Responding to climate change:
Sustaining health and wellbeing
PHSS, University of Otago, Wellington
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Transport policy, climate change and health

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Background

- Increasingly sophisticated modelling research suggesting that many (but not all) transport policies that mitigate carbon emissions will also have profound impacts on the health of the population
  - Win-win policy

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Woodcock et al 2013

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Lindsay et al 2011

- The changes suggested in papers may appear modest (e.g. increasing biking 7 mins a day in some scenarios) but to achieve these overall outcomes a large number of specific policies will be required which essentially reverse the policy settings that we have had in place for transport for the last 50-100 years

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Policies to deliver reduced carbon emissions and health benefits

- Economic
- Infrastructure
- ‘Soft’
- Research/knowledge

- What do we know about the effectiveness of policies aimed decreasing carbon emissions AND improving health outcomes?

What policies are effective at reducing carbon emissions from surface passenger transport?

A review of interventions to encourage behavioural and technological change

March 2009

UKERC

New Roads and Human Health: A Systematic Review

We sought to synthesize evidence of the health effects of construction of new roads by systematically reviewing observational studies of such effects. We included and critically appraised 32 studies.

The review suggested that out-of-town bypasses decrease

Matt Egan, MPhil, PhD, Mark Petticrew, PhD, David Ogilvie, MPH, MFPHM, and Val Hamilton, DipLib, MLitt

TRANSPORTATION IS AN ... and use in America have long ... Road construction and automo-

OPEN ACCESS Freely available online

PLOS ONE

What Are the Health Benefits of Active Travel? A Systematic Review of Trials and Cohort Studies

Lucinda E. Saunders[1], Judith M. Green[1], Mark P. Petticrew[1]*, Rebecca Steinbach[1], Helen Roberts[2]

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Abstract

Background: Increasing active travel (primarily walking and cycling) has been widely advocated for reducing obesity levels ... gth of evidence underpinning this strategy is unclear. ...ficant health benefits.

...andomised and randomised controlled trials, and (ii) ... of interventions to promote active travel or (b) the ...

BMJ

RESEARCH

Interventions to promote cycling: systematic review

Lin Yang, PhD student Shannon Sahlqvist, career development fellow Alison McMinn, career development fellow Simon J Griffin, assistant director David Ogilvie, clinical investigator scientist

Medical Research Council

ABSTRACT

... cycling in children and adolescents and through

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Why do we need this information?

- Why do we need to look at research that looks at both carbon and health outcomes?
- Why can't we just rely on papers that look at either health or carbon outcomes?

- Decision making and evaluation purposes

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Systematic review

- Review existing observational evidence on whether policies that decrease transport sector CO_2 emissions have an effect on population health and inequalities
  - Study types: controlled trials, experimental, observational "before and after" studies with a control group, and time series studies
  - "Real world" policies or interventions (intentional or unintentional) for any transport mode
  - Calculated changes in GHG emissions
  - Any relevant and quantified health outcome or behaviour

Results- types of studies included

- 11 studies included
  - 2 published
- Countries
  - UK, Australia, Sweden, USA
- Interventions
  - 8 personalised travel planning, 1 legislated “cash-out” of employer parking benefits, 1 legislated inner city congestion charge, 1 multi faceted intervention to increase sustainable travel modes in 3 English towns
- Study types
  - 9 non randomised trials, 1 time series study, 1 retrospective cohort

Results

- Physical activity measures were most common health behaviours considered.
  - Very modest increases in walking and cycling in intervention groups
  - No confidence intervals reported in any study
- Stockholm congestion charge looked at air pollution related mortality- 27 lives saved per year in 1.44m population
- No study considered inequalities
- CO_2 reductions modest

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Results- study quality

Study name	Quality assessment
Haq	Weak
Johanssen- Stockholm congestion charge	Strong
Shoup	Weak
Sloman	Weak
Travelsmart Exeter	Weak
Travelsmart Lancashire	Weak
Travelsmart Lowestoft	Weak
Travelsmart Melville	Weak
Travelsmart South Perth	Weak
Travelsmart Watford	Weak
Travelsmart Worle	Weak

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What can we tell policy makers?

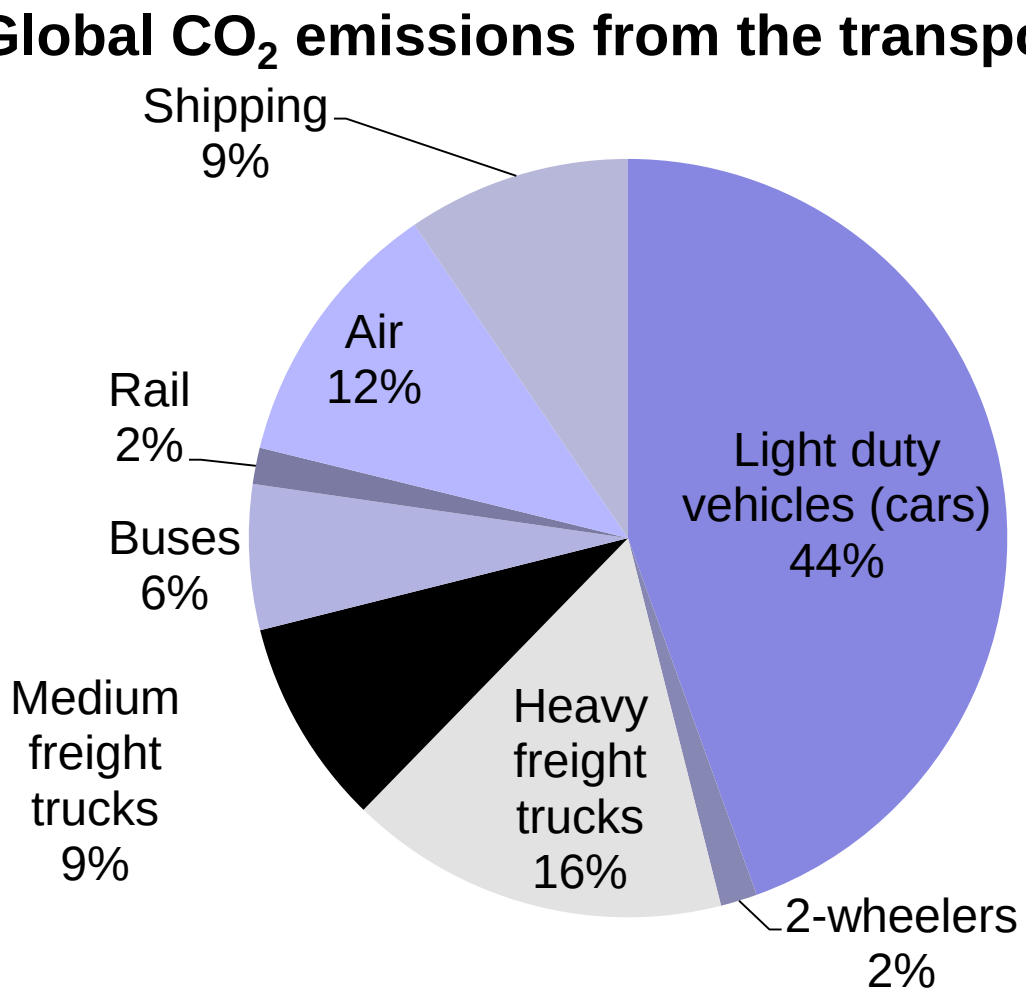
- Few studies available
- For the most part they are poor quality and results are not reliable
- Demand and fund better quality research

Research gaps

Types of interventions to reduce emissions in the transport sector:

- Economic policies
- Physical policies
- Soft policies
- Knowledge policies

Research gaps



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Research recommendations

- Get better information out of existing studies
- Use better design, methods and analytic approaches to quasi-experimental study designs
- Commit to better research approaches
- Consider novel research approaches
- Standardised approaches to measuring CO_2 emission changes