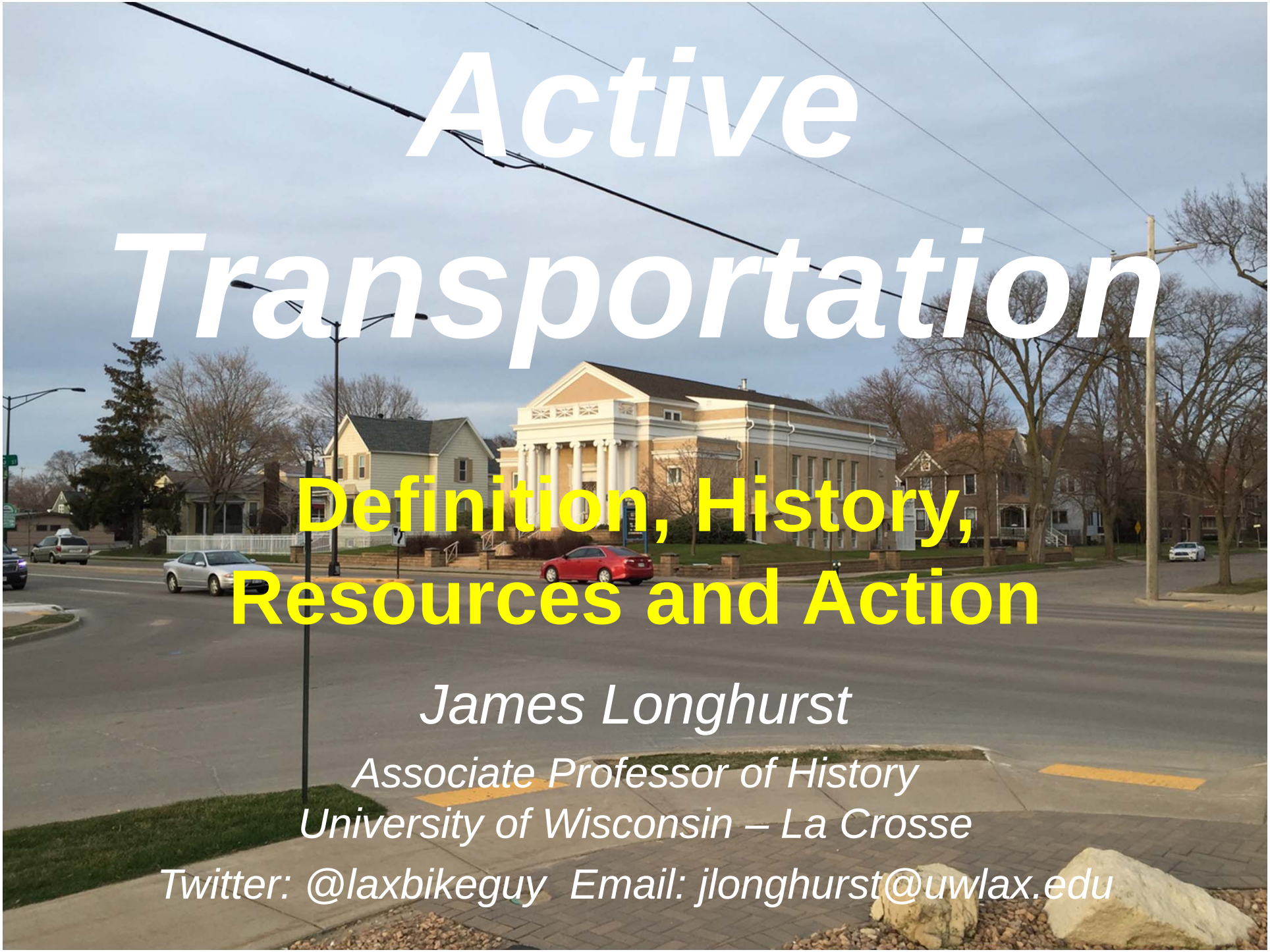

Active Transportation

Definition, History, Resources and Action

James Longhurst

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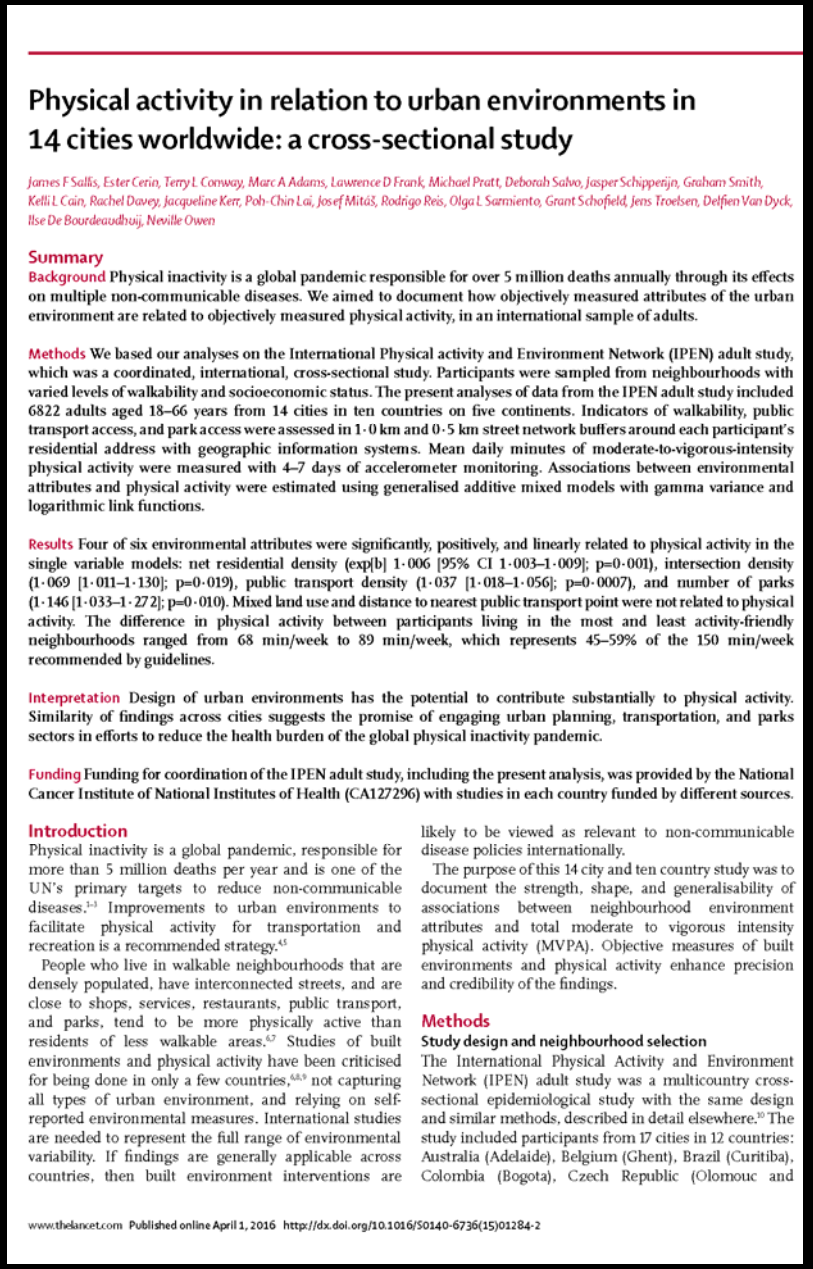
Active
Transportation
Definition

"Physical inactivity is a global pandemic responsible for over 5 million deaths annually through its effects on multiple non-communicable diseases."

Sallis,et. al., "Physical activity in relation to urban environments in 14 cities worldwide: a cross-sectional study," *The Lancet* (2016)



Physical activity in relation to urban environments in 14 cities worldwide: a cross-sectional study

James F Sallis, Ester Cerin, Terry L Conway, Marc A Adams, Lawrence D Frank, Michael Pratt, Deborah Salvo, Jasper Schipperijn, Graham Smith, Kelli L Cain, Rachel Davey, Jacqueline Kerr, Poh-Chin Lai, Josef Mitáš, Rodrigo Reis, Olga L Sarmiento, Grant Schofield, Jens Troelsen, Delfien Van Dyck, Ilse De Bourdeaudhuij, Neville Owen

Summary

Background Physical inactivity is a global pandemic responsible for over 5 million deaths annually through its effects on multiple non-communicable diseases. We aimed to document how objectively measured attributes of the urban environment are related to objectively measured physical activity, in an international sample of adults.

Methods We based our analyses on the International Physical activity and Environment Network (IPEN) adult study, which was a coordinated, international, cross-sectional study. Participants were sampled from neighbourhoods with varied levels of walkability and socioeconomic status. The present analyses of data from the IPEN adult study included 6822 adults aged 18–66 years from 14 cities in ten countries on five continents. Indicators of walkability, public transport access, and park access were assessed in 1·0 km and 0·5 km street network buffers around each participant's residential address with geographic information systems. Mean daily minutes of moderate-to-vigorous-intensity physical activity were measured with 4–7 days of accelerometer monitoring. Associations between environmental attributes and physical activity were estimated using generalised additive mixed models with gamma variance and logarithmic link functions.

Results Four of six environmental attributes were significantly, positively, and linearly related to physical activity in the single variable models: net residential density (exp[b] 1·006 [95% CI 1·003–1·009]; p=0·001), intersection density (1·069 [1·011–1·130]; p=0·019), public transport density (1·037 [1·018–1·056]; p=0·0007), and number of parks (1·146 [1·033–1·272]; p=0·010). Mixed land use and distance to nearest public transport point were not related to physical activity. The difference in physical activity between participants living in the most and least activity-friendly neighbourhoods ranged from 68 min/week to 89 min/week, which represents 45–59% of the 150 min/week recommended by guidelines.

Interpretation Design of urban environments has the potential to contribute substantially to physical activity. Similarity of findings across cities suggests the promise of engaging urban planning, transportation, and parks sectors in efforts to reduce the health burden of the global physical inactivity pandemic.

Funding Funding for coordination of the IPEN adult study, including the present analysis, was provided by the National Cancer Institute of National Institutes of Health (CA127296) with studies in each country funded by different sources.

Introduction

Physical inactivity is a global pandemic, responsible for more than 5 million deaths per year and is one of the UN's primary targets to reduce non-communicable diseases.[1–3] Improvements to urban environments to facilitate physical activity for transportation and recreation is a recommended strategy.[4,5]

People who live in walkable neighbourhoods that are densely populated, have interconnected streets, and are close to shops, services, restaurants, public transport, and parks, tend to be more physically active than residents of less walkable areas.[6,7] Studies of built environments and physical activity have been criticised for being done in only a few countries,[6,8,9] not capturing all types of urban environment, and relying on self-reported environmental measures. International studies are needed to represent the full range of environmental variability. If findings are generally applicable across countries, then built environment interventions are likely to be viewed as relevant to non-communicable disease policies internationally.

The purpose of this 14 city and ten country study was to document the strength, shape, and generalisability of associations between neighbourhood environment attributes and total moderate to vigorous intensity physical activity (MVPA). Objective measures of built environments and physical activity enhance precision and credibility of the findings.

Methods

Study design and neighbourhood selection

The International Physical Activity and Environment Network (IPEN) adult study was a multicountry cross-sectional epidemiological study with the same design and similar methods, described in detail elsewhere.[10] The study included participants from 17 cities in 12 countries: Australia (Adelaide), Belgium (Ghent), Brazil (Curitiba), Colombia (Bogota), Czech Republic (Olomouc and

www.thelancet.com Published online April 1, 2016 http://dx.doi.org/10.1016/S0140-6736(15)01284-2

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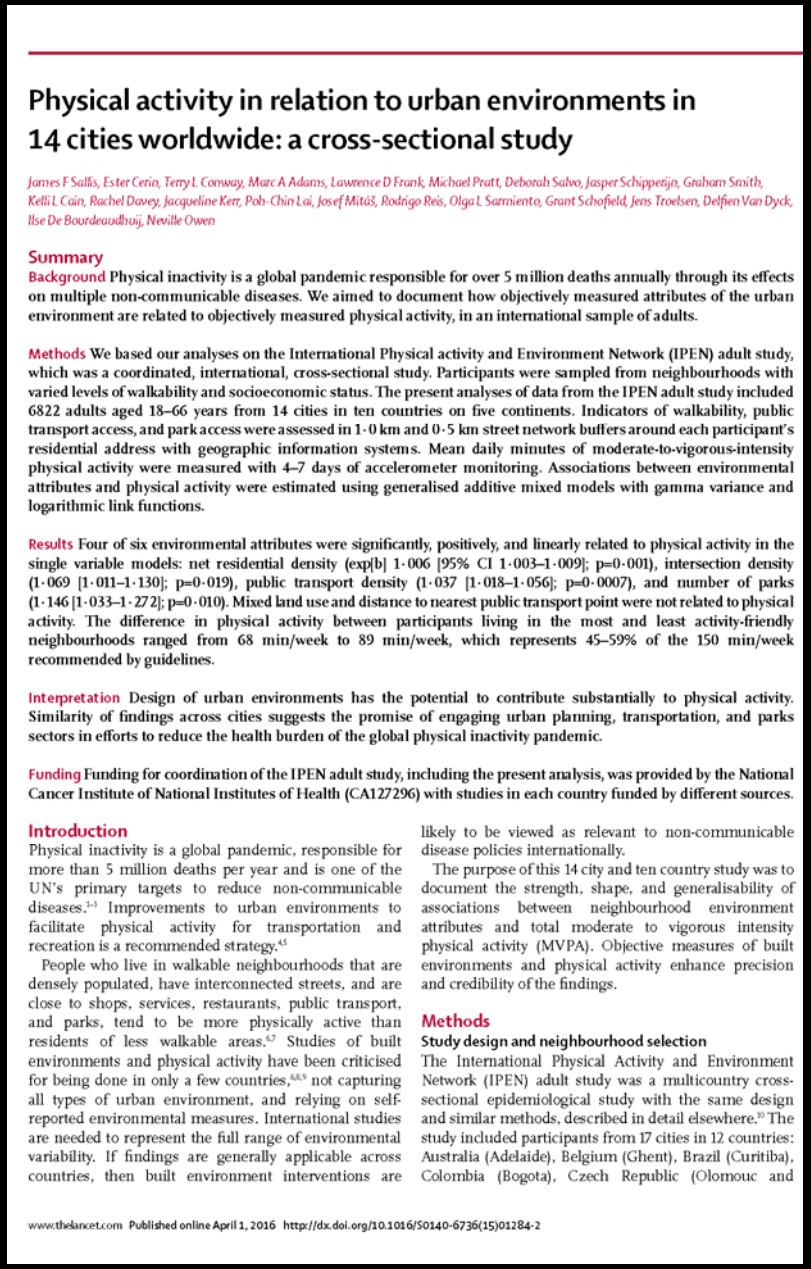

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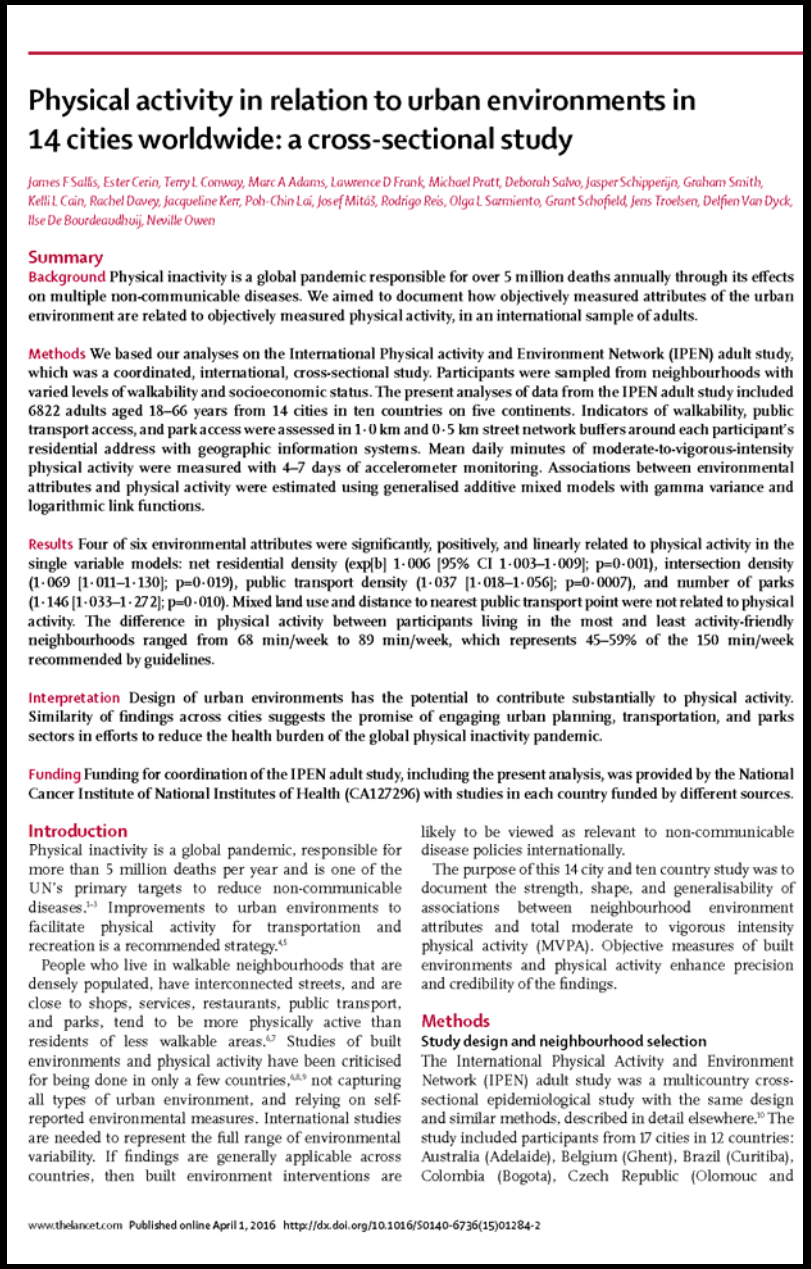

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GLOBAL REPORT ON **DIABETES**

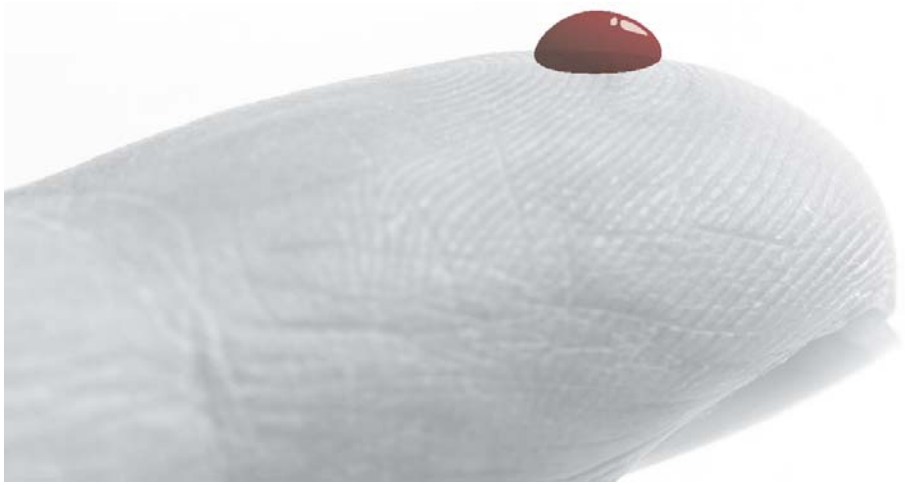
World Health Organization

"Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980. The global prevalence … has nearly doubled since 1980 … to 8.5% …This reflects an increase in associated risk factors such as being overweight or obese.
Diabetes caused 1.5 million deaths in 2012. Higher-than-optimal blood glucose caused an additional 2.2 million deaths, by increasing the risks of cardiovascular and other diseases. Forty-three percent of these 3.7 million deaths occur before the age of 70 years."

-- WHO Global Report on Diabetes (2016), 6.

GLOBAL REPORT
ON DIABETES

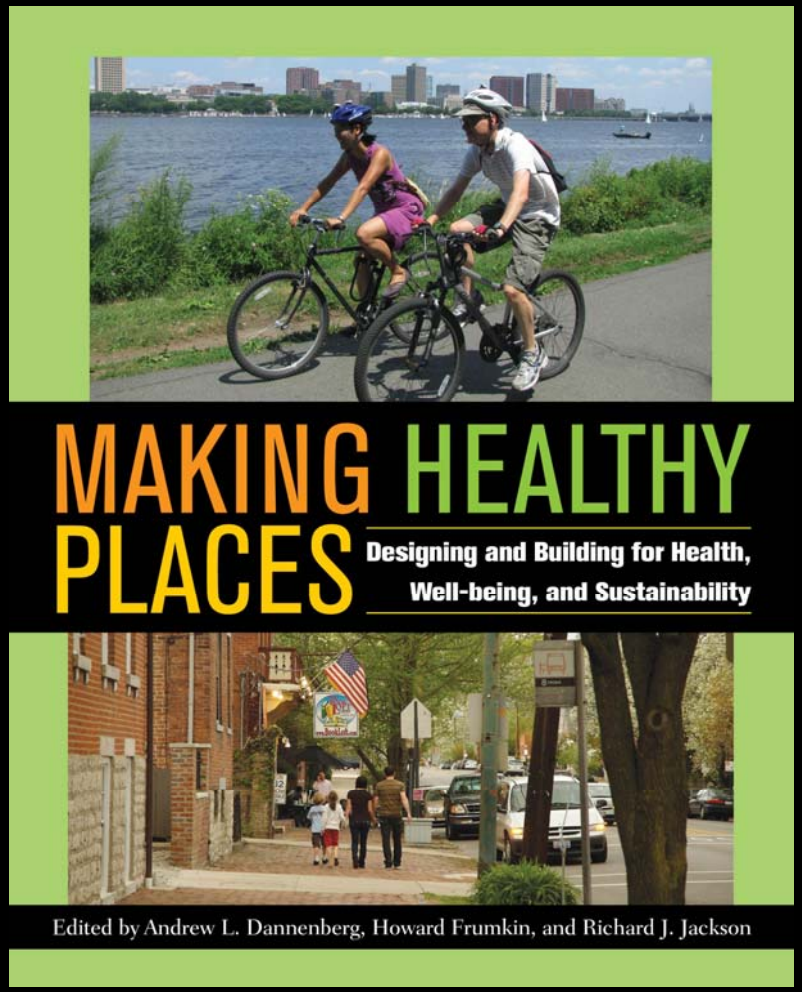
World Health Organization



"The physical or built environment plays an important role …. Urban planning and active transport policies can ensure that walking, cycling and other forms of non-motorized transport are accessible and safe for all."

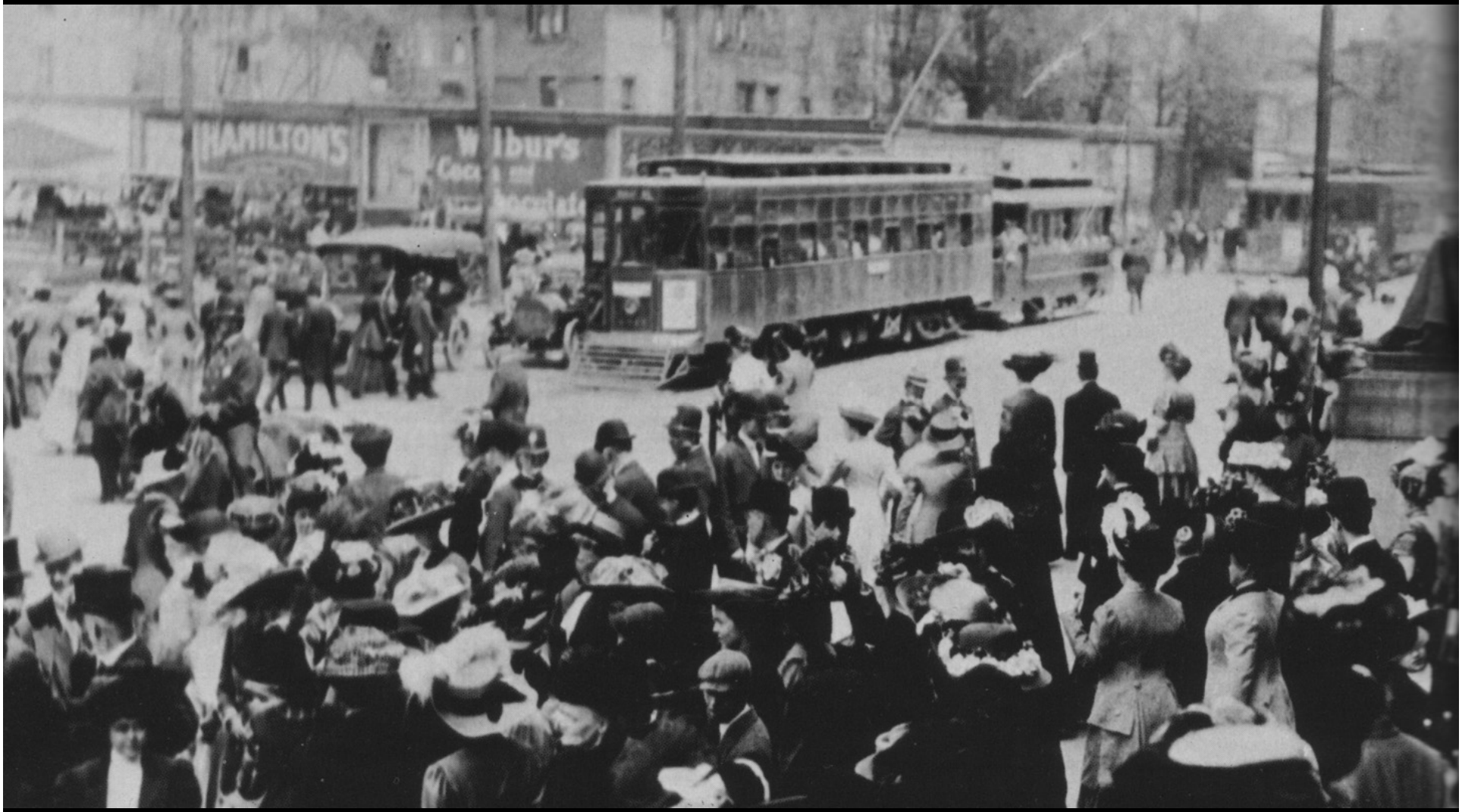
-- WHO Global Report on Diabetes (2016), 37-8.

"The modern America of obesity, inactivity, depression, and loss of community has not 'happened' to us; rather we legislated, subsidized, and planned it."



-- *Making Healthy Places*, Dannenberg et al, (2008), xvii.


Active
Transportation
History


HAMILTON'S
Wilbur's


SILVERTOWN


905

In 1939, two 14 lane expressways cross in the intersection of General Motor's Futurama exhibit at the World's Fair, a 35,700 sq. ft., detailed model of planned “America of 1960.” -- LIFE

Los Angeles freeways, 1958

Photo illustration of urban bike lane battles, *New York* Magazine, March 20, 2011

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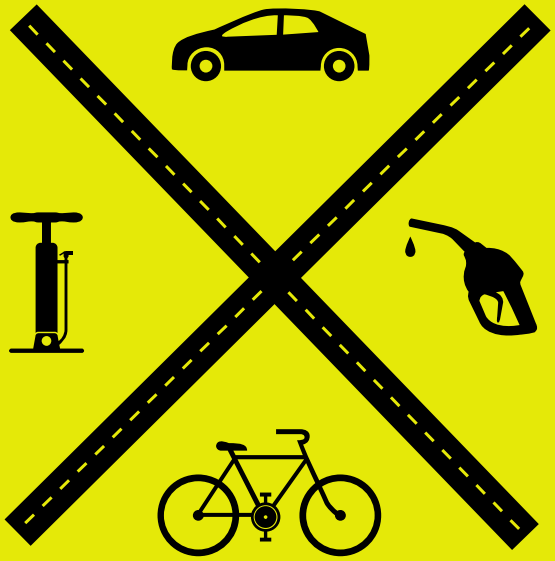


BIKE BATTLES

A HISTORY OF SHARING THE AMERICAN ROAD

JAMES LONGHURST

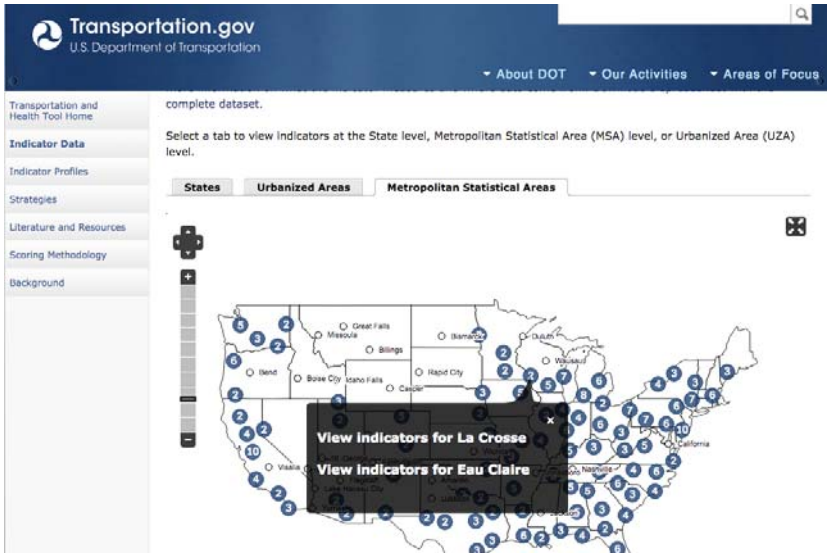

Active
Transportation
Resources

Alliance for Biking & Walking

Building the People Powered Movement

WISCONSIN Safe Routes TO SCHOOL

SHARE & BE AWARE



BICYCLE AND PEDESTRIAN MASTER PLAN

FALL 2012

Complete Streets policies

Ensure that the entire right-of-way is planned, designed, constructed, operated, and maintained to provide safe access for all users

Who wants Complete Streets?

47%

of older Americans say it is unsafe to cross a major street near their home.

54%

of older Americans living in inhospitable neighborhoods say they would walk and bike more often if the built environment improved.

56%

express strong support for adoption of Complete Streets policies.

Planning Complete Streets for the Aging of America, AARP

We know how to build right

Smart Growth America
Making Neighborhoods Great Together

National Complete Streets Coalition

Yet too many roads still turn out like this:

or this:

Smart Growth America
Making Neighborhoods Great Together

National Complete
Streets Coalition

or this:

Smart Growth America
Making Neighborhoods Great Together

National Complete Streets Coalition

Streets are inadequate

- Uninviting for bus riders

Smart Growth America
Making Neighborhoods Great Together

National Complete Streets Coalition


Active
Transportation
Action


Auto-centric design as barrier to active transportation:
Intersection of King and West, La Crosse WI

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Thank you.