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Do new Low Traffic Neighbourhoods (LTNs) in London lead to more walking and cycling?

Submission date
26/03/2021

Recruitment status
No longer recruiting

Registration date
31/03/2021

Overall study status
Completed

Last Edited
24/10/2024

Condition category
Other

[X] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol

Background and study aims

In recent years, levels of motor traffic started increasing again after a period of decline. This is worrying for many reasons. Every year in the UK two thousand people die in road crashes, and tens of thousands are seriously injured. Tens of thousands die early each year because of air pollution or noise pollution, much of which comes from motor vehicles. If people walk or cycle more, and drive less, they are also much more likely to get the exercise they need to stay healthy.
The way we travel is not just a matter of personal choice. Our streets are often busy with cars, even smaller side streets. Streets are difficult to cross on foot, particularly for older people. They are scary to cycle on, particularly for children. This can mean that the easiest and most comfortable way to travel is by car. The pandemic can make walking even more difficult, especially for vulnerable groups, as it is hard to socially distance on narrow pavements.
For these reasons, local authorities have been implementing schemes that restrict motor traffic and make more space for walking or cycling. 'Low Traffic Neighbourhoods' are a type of traffic scheme that stop people in motor vehicles cutting through residential streets. This approach is widely used in the Netherlands but less common here. The aim is to make walking and cycling safer and more comfortable (as there are fewer cars), and make driving less convenient, encouraging people to walk or cycle instead. Because around 90% of people live on residential streets, if these schemes work they could become widely used. Already 4% of Londoners live in a Low Traffic Neighbourhood built from March to September 2020.
However, these schemes are controversial and many people object, although there is also strong support. It is important to know whether the goals – to get more people walking and cycling and reduce driving – are being met. We also need to know about any negative impacts on roads at the boundaries of these schemes, where there might be increases in motor traffic. But measuring these effects is difficult because travel patterns keep changing during the pandemic, so we need a scientific study.
This study will compare how volumes of walking, cycling, and driving change after new Low Traffic Neighbourhoods are built in six London boroughs. The researchers will examine the impacts both inside and on boundary roads.

Who can participate?
The study uses anonymous data on usage of street locations gathered from machine learning cameras, supplemented by observations of user characteristics (e.g. apparent gender) from which only anonymous aggregated data will be recorded and stored.

What does the study involve?
The researchers will collect data using Vivacity cameras, which are mounted on lampposts and film the street, automatically counting the number of pedestrians, cyclists and vehicles that pass. This is anonymous, 24/7 data, so the researchers can look at shorter-term disruption and longer-term effects. They can also look at changes in speeds and where people walk or cycle (e.g. pavement or road). They will fit cameras in similar, nearby roads that are not getting a Low Traffic Neighbourhood ('control sites'). This will mean that, for example, they can separate out increases in walking due to Low Traffic Neighbourhoods from increases in walking because lockdown is lifted or the weather improves. This will allow the researchers to reliably measure the effects of Low Traffic Neighbourhoods on how people travel, and any negative effects on scheme boundary roads.

What are the possible benefits and risks of participating?
The study will inform the debate about the impacts of LTNs and the potential disbenefits. In a contested policy area such evidence is important. However, the study is limited in only covering LTNs in London, although these are being chosen to ensure a mix of areas.

Where is the study run from?
Westminster University (UK)

When is the study starting and how long is it expected to run for?
December 2020 to May 2025

Who is funding the study?
National Institute for Health Research (UK)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
NIHR133798

Study information

Scientific Title
Low Traffic Neighbourhoods in London: baseline for a controlled before-and-after study

Study objectives
Research questions:
1. Do new Low Traffic Neighbourhoods (LTNs) lead to more, and more diverse, walking and cycling (active travel), compared to control areas?
2. Does traffic displacement of motor vehicles lead to unintended consequences on boundary roads?

Ethics approval required
Old ethics approval format

Ethics approval(s)
Conditionally approved 22/03/2021, Westminster University Research Ethics Committee (309 Regent Street, London, W1B 2HW, UK; Tel: not available; H.Kelly01@westminster.ac.uk), ref: ETH2021-0902

Study design
Observational controlled before-and-after study

Primary study design
Observational

Study type(s)
Other

Health condition(s) or problem(s) studied
Changes in the use of different transport modes affect health through a variety of pathways and conditions (e.g. via increased physical activity)

Interventions
The intervention group will be streets that are (a) key travel desire lines inside Low Traffic Neighbourhoods (LTNs) or (b) boundary roads. The comparison group will be similar matched streets in the same borough where no substantial transport intervention is planned. Machine learning cameras (Vivacity cameras) will be installed several months before interventions start, at control and intervention sites to record changes of use of all types of transport, including walking, and information such as speeds and paths taken. This will be supplemented by manual observations of the diversity of pedestrians and cyclists (apparent gender and adults/children).

The analysis will initially stratify by LTN scheme and by inside LTN vs. boundary – i.e. comparing each site with its control site separately. Meta-analysis methods will then be used to pool results across LTNs if appropriate (but still stratifying inside LTN vs. boundary). Primary outcomes (change in active travel and car use) will also be stratified by time-of-day (peak/interpeak) and weekday/weekend.

Intervention Type
Other

Primary outcome(s)
Measured using machine learning cameras (Vivacity cameras) for 2 years:
1. Number of (i) pedestrians, (ii) cyclists, (iii) e-scooters
2. Number of (i) cars/taxis, (ii) motorcycles, (iii) vans, (iv) trucks
3. Motor vehicle congestion, defined in terms of a count of vehicles within a given zone

Key secondary outcome(s))
Measured using manual observations for 12 hours of footage per LTN and matched control site in June 2021, covering the week-day morning peak, interpeak, after school, evening peak, weekend morning, weekend afternoon:
1. Active travel diversity 1: % pedestrians using wheelchairs
2. Active travel diversity 2: % pedestrians with pushchairs; % bicycles that are cargo bikes
3. Active travel diversity 3: % (i) pedestrians and (ii) cyclists who are children
4. Active travel diversity 4: % female cyclists

Measured using machine learning cameras (Vivacity cameras) for 2 years:
5. % footway versus carriageway use by pedestrians, e-scooters, and cyclists
6. Average motor vehicle speeds and % exceeding speed limit

Completion date
30/05/2025

Eligibility

Key inclusion criteria
The study uses anonymous data on usage of street locations gathered from machine learning cameras, supplemented by observations of user characteristics (e.g. apparent gender) from which only anonymous aggregated data will be recorded and stored. Note therefore that the dates given below relate to the planned study length.

Participant type(s)
All

Healthy volunteers allowed
No

Age group
All

Sex
All

Total final enrolment
8000000

Key exclusion criteria
There are no exclusion criteria

Date of first enrolment
01/04/2021

Date of final enrolment
31/03/2023

Locations

Countries of recruitment
United Kingdom

England

Study participating centre

Westminster University
London
United Kingdom
NW1 5LS

Sponsor information

Organisation
University of Westminster

ROR
https://ror.org/04ycpbx82

Funder(s)

Funder type
Government

Funder Name
National Institute for Health Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
Participant-level data is not being collected.

IPD sharing plan summary
Not expected to be made available