

# **Cycling & Walking:**

## **GGR424 - Transportation Geography & Planning**

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January 24, 2022

## Today:

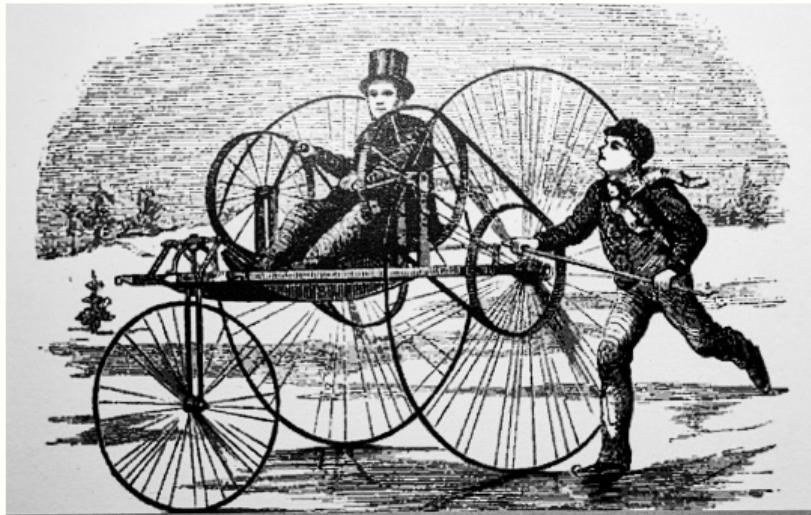
- ▶ Benefits of active travel
- ▶ Safety issues and other concerns
- ▶ Designing safer infrastructure
- ▶ Designing "complete streets"
- ▶ Networks & connectivity



## Active travel - non-motorized mobility

e.g. walking and cycling, but also rollerblading, skateboarding, ice-skating, kick scooters, cross-country skiing, etc.

Can be for travelling to a specific location, or recreational travel not directed to a particular destination



# Benefits of Active Travel

Can replace trips by other modes (driving, transit), meaning reduced congestion, pollution, GHG emissions, etc.

The screenshot shows a PubMed search results page. At the top, there is a search bar with the text 'PubMed.gov' and a 'Search' button. Below the search bar are links for 'Advanced' and 'User Guide'. A row of buttons for 'Save', 'Email', 'Send to', and 'Display options' follows. The main content area displays a single article record. The article title is 'Active travel: a climate change mitigation strategy with co-benefits for health' by Chris E Rissel. It includes a link to 'NSW Public Health Bull. Jan-Feb 2009;20(1-2):10-3. doi: 10.1071/nb08043'. Below the title are links for 'Affiliations + expand', 'PMID: 19261210 DOI: 10.1071/nb08043', and 'Free article'. The abstract section starts with the heading 'Abstract' and a paragraph about the benefits of active travel. To the right of the article details are sections for 'FULL TEXT LINKS' (with links to 'CROSS PUBLISHING FULL TEXT ARTICLE' and 'crossmark FULL TEXT'), 'ACTIONS' (with 'Cite' and 'Favorites' buttons), 'SHARE' (with icons for Twitter, Facebook, and LinkedIn), and 'PAGE NAVIGATION' (with links to 'Title & authors' and 'Abstract').

<https://pubmed.ncbi.nlm.nih.gov/19261210/>

# Benefits of Active Travel

Plenty of research highlights health benefits of active travel, e.g.

Journal List > Am J Public Health > v.100(10); Oct 2010 > PMC2937005

 American Public Health Association Promoting Public Health Research, Policy, Practice and Education 

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[Am J Public Health, 2010 October; 100\(10\): 1986–1992.](#) [PMCID: PMC2937005](#)  
[doi: 10.2105/AJPH.2009.189324](#) [PMID: 20724675](#)

**Walking and Cycling to Health: A Comparative Analysis of City, State, and International Data**

[John Pucher, PhD, <sup>✉</sup> Ralph Buehler, PhD, David R. Bassett, PhD, and Andrew L. Dannenberg, MD, MPH](#)  
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**Abstract** [Go to: ☐](#)

**Objectives.** We sought to determine the magnitude, direction, and statistical significance of the relationship between active travel and rates of physical activity, obesity, and diabetes.

**Methods.** We examined aggregate cross-sectional health and travel data for 14 countries, all 50 US states, and 47 of the 50 largest US cities through graphical, correlation, and bivariate regression analysis on the country, state, and city levels.

**Results.** At all 3 geographic levels, we found statistically significant negative relationships between active travel and self-reported obesity. At the state and city levels, we found statistically significant positive relationships between active travel and physical activity and statistically significant negative relationships between active travel and diabetes.

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**Similar articles in PubMed**

Walking, cycling, and obesity rates in Europe, North America, and Australia. [J Phys Act Health. 2008]

Adult active transport in the Netherlands: an analysis of its contribution to physical activity requirements. [PLoS One. 2015]

Active travel to work and cardiovascular risk factors in the United Kingdom. [Am J Prev Med. 2013]

Improving health through policies that promote active travel: a review of evidence to support integrated health. [Environ Int. 2011]

Environmental correlates of walking and cycling: findings from the transportation, urban design, and planning. [Ann Behav Med. 2003]

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**Cited by other articles in PMC**

Climate Solutions Double as Health Interventions [International Journal of Envir...]

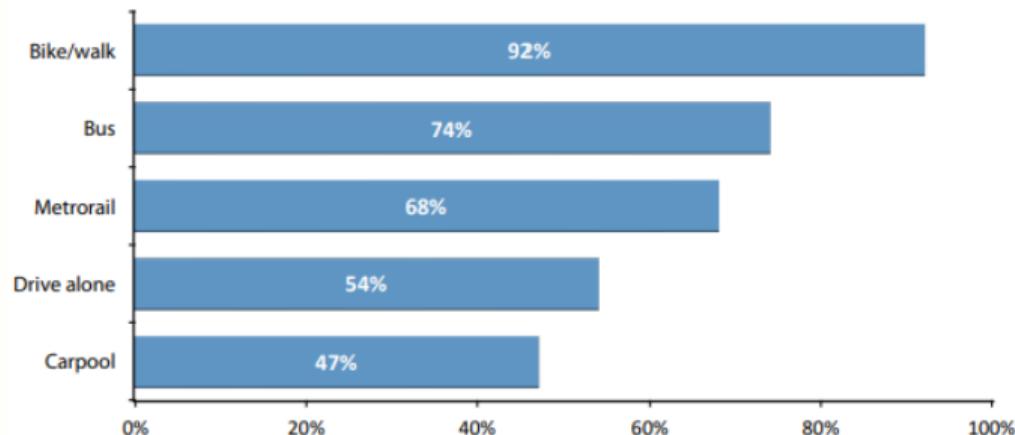
## Benefits of Active Travel

Increased "enjoyment" or "satisfaction" of travel

**Satisfaction with Commute by Primary Commute Mode – Lived in Arlington**

Percent Rating Commute a 4 or 5

(Bike/walk n = 73, Bus n = 63, Metrorail n = 253 Drive alone n = 331, Carpool n = 21)



# Benefits of Active Travel

"studies indicate that creating or improving active travel facilities generally has positive or non-significant economic impacts on retail"

TRANSPORT REVIEWS  
2021, VOL. 41, NO. 4, 401–431  
<https://doi.org/10.1080/01441647.2021.1912849>

 Routledge  
Taylor & Francis Group

OPEN ACCESS 

**Economic impacts on local businesses of investments in bicycle and pedestrian infrastructure: a review of the evidence**

Jamey M. B. Volker  and Susan Handy 

Institute of Transportation Studies, University of California, Davis, CA, USA

**ABSTRACT**  
Local officials in North America frequently face opposition to new or expanded bicycle or pedestrian facilities. The most vocal opponents are usually motorists and local business owners who fear that the removal of or reductions in vehicular parking or travel lanes will reduce patronage from motorists and that any increased patronage from pedestrians or cyclists will not offset the lost revenues. A lack of direct evidence on the economic impacts of facilities on local businesses has made it difficult to support or debunk such fears. A lack of quantitative evidence in particular has prevented the incorporation of such impacts into cost-benefit analyses. The issue has received enough attention from researchers in recent years that a review of the evidence is now warranted. We reviewed the relevant literature and identified 23 studies, focusing on the US and Canada, that either (1) quantified and compared consumer spending between active travellers and automobile users ( $n = 8$ ), or (2) quantified an economic impact to local businesses following the installation of bicycle or pedestrian facilities ( $n = 15$ ). Taken together, the studies indicate that creating or improving active travel facilities generally has positive or non-significant economic impacts on retail and food service businesses abutting or within a short distance of the facilities, though bicycle facilities might have negative economic effects on auto-centric businesses. The results

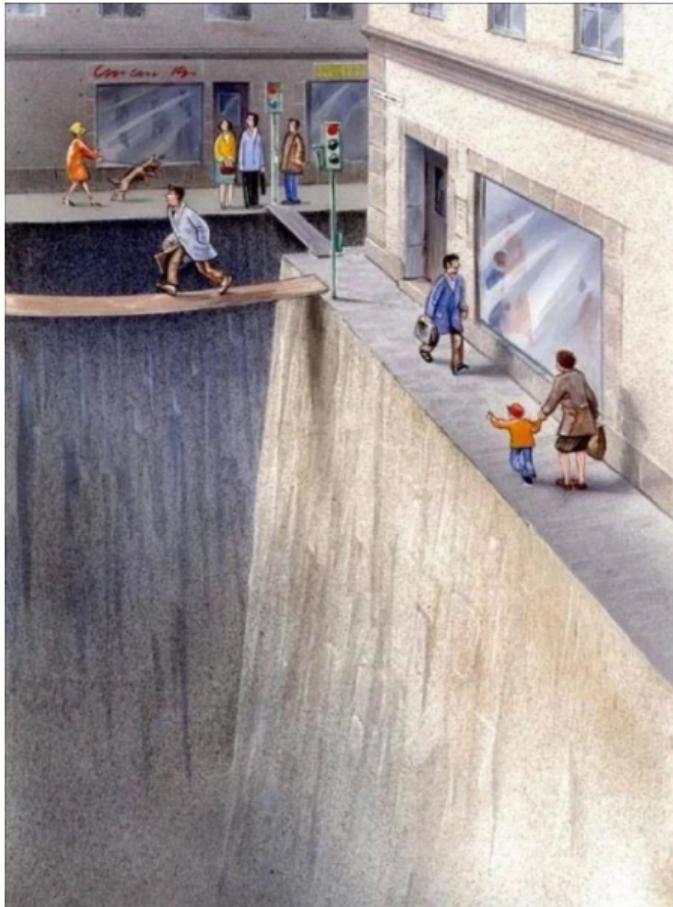
**ARTICLE HISTORY**  
Received 3 November 2020  
Accepted 27 March 2021

**KEYWORDS**  
Bicycle facilities; pedestrian facilities; active travel; local business; economic impacts

## What deters active travel?

Image by Karl Jilg, commissioned by the Swedish Road Administration in 2014

[https://archive.attn.com/stories/17066/  
illustration-nails-pedestrian-problem-cities](https://archive.attn.com/stories/17066/illustration-nails-pedestrian-problem-cities)



# Induced demand, not just for cars!

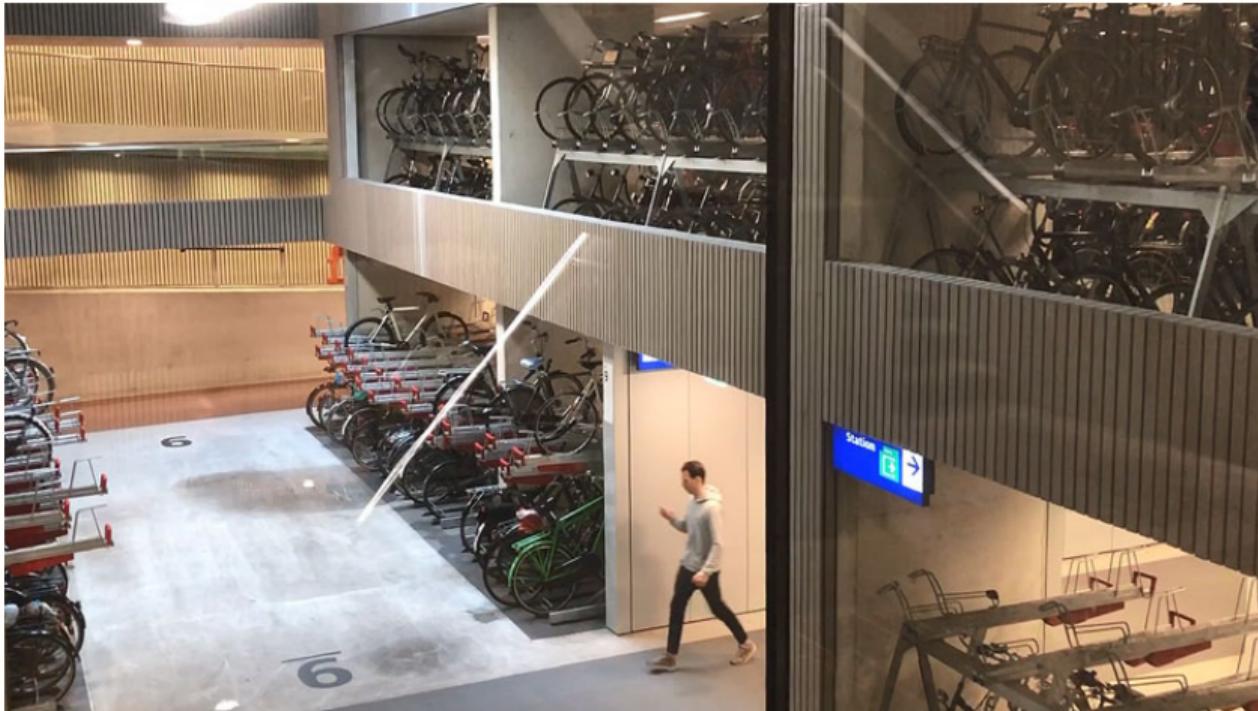


# Reducing barriers to cycling: Building safe and comfortable infrastructure



"The City of Vancouver has a vision to make cycling safe, convenient, comfortable and fun for all ages and abilities (AAA)"

## Reducing barriers to cycling: Available and safe bicycle parkring



<https://bicycledutch.wordpress.com/2019/08/20/finally-fully-open-utrechts-huge-bicycle-parking-garage/>

# Reducing barriers to cycling: Bike escalators in Norway



[https://www.boredpanda.com/bicycle-escalator-cyclocable-trondheim-norway/?utm\\_source=duckduckgo&utm\\_medium=referral&utm\\_campaign=organic](https://www.boredpanda.com/bicycle-escalator-cyclocable-trondheim-norway/?utm_source=duckduckgo&utm_medium=referral&utm_campaign=organic)

## Reducing barriers to cycling: Traffic calming



**Vision Zero:**

**Complete Streets:**

## **Street Design Activity**

# Network Connectivity

Super blocks (limit car access)

e.g. blocking auto access, but not bikes

15-minute cities

Land-use

"Complete" communities

## **Next Week**

Public Transit

- ▶ etc.