;81:103025. doi: 10.1016/j.healthplace.2023.103025. <https://pubmed.ncbi.nlm.nih.gov/37116252/>

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