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Promoting winter cycling and walking

Submission date 16/12/2025	**Recruitment status** Recruiting	[X] Prospectively registered [_] Protocol
Registration date 16/12/2025	**Overall study status** Ongoing	[_] Statistical analysis plan [_] Results
Last Edited 16/12/2025	**Condition category** Other	[_] Individual participant data [X] Record updated in last year

Plain English summary of protocol

Background and study aims
Multilevel active travel intervention on children's and families' travel practices (CHIFAM Travel) is a research project that aims to better understand the potential influences of prioritizing walking and cycling with winter maintenance and combined multilevel interventions on year-round active travel practices of children and their families. The CHIFAM Travel project conducts a clustered quasi-experimental controlled before–after study to understand if environmental, individual, social and organizational level changes influence children and their families' everyday active travel practices.

Who can participate?
Eligible participants are 4th and 5th graders (at baseline) from the four enrolled study schools and the guardians of these children.

What does the study involve?
The CHIFAM Travel project conducts a clustered quasi-experimental controlled before–after study to understand if environmental, individual, social and organizational level changes influence children and their families' everyday active travel practices. There will be winter maintenance interventions taking place in three study school neighbourhoods. One of these schools will also receive multi-component intervention, including group interventions at school with children and information campaign for guardians and children. One school serves as a waitlist control school, receiving the built environment level intervention only after the follow-up measurements.
The participants will take part in measurements at four timepoints: two pre-intervention baselines (winter and summer time) and at two post-intervention follow-ups (12- and 24-months post wintertime baseline.

What are the possible benefits and risks of participating?
The study provides valuable insights into children and their families active travel practices and the factors influencing their travel choices. This information can be used to plan winter maintenance practices, active travel policies and physical activity related services in cities areas. Participants will gain experience in scientific research and using measurement devices.

The potential risks of participating in this study are minimal and are not greater than those experienced during normal daily activities and transportation. However, the device used to

measure physical activity will be attached to the thigh with adhesive tape, which could cause minor skin irritation for some participants.

Where is the study run from?
Transport Research Center Verne at Tampere University runs the study.

When is the study starting and how long is it expected to run for?
The intervention study starts 01/2026 and is expected to end at 08/2028.

Who is funding the study?
The study is funded by the Research Council of Finland under grant number 363010

Who is the main contact?
Dr. Tiina Rinne
Assistant Professor, Academy Research Fellow
Transport Research Center Verne
Tampere University

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Dr Tiina Rinne

ORCID ID
https://orcid.org/0000-0001-8680-2263

Contact details
Korkeakoulunkatu 5
Tampere
Finland
33720
+358404544624
tiina.rinne@tuni.fi

Additional identifiers

Study information

Scientific Title
Promoting winter cycling and walking: a clustered quasi-experimental multi-component intervention in Oulu school neighbourhoods

Acronym
CHIFAM Travel

Study objectives

The overall aim of the CHIFAM Travel intervention is to examine if prioritizing cycling and walking in winter maintenance can increase children and their families' wintertime active travel practices. We expect this intervention to promote children's active travel mode use, reduce the private vehicle chauffeuring of children and increase children's physical activity levels.

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 12/09/2025, Ethics Committee of the Tampere Region (Kalevantie 4, Tampere, 33100, Finland; +358 (0) 294 52 11; heikki.eilo@tuni.fi), ref: 155/2025

Primary study design
Interventional

Allocation
Non-randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Due to the strong real-life environmental level intervention element (winter maintenance) embedded in the project the cluster assignment and intervention strategies are informed by context-sensitive approaches, considering variations in school-level factors such as school availability for the interventions and the socio-demographic, built environment and travel mode profiles of the schools (A, B, C, D). School B has specifically requested to participate in the study as a waitlist control school receiving the built environment level intervention only after the follow-up measurements, thus school B will be assigned as the control group. Based on the background characteristics, school A serves as a best match for school B, thus school A will be assigned to a multi-level intervention cluster receiving built environment level intervention combined with multiple other intervention elements. The two remaining schools (school C, school D) receive only the built environment intervention. This design enables us to compare between no intervention and built environment component, with a no intervention and a combined multi-component intervention and with built environment and multilevel intervention components.

Purpose
Basic science, Prevention

Study type(s)

Health condition(s) or problem(s) studied
Increasing active travel (walking and cycling) among children in winter conditions.

Interventions

The same participants will be followed at two pre-intervention baselines (winter and summer time) and at two post-intervention follow-ups (12- and 24-months post wintertime baseline). We follow the same pupils in the four study schools (three intervention, one control) at wintertime and summertime baselines, then assess within-subject changes at two time-points in wintertime follow-ups, accounting for school-level clustering.

The intervention and the measurements are administered and delivered by the researchers, who adjust the details of the activities and timetables in cooperation with the school principal and teachers. The intervention activities mainly take place during school hours. The control group receives a delayed built environment intervention and the schools receive the materials for their own use, after the end measurements. Communication between the researchers and the participants and their guardians is facilitated by direct email and phone contacts, as well as by using the schools' application for communication with the guardians.

Built Environment level intervention
Winter maintenance on cycling and walking paths as well as on those roadways shared with cycling and walking in the neighbourhood areas around intervention schools will be improved. Together with the City of Oulu Transport Planning and Road maintenance authorities we will assign certain driveways and cycling and walkways belonging to the winter maintenance classes II and III to better maintenance categories.

Individual and Familial level intervention
Families will be engaged through an information campaign designed to enhance their understanding of the positive effects of active travel on physical health, well being, and the environment. The campaign will use flyers that include maps highlighting the accessibility of school areas, along with educational content about the benefits of active travel. Researchers will also aim to deliver a presentation during a parent evening (vanhempainilta) at the school, sharing insights into children’s active travel habits and their impact.

Social-Organisational level intervention
The social-organisational level intervention element will be conducted as per the principles of Participatory Action Research (PAR). Here, the intervention process and design will be collaborative, involving researchers and pupils in designing the intervention. This approach emphasizes co-learning, empowerment of children and adds contextual relevance to ensure that the intervention is as relevant and meaningful as possible for the participating school and pupils. The intervention element will be designed with pupils based on the baseline data results which will be analysed and interpreted in collaboration with the pupils. Thus, the baseline findings will be used to create and design an intervention element that the pupils find most appropriate and relevant to increase wintertime active travel practices.

Intervention Type
Mixed

Primary outcome(s)
1. Geospatial mode specific travel duration measured using participatory mapping at 2026, 2027, 2028

Key secondary outcome(s))
1. Moderate to vigorous physical activity measured using accelerometry at 2026, 2027, 2028

2. Perceived health and wellbeing measured using WHO-5 at 2026, 2027, 2028

3. Travel Mode Share measured using participatory mapping at 2026, 2027, 2028

Completion date
31/08/2028

Eligibility

Key inclusion criteria
1. 9-12year-old child (at baseline) who attend classes in the study schools
2. Give informed consent and have their guardian's consent to participate
3. Additionally, from amongst the participants, a sample of 9- to 12 years old (at baseline) children with diverse travel habits and their guardians will be recruited for the semi-structured interviews
4. Additionally, from amongst the participants, a sample of 9- to 12 years old (at baseline) children will be recruited for accelerometer measurements
5. Additionally, a guardian of a participating child will be recruited to participate in the participatory mapping survey

Healthy volunteers allowed
Yes

Age group
Child

Lower age limit
9 years

Upper age limit
14 years

Sex
All

Total final enrolment
0

Key exclusion criteria
Not meeting the inclusion criteria.

Date of first enrolment
02/02/2026

Date of final enrolment
31/03/2028

Locations

Countries of recruitment
Finland

Sponsor information

Organisation
Tampere University

ROR
https://ror.org/033003e23

Funder(s)

Funder type

Funder Name
Research Council of Finland

Alternative Name(s)
Academy of Finland, Suomen Akatemia, Finlands Akademi, AKA

Funding Body Type
Government organisation

Funding Body Subtype
Research institutes and centers

Location
Finland

Results and Publications

Individual participant data (IPD) sharing plan
After the research project ends, fully anonymized data will be stored in the publicly available repository (Zenodo / https://zenodo.org/) as open data for 5 years. However, all respondents' home locations and background information classified as personal data will be completely removed from the anonymized dataset. The published spatial dataset will include everyday location markings, which will also be anonymized in accordance with a validated protocol (1) for anonymizing spatial participatory mapping data.

1. Hasanzadeh, K., Kajosaari, A., Häggman, D., & Kyttä, M. (2020). A context sensitive approach to anonymizing public participation GIS data: From development to the as-sessment of anonymization effects on data quality. Computers, Environment and Urban Systems, 83, 101513.

IPD sharing plan summary
Stored in publicly available repository