

# Transport values

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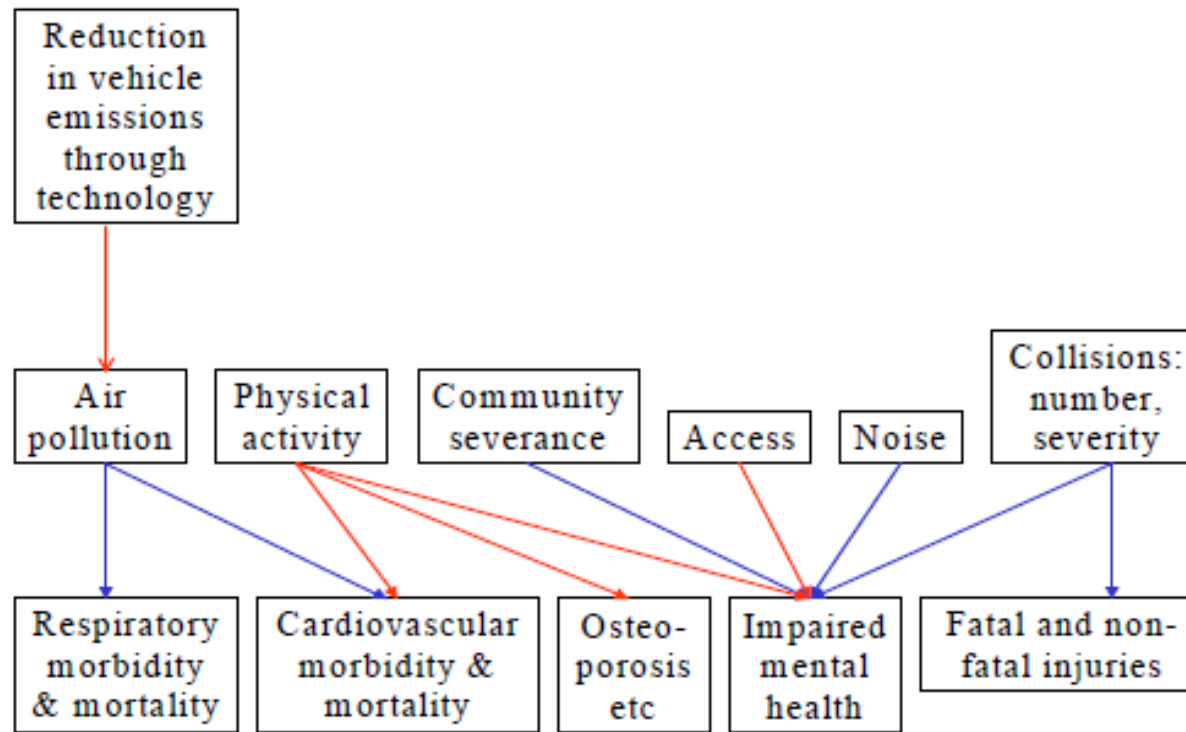
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# Outline

- Why transport and health?
- Some issues in Wales
- Injuries
- Community severance
  - The barrier effect of busy roads
- Walking speed of older people
- Forward-looking policies in Wales

# Air Quality Management

## Emissions control as a technical fix



# Transport and health



## Benefits

- Access
- Physical activity
- Green & blue spaces



# Access to goods, services, and people

- Employment
- Education
- Shops
- Health and other services
- Social support networks
- Recreation



# Health benefits of walking and cycling

- Walking and cycling:
  - can provide the same health benefits as sports or other exercise
  - can increase cardiorespiratory fitness
  - to work is as effective as a training programme and can fulfil the recommendations for physical activity.





# Transport and health

## Harms

- Sedentary behaviour
- Air pollution
- CO<sub>2</sub> emissions
- Noise
- Tarmac
- Community severance
- Injuries

## Benefits

- Access
- Physical activity
- Green & blue spaces



# Health impacts of air pollution



- Asthma
- Other respiratory disease
- Heart attacks
- Stroke
- Lung cancer
- *Obesity*
- *Dementia*

WHO: 7,000,000 deaths pa globally from air pollution exposure



# Noise pollution from busy roads

- Raised blood pressure
- Interference with concentration and with sleep
- Disruption of education

# Wales



*Image by Meatle from Pixabay*

# National Survey for Wales 2020-21

89% of people in Wales use a bicycle less often than once or twice a month [or never use one.]

3% of people in Wales use a bike once or twice a week

51-54% of adults active for at least 150 minutes in the previous week.

37% of adults reported a healthy weight.

59% of adults were overweight or obese:

- 23% obese
- 36% overweight



- 23% of people in Cardiff cycle at least once a week  
Sustrans 2021
  - [Walking and Cycling Index 2021: Cardiff \(sustrans.org.uk\)](https://www.sustrans.org.uk/walking-and-cycling-index-2021-cardiff)
- 22% in 2019
- 20% in 2015



*Image by Dean Moriarty from Pixabay*

# Inequalities in benefits & harms

## ***‘Transport gluttony’***

Susan Claris, Living Street VP & Associate  
Director, Arup

# Valuing everyone

*“An imbalance between rich and poor is the oldest and most fatal ailment of all republics.”*

Attributed to Plutarch, Greek Historian, first century CE



# Transport and inequalities, e.g.

- Age:
  - young & old disproportionately in poorer groups
  - less car access
- Gender: Women less car access than men
  - Girls less independent mobility than boys
- Socio-economic
  - within countries
  - between countries (eg effects of climate change)
- Ethnicity

# Health inequalities from busy roads

## Air pollution

- Poorer people:
  - More exposed to air pollution from motor traffic
  - More susceptible to health impacts of pollution





Contents lists available at ScienceDirect

## Journal of Transport & Health

journal homepage: [www.elsevier.com/locate/jth](http://www.elsevier.com/locate/jth)



# Comparative fatality risk for different travel modes by age, sex, and deprivation



Robel Feleke<sup>a</sup>, Shaun Scholes<sup>b</sup>, Malcolm Wardlaw<sup>c</sup>, Jennifer S. Mindell<sup>b,\*</sup>

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### ARTICLE INFO

#### Keywords:

Road traffic fatality  
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Deprivation

### ABSTRACT

**Background:** Cycling is perceived as an unsafe travel mode in many countries. However, road deaths in England have fallen sharply since 2007. We explored whether differences in fatality rates by age, gender and mode persist, and the associations of deprivation with these.

**Methods:** Using ONS (cycling, pedestrian) and Stats19 (driving) 2007–2012 data for travel-related deaths, including pedestrian falls, and National Travel Surveys 2007–2012 travel data, we calculated fatality rates for England by distance (f/bnkm) and time travelled (million hours' use, f/mhu) by age, travel mode, and gender or residential Index of Multiple Deprivation.

**Results:** Fatality rates fell significantly 2007–2009 to 2010–2012: male f/bnkm from 2.8 (95%CI 2.7–2.9) to 2.0 (1.9–2.1) for driving; 32.1 (28.5–36.0) to 20.8 (18.1–23.9) for cycling; and 51.4 (48.5–54.4) to 36.7 (34.3–39.3) for walking. Fatality rates varied by age, gender, and mode. Driving and walking fatality rate ratios were generally higher for males than females. For males

Feleke R, *et al.* Comparative fatality risk for different modes of transport in England by age, sex, and deprivation. *J Transp Health*. 2018;**8**:307–20.

[www.sciencedirect.com/science/article/pii/S2214140517301457](http://www.sciencedirect.com/science/article/pii/S2214140517301457)

(open access)

# Perceptions of Danger: the role of the media

- Discrepancy between public perception of the dangers of cycling and the reality.
- Cycling trips in London doubled 1992 to 2012
- The proportion of cycling fatalities covered in the local media increased from 6% in 1992–1994 to 75% in 2010–2012.
- The coverage of motorcyclist fatalities remained low:
  - 4% in 1992–1994, 5% in 2010–2012
- Media coverage on cycle fatalities is disproportionate both to the absolute risk and relative to other road travel fatalities (MacMillan *et al*, 2016  
<https://www.sciencedirect.com/science/article/pii/S0001457515300981>)



Contents lists available at ScienceDirect

# Accident Analysis and Prevention

journal homepage: [www.elsevier.com/locate/aap](http://www.elsevier.com/locate/aap)



## Trends in local newspaper reporting of London cyclist fatalities 1992–2012: the role of the media in shaping the systems dynamics of cycling

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<sup>b</sup> College of Medical and Dental Sciences; University of Birmingham, Birmingham, UK

<sup>c</sup> UK CRC Centre for Diet and Activity Research (CEDAR), MRC Epidemiology Unit, University of Cambridge School of Clinical Medicine, University of Cambridge, Cambridge, UK

<sup>d</sup> Department of Planning and Transport, Faculty of Architecture and the Built Environment, University of Westminster, London, UK

<sup>e</sup> Faculty of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, UK

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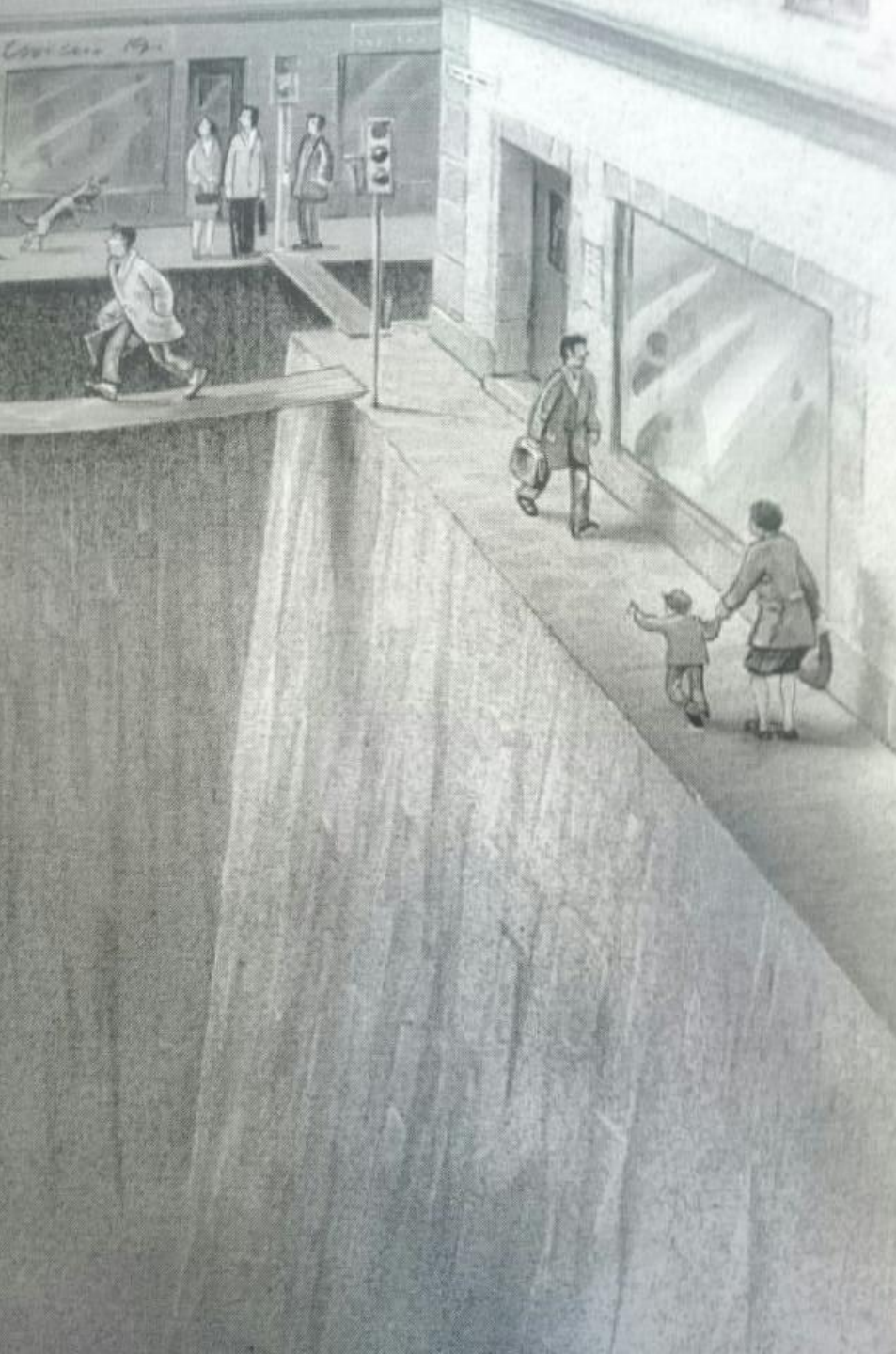
Cycling  
Fatality  
Injury  
Media

### ABSTRACT

**Background:** Successfully increasing cycling across a broad range of the population would confer important health benefits, but many potential cyclists are deterred by fears about traffic danger. Media coverage of road traffic crashes may reinforce this perception. As part of a wider effort to model the system dynamics of urban cycling, in this paper we examined how media coverage of cyclist fatalities in London changed across a period when the prevalence of cycling doubled. We compared this with changes in the coverage of motorcyclist fatalities as a control group.

**Methods:** Police records of traffic crashes (STATS19) were used to identify all cyclist and motorcyclist fatalities in London between 1992 and 2012. We searched electronic archives of London's largest local newspaper to identify relevant articles (January 1992–April 2014), and sought to identify which police-reported fatalities received any media coverage. We repeated this in three smaller English cities.





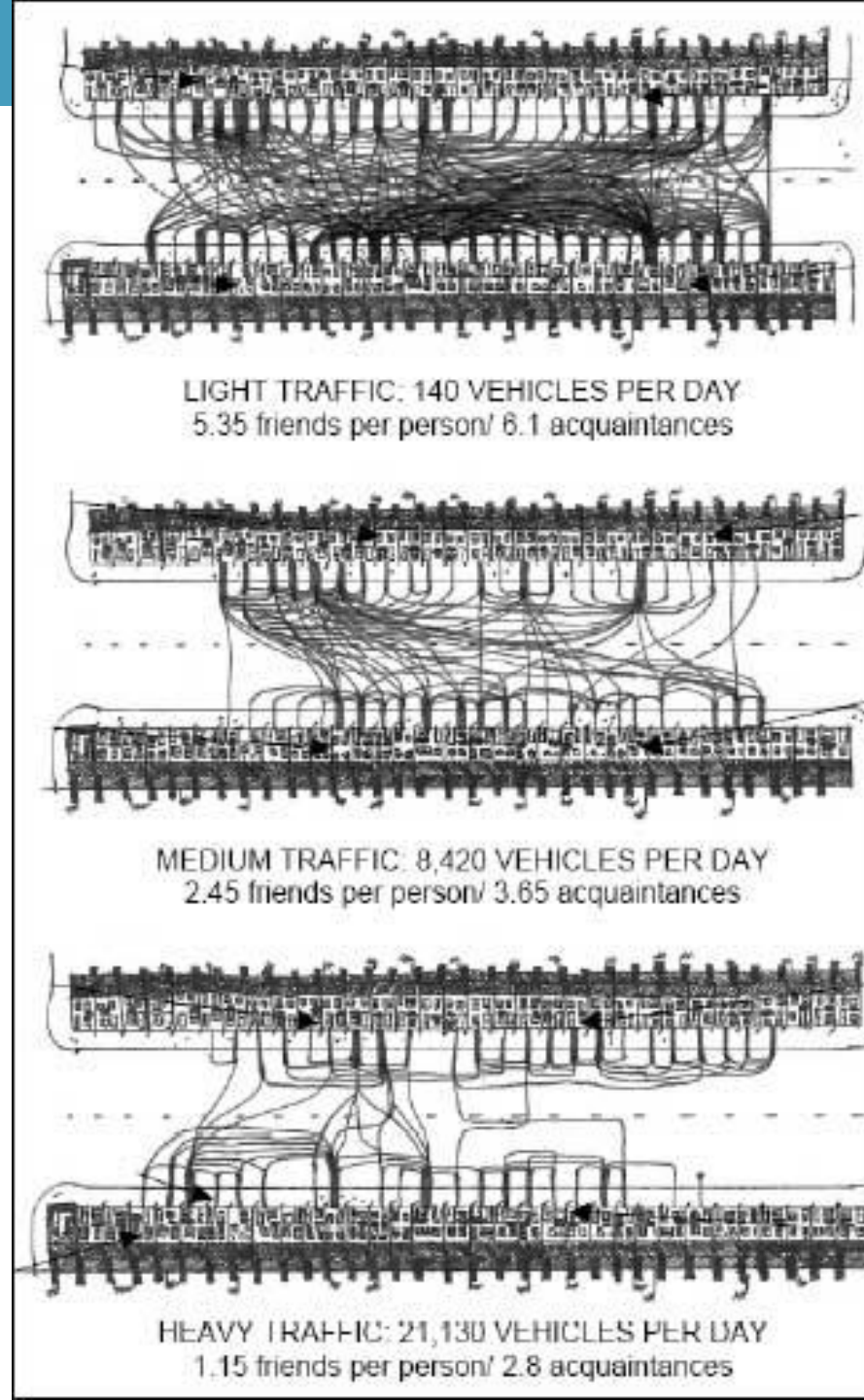
# **COMMUNITY SEVERANCE**

**The barrier effect of  
busy roads**



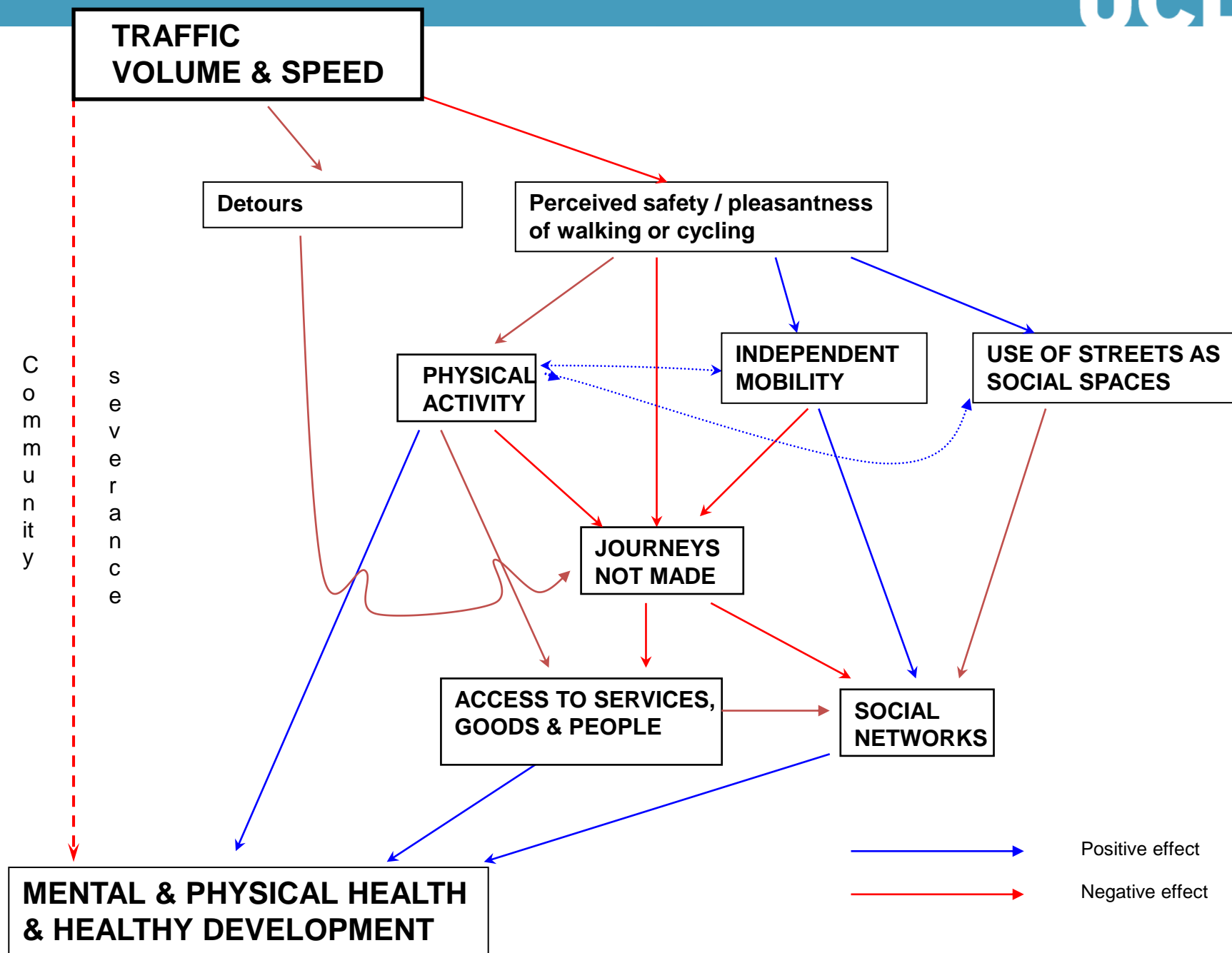
# Community severance

Appleyard D & Lintell M (1972).  
The environmental quality of city streets: the residents' viewpoint.  
*Journal of the American Institute of Planners*, 38(2), 84-101.



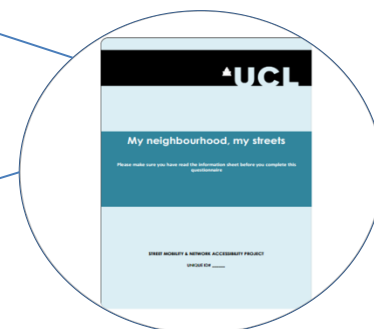
# What is community severance?

- The barrier from transport infrastructure or from the volume &/or speed of traffic impedes people's access to goods, services, and people
- Importance of social networks, including casual acquaintances – greeting in street
- And use of streets as social spaces
- Importance of independent mobility for children's phys & mental devel & self-esteem





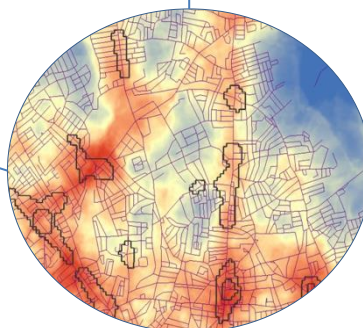
**Participatory mapping**



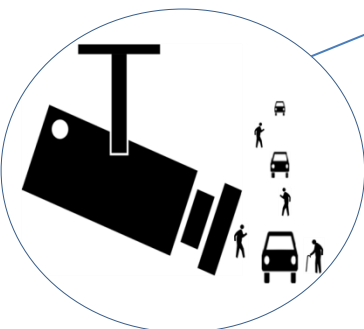
**Household survey**



**Stated preference survey**



**Spatial analysis**



**Video surveys**



**Street audits**

# Street Mobility Toolkit

- Designed to assist local authorities, consultants and local communities to better understand CS and what to do about it
- Provides advice on how to measure CS, and to assess impacts on local communities
- Some tools aimed at local communities, others at transport professionals



# Community severance measurement toolkit

[www.ucl.ac.uk/street-mobility/toolkit](http://www.ucl.ac.uk/street-mobility/toolkit)

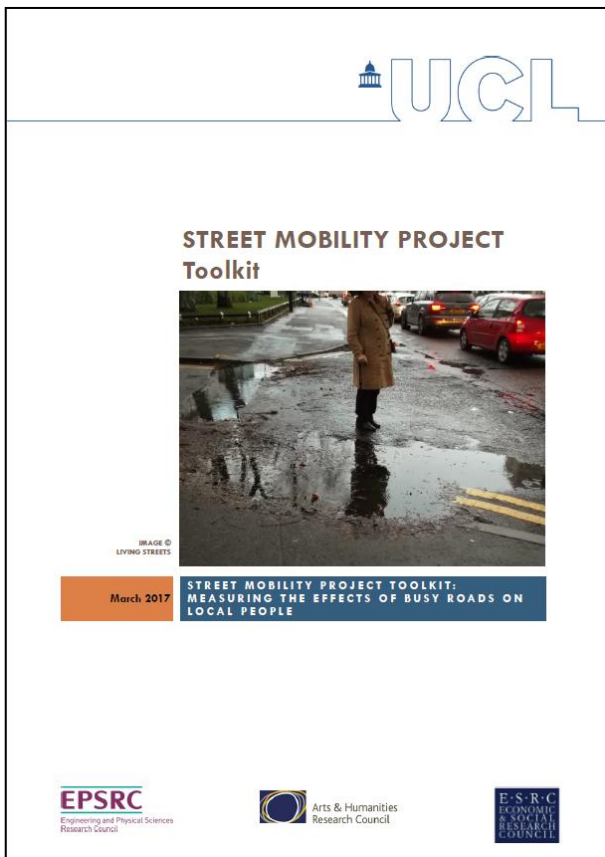
Most of the toolkit is now available to download. The valuation tool will follow soon.

For more information about the project, see:

[www.ucl.ac.uk/street-mobility/project](http://www.ucl.ac.uk/street-mobility/project)

For more details, see eg

[www.ucl.ac.uk/street-mobility/publications](http://www.ucl.ac.uk/street-mobility/publications)





# Road traffic, walking, and wellbeing



Anciaes et al. Perceptions of road traffic conditions along with their reported impacts on walking are associated with wellbeing. *Travel Behaviour and Society*. 2019;**15**:88-101.

# Road traffic, walking, and wellbeing

- Perceptions about traffic volumes and speeds affect each other, and depend on: traffic composition; how the speed of traffic varies during the day; and relates to past experience.
- Participants who perceived the traffic volume as heavy and the traffic speed as fast were more likely to report that the traffic conditions were a barrier to walking locally.
  - This was a specific reason why they avoided the busiest road in their area.
- The participants with the worst perceptions of road traffic conditions and worse reported impacts of that on their walking had, on average, significantly lower wellbeing.
- independently of other factors such as demographics and location

# Does community severance affect health?

- Nationally representative online panel survey of adults in GB
- N= 4,111, February-July 2016
- Factor analysis to determine the most important aspects of community severance
- Examined association with health: binomial regression modelling



**Higgsmith M**, Stockton J, Anciaes P, Scholes S, Mindell JS. Community severance and health – A novel approach to measuring community severance and examining its impact on the health of adults in Great Britain. *Journal of Transport & Health*. 2022;**25**:101368. <https://doi.org/10.1016/j.jth.2022.101368>

# Factor analysis

Variable	Factor 1 (eigenvalue= 2.89) Loadings <i>[high]</i>	Uniqueness [low]	Kaiser Meyer Olkin Test result [high]
Speed of traffic	0.90	0.19	0.73
Amount of traffic	0.90	0.19	0.72
Lack of crossing points	0.85	0.29	0.81
Adequate crossing time	0.74	0.45	0.81

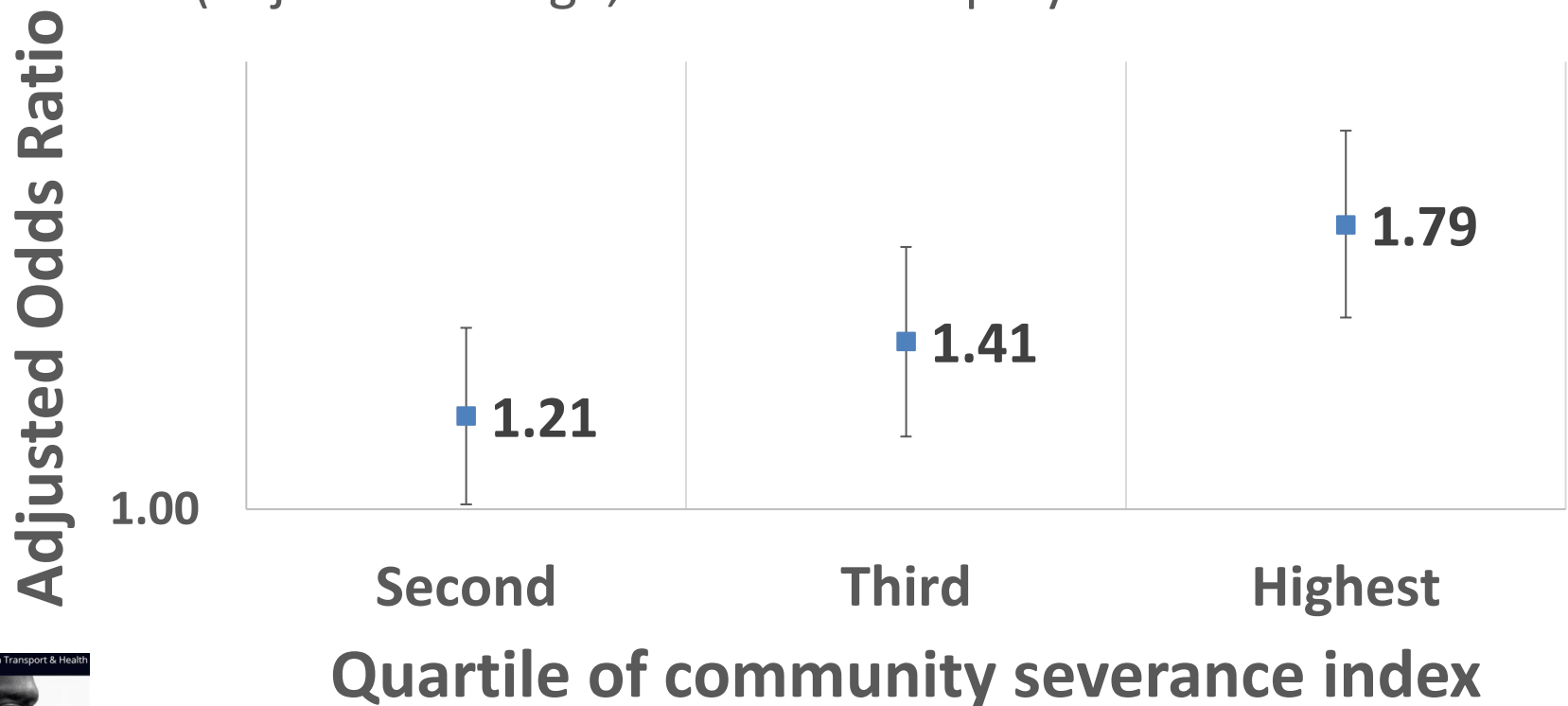
# Factor analysis - comments

- Perceptions of road traffic speed and volume were the most important aspects
- Less important, but still loading at more stringent levels of inclusion, were factors relating to crossing points and adequate crossing time
- This suggests that **community severance is a combination of perceptions of traffic levels and of the ease of crossing the potential barrier**



# Findings

**Odds of reporting poor self-rated health**  
(adjusted for age, income & employment status)





- After adjusting for age, income and employment status, being in the highest CSI group was associated with higher odds of reporting poor self-rated health
- A dose-response gradient observed: those in the second and third highest CSI groups also having increased odds of reporting poor self-rated health, though of lower magnitude

# The cost of the wider impacts of road traffic on local communities: 1.6% of Great Britain's GDP

- £31.9 billion per year
- **Anciaes P**, Jones P, Mindell JS. *Transportation Research Part A: Policy and Practice*. 2022;**63**:266-287.  
<https://doi.org/10.1016/j.tra.2022.05.016>

# The negative effects of motor traffic

on the travel and walking behaviour of local residents in Great Britain, and the costs of the wider impacts on:

- local economic activity,
- external effects of motorised transport,
- social exclusion,
- neighbourhood social capital,
- self-rated health, and
- subjective wellbeing.



# Street Mobility project team

## Investigators

- Jenny Mindell (director)
- Nora Groce
- Muki Haklay
- Peter Jones
- Shaun Scholes
- Laura Vaughan

## Researchers & Support

- Paulo Anciaes
- Ashley Dhanani
- Jemima Stockton
- Sadie Boniface
- Sadaf Sultan Khan
- Lusine Tarkhanyan
- Barbara Carter-Szatynska

## Mapping for Change

- Louise Francis
- Rebecca Payne
- Barbara Bonney
- Claire Baldock

Crossing the road

# **WALKING SPEEDS OF OLDER PEOPLE**



# Crossing times

- Pedestrian lights crossing times in UK, Australia, USA assume walking speed of 1.2m/s (2.7mph, 4.3kph)
- Studies in many countries show insufficient time for older people to cross
  - But poor quality studies



# Health Survey for England

- **Participants:** Random population sample 65+
- **Setting:** private households in England
- **3,145 adults**
  - 1,444 men, 1,701 women

Craig R, Mindell J (Eds). *Health Survey for England 2005*. London: Health and Social Care Information Centre, 2007.

Mindell JS, Biddulph J, Hirani V, Stamatakis E, Craig R, Nunn S, Shelton N. Cohort Profile: The Health Survey for England. *Int J Epidemiol*. 2012;**41**:1585.



Volume 5

**Methodology and documentation**

A survey carried out on behalf of The Information Centre  
 Edited by Rachel Craig and Jennifer Mindell

Joint Health Surveys Unit

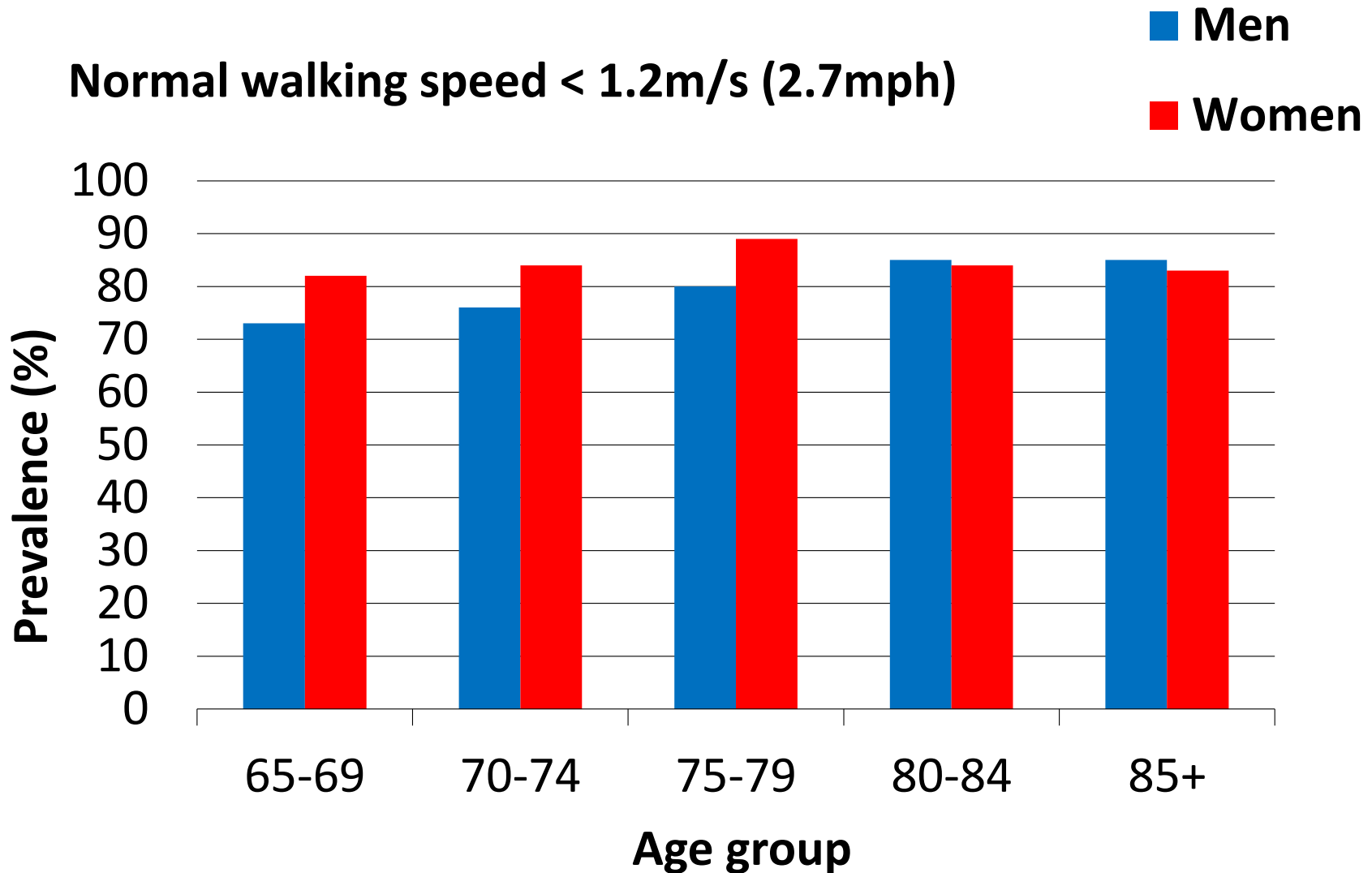
 **NatCen**  
 National Centre for Social Research

 **UCL**  
 Department of Epidemiology and Public Health at the  
 Royal Free and University College Medical School

FOR HEALTH AND SOCIAL CARE



# Walking speed by age & gender



# Walking Speed

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- aged 65+ who were able to walk 8' unaided
  - **76% Men**
  - **85% Women**
- had normal walking speed less than 1.2m/s

# June 2012

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- Asher L, Aresu M, Falaschetti E, Mindell JS. Most older pedestrians are unable to cross the road in time: a cross sectional study. *Age Aging*. 2012;**41**:690-4



# Valuing pedestrians

***“It shouldn’t take bravery to cross a road.”***

Chris Boardman, MBE, Commissioner, Active Travel England and Olympic cyclist

- Time
- Health & wellbeing
- Inclusion within society

# Hey Mr Boris



- Kilburn Bolder Voices
  - [www.youtube.com/watch?v=lpwboQxVJtg](http://www.youtube.com/watch?v=lpwboQxVJtg)

# Crossing types

DfT Circular:

The Traffic Signs Regulations and  
General Directions 2015

- Regulations published 2015: No new Pelican crossing may be installed
- New crossing either
  - ‘Countdown’ or
  - Puffin (Pedestrian User Friendly INtelligent)

# DfT Traffic Signs Manual 2019

- Where considered important, local authorities can use 1.0m/s instead of 1.2m/s for setting the clearance time.

- [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/851465/dft-traffic-signs-manual-chapter-6.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/851465/dft-traffic-signs-manual-chapter-6.pdf)

**Traffic  
Signs  
Manual**

CHAPTER  
**6**

**Traffic Control  
2019**





# Acknowledgements

- **Dr Jennifer S Mindell<sup>1</sup>, Dr Laura Asher<sup>1,2</sup>**
- **Anna Collins<sup>3</sup>, Mark Crabtree<sup>4</sup>**
- 1 Health & Social Surveys Research Group, Research Dept of Epidemiology & Public Health, **UCL**, London, UK
- 2 Centre for Global Mental Health, London School of Hygiene and Tropical Medicine, London, UK
- 3 **Living Streets**, London, UK
- 4 **TRL**, Crowthorne, Berkshire, UK





# Valuing pedestrians

*“It shouldn’t take bravery to cross a road.”*

Chris Boardman, MBE, Commissioner, Active Travel England and Olympic cyclist



# Road Danger Reduction



- *The best way to reduce fatal and non-fatal injuries is to reduce road danger*
  - *rather than reducing exposure (less walking and cycling) or*
  - *mitigating the consequences of collisions or falls.*



# Policy response: Reduce car use

- ↑ Active travel – ↑ physical activity
- ↓ Emissions of pollutants
- ↓ Serious injuries
- ↓ Transport inequalities
- *Spatial planning that does not assume or encourage car use*

# Climate change: co-benefits

**Transport**

Volume 164 Issue TR3

**Synergies between low carbon and healthy transport policies**

Mindell, Cohen, Watkins and Tyler

ice | proceedings

**Proceedings of the Institution of Civil Engineers**

Transport 164 August 2011 Issue TR3

Pages 127–139 doi: 10.1680/tran.2011.164.3.127

**Paper 1000040**

Received 02/08/2010

Accepted 07/03/2011

**Keywords:** public health/sustainability/transport planning

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**ice**  
Institution of Civil Engineers

**publishing**

<https://doi.org/10.1680/tran.2011.164.3.127>

## Synergies between low-carbon and healthy transport policies

**Jennifer S. Mindell** BSc, MB BS, PhD, FFPH, FRCP  
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**Judith M. Cohen** MA, MCIHT  
Transport Planner, Ramboll, London, UK

**Stephen Watkins** BSc, MB, ChB, MSc, FFPH, HonFFSRH, MILT  
Director of Public Health, Department of Public Health, Stockport Primary Care Trust, Stockport, UK

**Nicholas Tyler** MSc, PhD, CEng, FICE, ARCM, CBE  
Head of Department and Professor of Civil Engineering, Department of Civil, Environmental and Geomatic Engineering, University College London, UK

# Transport planning hierarchy



*Source: City of Portland Climate Action Plan, 2009.*



# Transport = Moving people, not cars *(and freight not lorries)*




Road space comparison of 69 bus passengers on a single bus, 69 pedestrians, 69 bicycle riders and 40 cars, Canberra ACT.

***Sir Liam Donaldson***  
***Chief Medical Officer for England***

- ***“The potential benefits of physical activity to health are huge. If a medication existed which had a similar effect, it would be regarded as a ‘wonder drug’ or ‘miracle cure’.”***


*(Annual Report of the Chief Medical Officer for England 2009, DH, March 2010)*

# The Active Travel (Wales) Act 2013

 <https://www.legislation.gov.uk/anaw/2013/7/contents/enacted>





[Home](#)
[Browse Legislation](#)
[New Legislation](#)
[Coronavirus Legislation](#)
[Changes To Legislation](#)

Title:  
 Year: 
 Number: 
 Type:

## Active Travel (Wales) Act 2013

Acts of the National Assembly for Wales ► 2013 anaw 7 ► [Table of contents](#)

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[More Resources](#) 

# The Active Travel (Wales) Act 2013

- Makes provision for:
  - approved **maps of existing active travel routes and related facilities** in a local authority's area,
  - approved **integrated network maps of the new and improved active travel routes and related facilities** needed ... in a local authority's area,
- Requires
  - local authorities to **have regard** to integrated network maps in **preparing transport policies** and to secure that **there are new and improved active travel routes and related facilities**,
  - the Welsh Ministers to **report on active travel** in Wales,
  - the Welsh Ministers and local authorities ... to take reasonable steps to **enhance the provision made for walkers and cyclists**
  - the Welsh Ministers and local authorities ... **to promote active travel journeys** and secure new and improved active travel routes and related facilities.

# Valuing people in transport policy

- Need to develop & implement methods to monetarise **all** impacts of transport & planning policy
  - Include in business cases & assessments
- Everyone's time and wellbeing is valuable
  - regardless of travel mode
  - Social justice / Inequalities
- Liveability

# Well-being of Future Generations (Wales) Act 2015





# **Wellbeing of Future Generations (Wales) Act 2015**

**The Act is about improving the social, economic, environmental and cultural well-being of Wales.**

**The many public bodies listed in the Act need to:**

- **think more about the long-term,**
- **work better with people and communities and each other,**
- **look to prevent problems and**
- **take a more joined-up approach.**

**The Act includes seven well-being goals.**

**Diolch!**

**Thank you!**