

Te Ara Mua-Future Streets

Submission date 14/06/2018	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
Registration date 21/06/2018	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 11/07/2018	Condition category Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

A shift to more walking and cycling for transport and recreation has the potential to benefit health and equity. Road traffic injuries cause death and disability in New Zealand, while vehicle-related air pollution has a comparable mortality cost. New Zealand has the OECD's third highest rate of obesity, partly caused by physical inactivity. Obesity and inactivity cause a wide range of negative health impacts and are influenced by physical and social environments. Car-dependent urban transport patterns create social and health inequities and contribute to climate change, arguably this century's most pressing public health problem. Existing evidence suggests that encouragement alone is ineffective for achieving healthy change, and that environmental change may be needed. Research to support effective interventions for shifting from car dependence towards healthier transport is difficult to undertake and therefore uncommon. Natural experiment studies of improving urban infrastructure for walking and cycling have shown some positive outcomes but are prone to bias. Evidence suggests longer term follow-up is needed (over 2 years) to see the effects of such interventions. The aim of this study is to measure the effectiveness of street changes on a range of public health outcomes in a mainly Pacific and Māori community. The intervention changes the design of streets to prioritise walking and cycling, improve safety and social connection, and reflect indigenous history and aspirations.

Who can participate?

Residents aged 7 and over who live in the study areas during the study period

What does the study involve?

Two areas of Auckland are randomly allocated to be either the intervention area or the control area. In the intervention area the changes include: improving and widening footpaths, new pedestrian crossings, pedestrian priority across side streets, improved routes through linear parks, a fitness trail, improvements to lighting and informal surveillance, cycle lanes, way-finding, and landscaping. Changes in walking and cycling, traffic speeds and volumes, physical activity, road traffic injuries, neighbourhood perceptions and greenhouse gas emissions are measured before and after the intervention.

What are the possible benefits and risks of participating?

The possible benefits of taking part in the study include the health, social and financial benefits of having improved access to safer walking and cycling for short distances in the neighbourhood

(for example improved physical activity, reduced fuel costs and greater neighbourhood social connection). Some possible benefits also come at a community level from community level participation (such as improved air quality, community sense of safety from crime, and reduced motor vehicle traffic). The possible risks of taking part include the possibility of physical injury from walking and cycling, and potentially in this context a risk of exposure to criminal activity. The design of the intervention is focused on making walking and cycling safer (from crime and road traffic injury), and multiple studies have demonstrated that the benefits of increasing daily walking and cycling outweigh the risks of injury in almost all settings.

Where is the study run from?

1. Māngere Central (New Zealand)
2. Māngere East (New Zealand)

When is the study starting and how long is it expected to run for?

October 2012 to December 2021

Who is funding the study?

1. Ministry for Business Innovation and Employment (New Zealand)
2. NZ Transport Agency (New Zealand)
3. Auckland Transport (New Zealand)
4. Māngere-Otahuhu Local Board (New Zealand)

Who is the main contact?

Dr Alexandra Macmillan

alex.macmillan@otago.ac.nz

Contact information

Type(s)

Scientific

Contact name

Dr Alexandra Macmillan

ORCID ID

<https://orcid.org/0000-0002-9421-1313>

Contact details

Public Health Physician and Senior Lecturer
Environmental Health
Department of Preventive and Social Medicine
University of Otago
PO Box 56
Dunedin
New Zealand
9054
+64 (0)3 479 7196
alex.macmillan@otago.ac.nz

Additional identifiers

Study information

Scientific Title

Te Ara Mua-Future Streets: a controlled before-after intervention study of suburb-level street changes for walking and cycling in Auckland, New Zealand

Acronym

Future Streets

Study objectives

Changing the physical environment to make walking and cycling safer and more attractive is an effective way to increase walking and cycling at a population-level, and thereby improve health and health equity.

Ethics approval required

Old ethics approval format

Ethics approval(s)

University of Auckland Human Participants Ethics Committee, 06/11/2013, ref: 010723

Study design

Single-centre area-level randomised unblinded controlled before-after intervention study

Primary study design

Interventional

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Transport-related public health outcomes (physical activity, road traffic injury, social connection, air and climate pollution, diabetes risk)

Interventions

Two areas of Auckland have been randomised into an intervention and control area. The project statistician used a computer random number generator to select the intervention area. The other area was designated as the control area. There was no allocation of concealment possible for the researchers, the participants, the people completing the intervention or during the analysis.

A policy-research-community co-design process has resulted in the design of physical street changes to prioritise walking and cycling. Changes comprise: improving and widening footpaths, new pedestrian crossings; pedestrian priority across side streets; improved routes through linear parks; a fitness trail; improvements to lighting and informal surveillance; cycle lanes; way-finding; and landscaping.

Intervention Type

Other

Primary outcome(s)

1. Changes in walking and cycling, measured by a longitudinal random sample face-to-face survey of residents which includes a 1-week travel diary (baseline 2014; 2017; 2019)
2. Traffic speeds and volumes, measured by tube counters (2014, 2017, 2019)
3. Changes in physical activity, measured by a 7-day pedometer protocol in random sample survey participants, and by IPAQ questionnaire in the survey (2014, 2017, 2019)
4. Road traffic injury, measured objectively using hospitalisation and national crash analysis system (cas) data, and self-reported in the survey (2010-2014 and 2017-2021)
5. Neighbourhood perceptions, measured by validated survey questions (2014, 2017, 2019)
6. Greenhouse gas emissions, modelled from survey travel data (2014, 2017, 2019)

Key secondary outcome(s)

1. Road user behaviour, measured by video monitoring (2014, 2017, 2019)
2. Air quality, measured by stationary NO2 monitoring (2014, 2019)
3. Perceptions of walking and cycling, measured by in-depth qualitative interviews and focus groups (2014, 2018)
4. Researcher assessed changes in safety and security, measured with validated street audit tool (2014, 2019)
5. Diabetes risk, measured with a retrospective anonymised dataset of HbA1c tests taken from residents in the study areas before and after the intervention

Completion date

31/12/2021

Eligibility

Key inclusion criteria

1. Participants must be resident in the intervention and control area during the study period
2. Two age groups are included in the survey: 7-13 year-olds, and 13 years and over

Participant type(s)

All

Healthy volunteers allowed

No

Age group

All

Sex

All

Key exclusion criteria

1. Participants were excluded from survey and pedometer participation if they were not able to mobilise outside their house
2. Participants were excluded from participating in the survey and pedometer measurement if they were less than 7 years of age

Date of first enrolment

10/10/2013

Date of final enrolment

15/12/2019

Locations**Countries of recruitment**

New Zealand

Study participating centre**Māngere Central**

Auckland

New Zealand

2022

Study participating centre**Māngere East**

Auckland

New Zealand

2024

Sponsor information**Organisation**

University of Auckland

ROR

<https://ror.org/03b94tp07>

Funder(s)**Funder type**

Government

Funder Name

Ministry for Business Innovation and Employment

Alternative Name(s)

MBIE

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

New Zealand

Funder Name

NZ Transport Agency

Funder Name

Auckland Transport

Funder Name

Māngere-Otahuhu Local Board

Results and Publications

Individual participant data (IPD) sharing plan

The data sharing plans for the current study are unknown and will be made available at a later date.

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol article	protocol	09/07/2018		Yes	No