

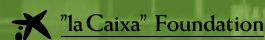
THE FUTURE OF URBAN SYSTEMS: SAVING OUR CITIES TO SAVE OUR HEALTH IN THE POST COVID ERA

Mark J Nieuwenhuijsen

ISGlobal Barcelona
Institute for
Global Health



A partnership of:




CLÍNIC
HOSPITALS
Hospital Universitari

 UNIVERSITAT DE
BARCELONA

 **MAR**

 **upf.** Universitat
Pompeu Fabra
Barcelona

 Generalitat
de Catalunya

 GOVERN
DE CATALUNYA

 Ajuntament de
Barcelona

FUNDACIÓ
RAMÓN ARECES

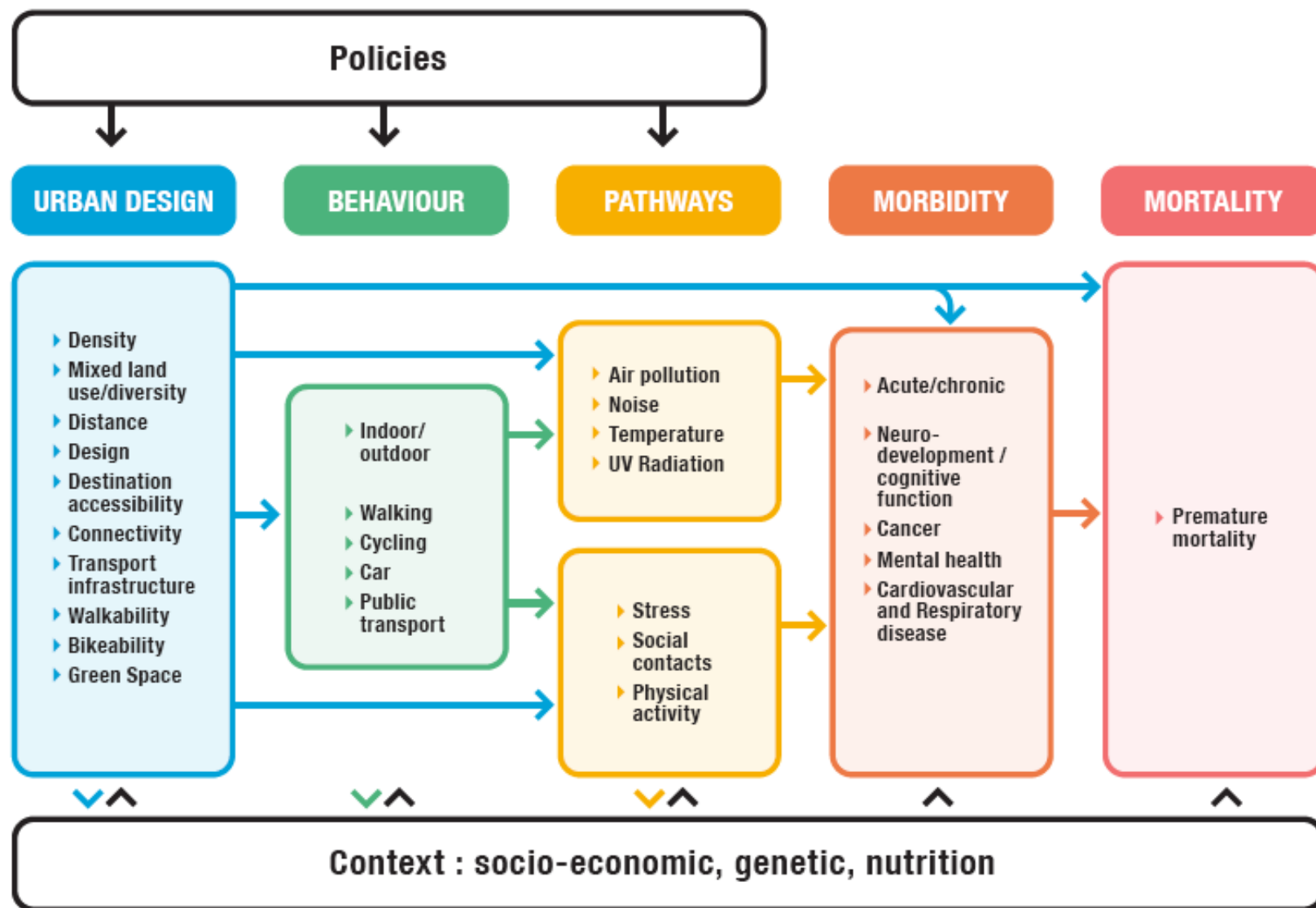




**2904 premature deaths (20%) annually in
Barcelona due to suboptimal urban and transport planning**

ISGlobal **Barcelona**
Institute for
Global Health

Mueller et al EHP 2017; 125: 89-96



The New Coronavirus: Some Answers and Many Questions



The Rue de Rivoli, a central route in Paris, will be devoted mostly to bike and pedestrian traffic after lockdown is lifted. // Cyril Marcilhacy/Bloomberg

Paris Has a Plan to Keep Cars Out After Lockdown

[FEARGUS O'SULLIVAN](#) APRIL 29, 2020

London / Large areas of city to be made car-free as lockdown eased



Live

UK coronavirus: Welsh schools will not open until September; 'stay home' advice remains

London

TfL faces £3bn funding gap despite £1.6bn bailout

Education

Prolonged school closures risk damaging children's education, No 10 warns

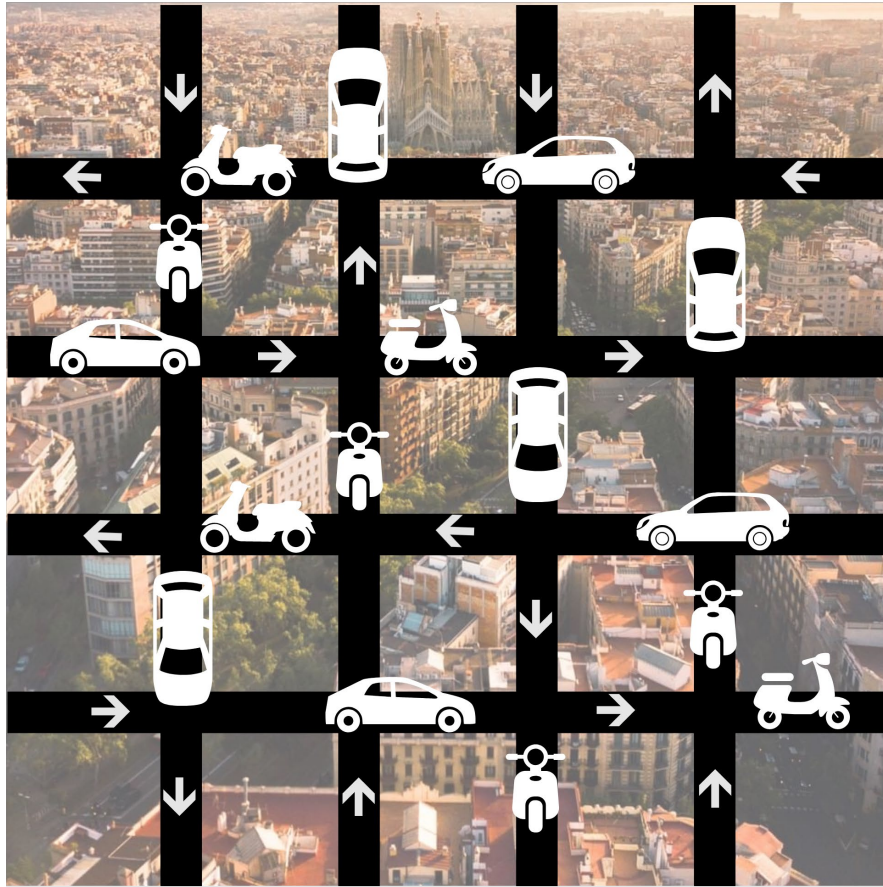
Milan announces ambitious scheme to reduce car use after lockdown



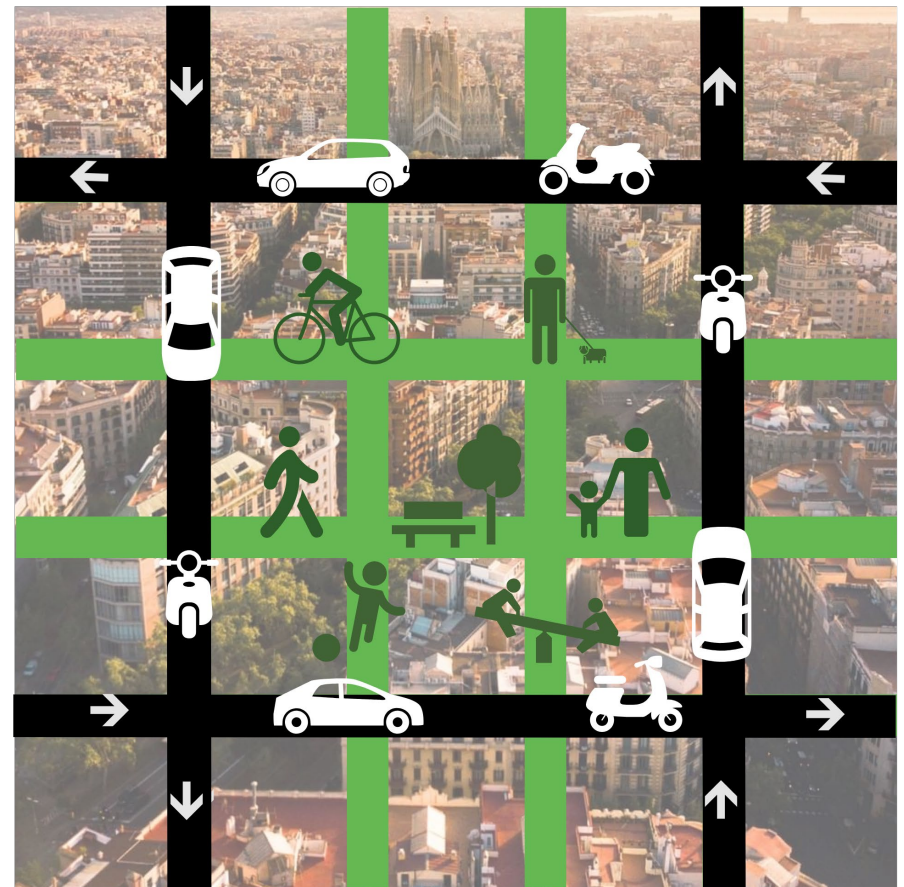
SOLUTIONS

- **Land use changes**
- **Reduce car dependency**
- **Move towards public and active transportation**
- **Greening cities**

BARCELONA SUPER BLOCK MODEL



Baseline situation



Superblocks model

Can prevent 667 premature deaths annually



Barcelona Superblock San Antoni

Before

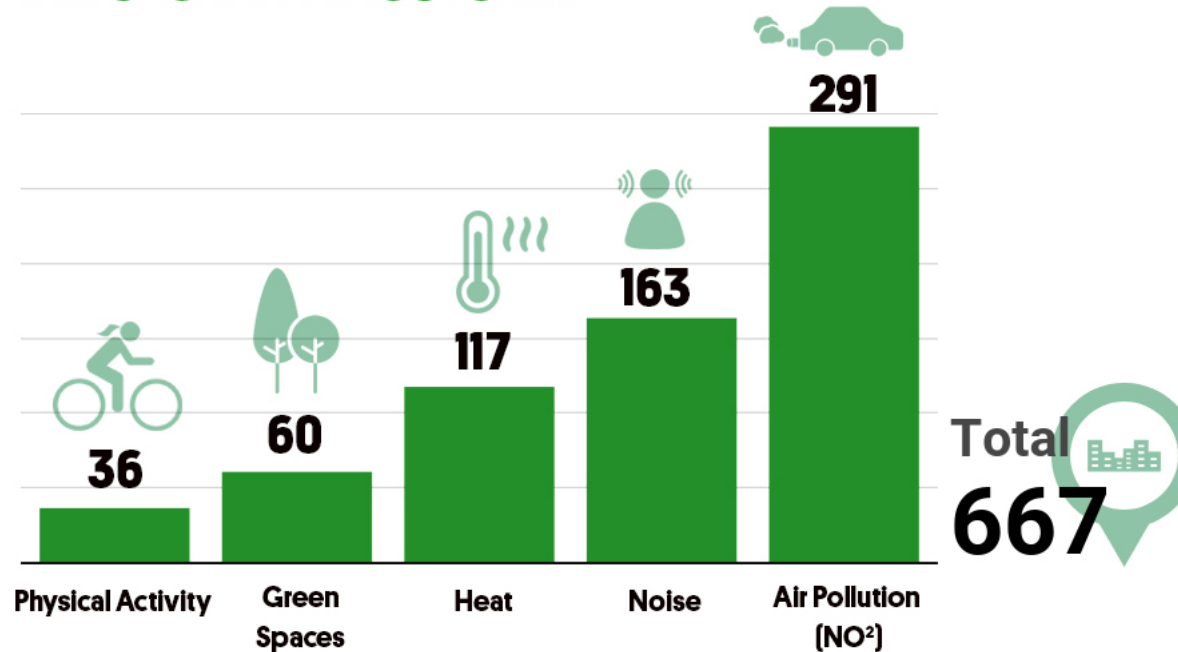


After

BARCELONA SUPER BLOCKS

- **19.2% car reduction**
- **11.5 ug/m³ (24.3%) NO₂ reduction**
- **2.9 dB noise reduction**
- **3 fold increase green space (6.5% to 19.6%)**
- **20% Surface temperature reduction**

Annual Premature Deaths that the "Superblocks" Model Could Avoid in Barcelona



Source: Mueller et al. Changing the urban design of cities for health: the Superblock model. *Environment International*. 2019

ISGlobal

ISGlobal **Barcelona**
Institute for
Global Health

Mueller et al 2019, Env Int

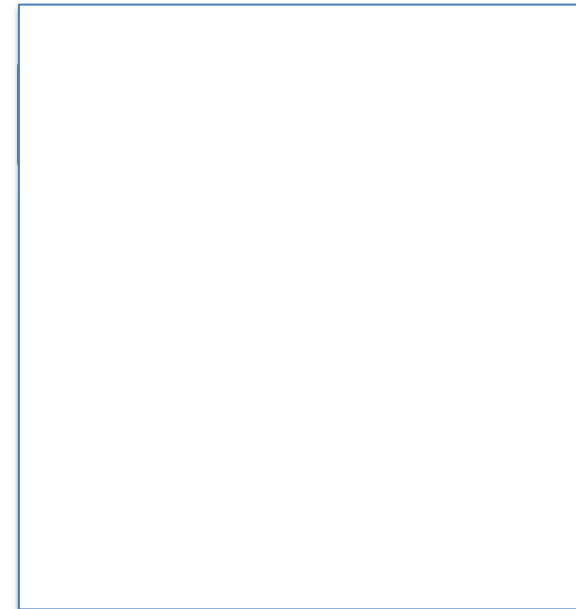
CITYLAB

Paris Mayor: It's Time for a '15-Minute City'

In her re-election campaign, Mayor Anne Hidalgo says that every Paris resident should be able to meet their essential needs within a short walk or bike ride.

By [Feargus O'Sullivan](#)

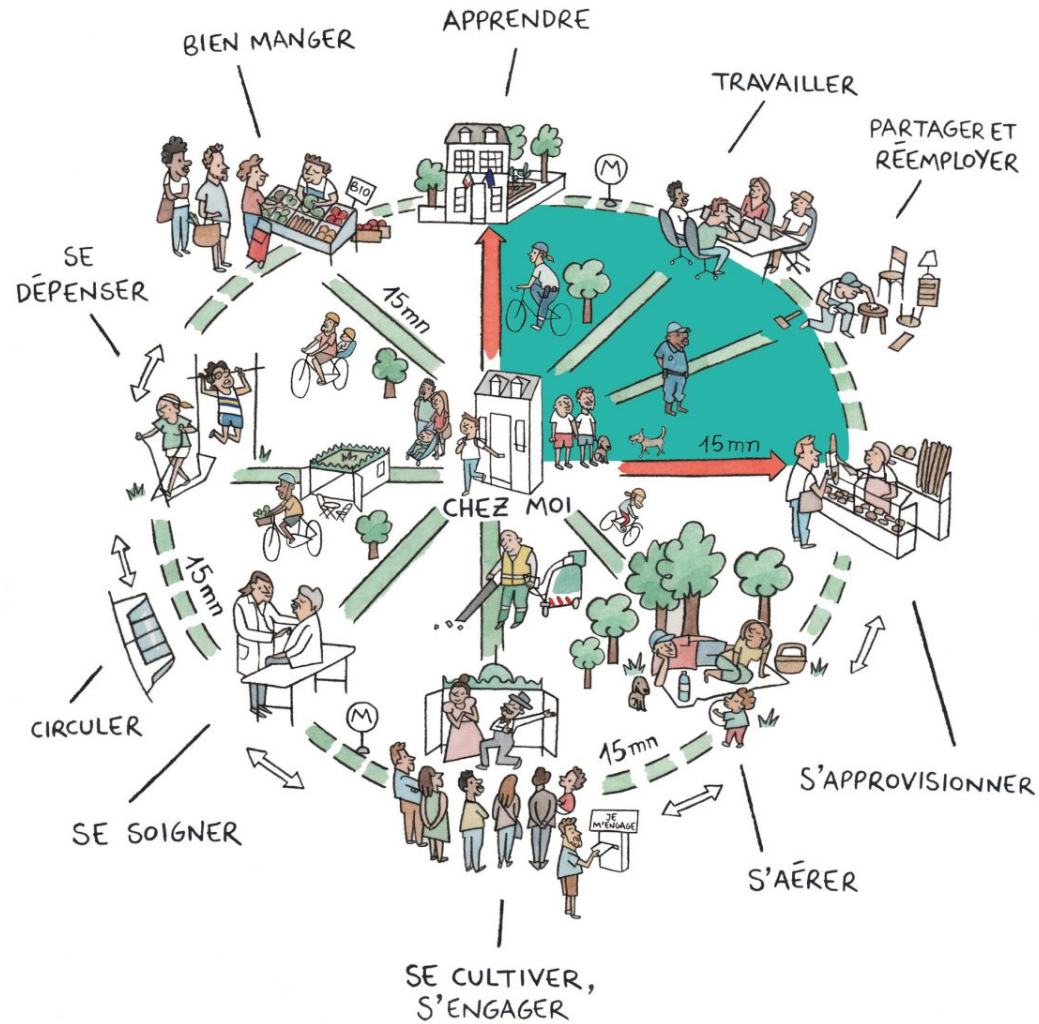
18 de febrero de 2020 14:40 CET



CITYLAB

[Take the survey](#) ^

LE PARIS DU 1/4 HEURE



15 minute City Paris

Hamburg Plans to Become Car-Free By 2034

But should there really be zero cars?

By [Rachel Nuwer](#)
SMITHSONIANMAG.COM
FEBRUARY 17, 2014

[f](#) 26 [t](#) 28 [g+](#) 0 [p](#) 1 [e](#) 2 [v](#) 0 [p](#) 718

Hamburg, Germany, recently announced plans to convert 40 percent of the city into car-free pedestrian zones within the next two decades. [According to Inhabitat](#), existing green spaces

Discover their stories

MOST POPULAR

[VIEWED](#) [SHARED](#)

1. Would You Eat a Salad Grown in a Bomb Shelter?
2. How Merv Griffin Came Up With That Weird Question/Answer Format for Jeopardy!
3. How To Run 30 Health Tests On a Single Drop of Blood
4. For 40 Years, This Russian Family Was Cut Off From All Human Contact, Unaware of World War II



Contents lists available at ScienceDirect

Environment International

journal homepage: www.elsevier.com/locate/envint



Review article

Car free cities: Pathway to healthy urban living

Mark J. Nieuwenhuijsen^{a,b,c,*}, Haneen Khreis^d

^a ISGlobal, Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain

^b Universitat Pompeu Fabra (UPF), Spain

^c CIBER Epidemiología y Salud Pública (CIBERESP), Spain

^d Institute for Transport Studies (ITS), University of Leeds, Leeds, United Kingdom

ARTICLE INFO

Article history:

Received 21 March 2016

Received in revised form 25 May 2016

Accepted 30 May 2016

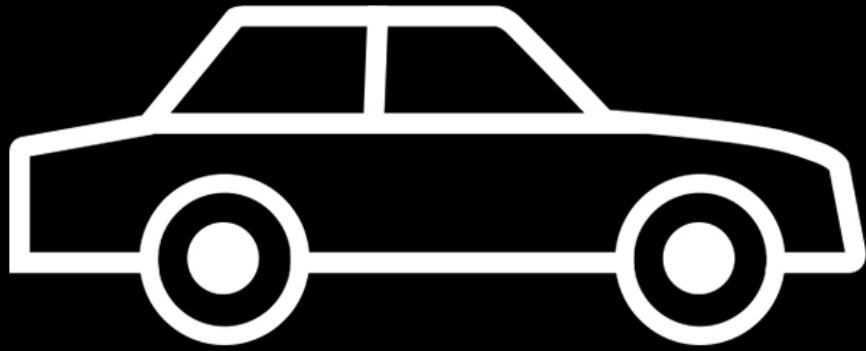
Available online xxx

ABSTRACT

Background: Many cities across the world are beginning to shift their mobility solution away from the private cars and towards more environmentally friendly and citizen-focused means. Hamburg, Oslo, Helsinki, and Madrid have recently announced their plans to become (partly) private car free cities. Other cities like Paris, Milan, Chengdu, Masdar, Dublin, Brussels, Copenhagen, Bogota, and Hyderabad have measures that aim at reducing mo-



Vauban, Freiburg



THIS ONE
RUNS ON MONEY
AND MAKES
YOU FAT



THIS ONE
RUNS ON FAT
AND SAVES
YOU MONEY

50% of car trips < 5 km

7 WAYS THAT BICYCLES CAN MAKE CITIES Healthier



3 LESS AIR POLLUTION

A 40% SHIFT FROM CAR TRIPS TO CYCLING
IN BARCELONA'S METROPOLITAN AREA

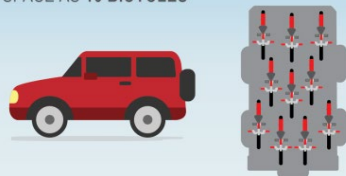


COULD AVOID AT LEAST 28 PREMATURE
DEATHS A YEAR DUE TO REDUCED AIR
POLLUTION

3. SOURCE: ROJAS-RUEDA ET AL. 2012. ENVIRON. INT. 49:100-109

6 MORE PUBLIC SPACE

ONE CAR OCCUPIES THE SAME PARKING
SPACE AS 10 BICYCLES



BICYCLES ARE A DOOR-TO- DOOR TRANSPORT THAT CAN
HELP AVOID TRAFFIC JAMS AND CONGESTION IN CITIES

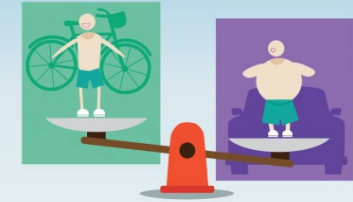
1 LESS RISK OF PREMATURE MORTALITY



REGULAR CYCLING
IMPROVES **CARDIOVASCULAR
HEALTH** AND DECREASES
THE RISK FOR PREMATURE
MORTALITY BY 10%

1. SOURCE: KELLY ET AL. 2014. INT J BEHAV NUTR PHYS ACT. 11:1

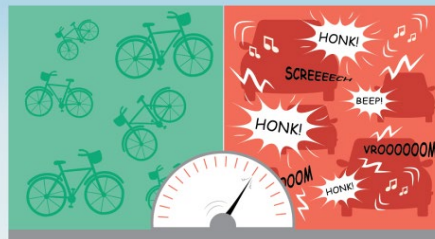
2 CYCLING COMBINES TRANSPORT WITH THE GYM



ON AVERAGE CYCLISTS WEIGH 2 KG LESS
THAN CAR DRIVERS

2. SOURCE: PASTA PROJECT

4 LESS NOISE POLLUTION

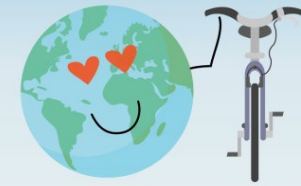


ON **CAR FREE DAYS** NOISE LEVELS CAN
BE REDUCED BY UP TO 10 DECIBELS

4. SOURCE: NIEUWENHUIJSEN & KREIS 2016

5 ZERO EMISSIONS TRANSPORT MODE

CYCLING DOES NOT DEPEND ON FOSSIL FUELS AND
CAN HELP STOP GLOBAL WARMING



A 40% SHIFT FROM CAR TRIPS TO CYCLING CAN **REDUCE 200,000 TONS
OF CO2 EMISSIONS** ANNUALLY IN BARCELONA'S METROPOLITAN AREA

5. SOURCE: ROJAS-RUEDA ET AL. 2012. ENVIRON. INT. 49:100-109

7 MORE HAPPINESS!!



ACTIVE TRANSPORT IS
ASSOCIATED WITH
**BETTER MENTAL AND
PHYSICAL WELL-BEING,
LESS STRESS AND MORE
HAPPINESS!**

7. SOURCE: KAMAROV ET AL. 2010. PHYS MED SOC 100:1004



Be healthy. be happy. cycle!!!



FOR MORE INFORMATION, VISIT
WWW.ISGLOBAL.ORG/EN/URBAN-PLANNING

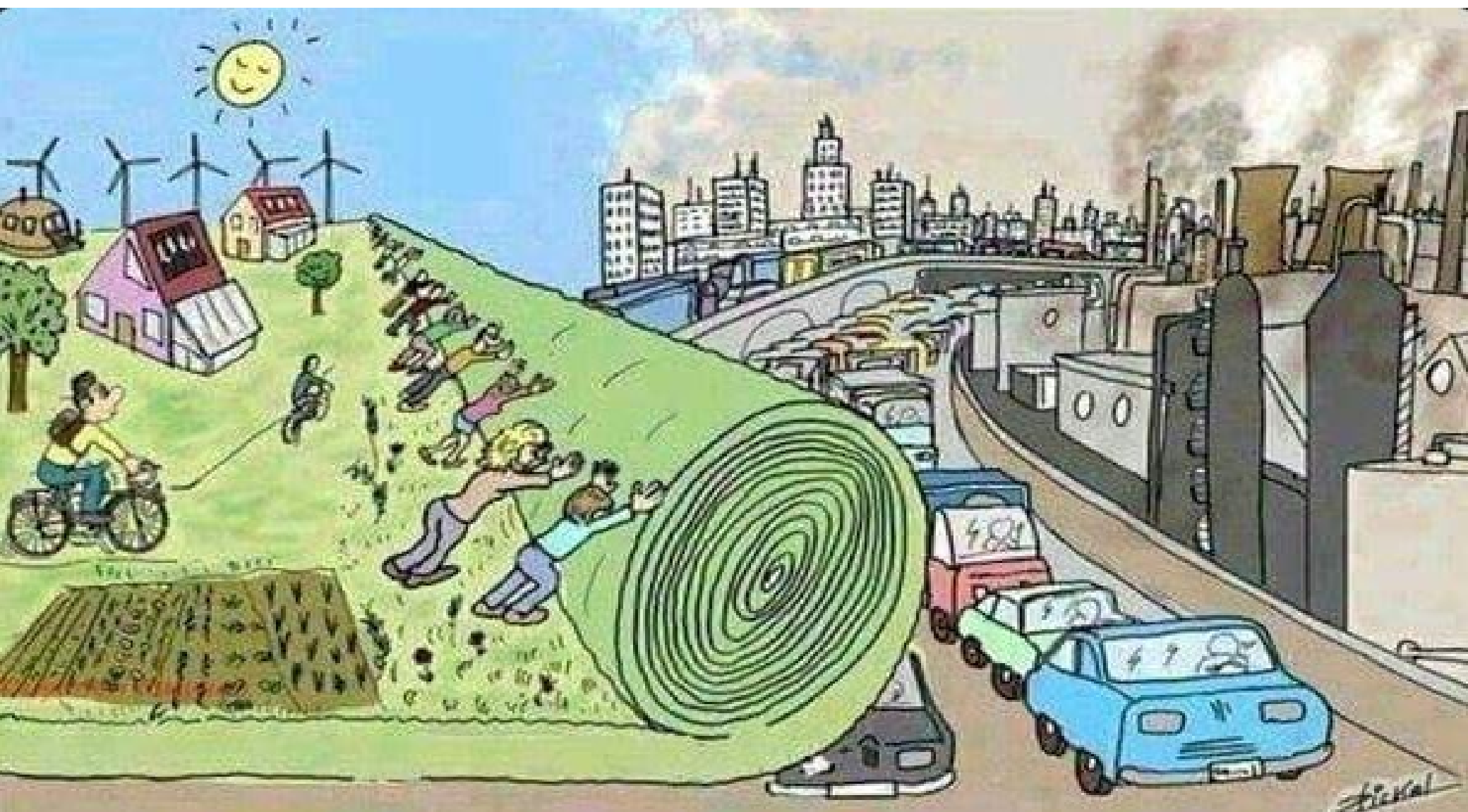
GRAPHIC DESIGN: INCHES, ALL PARTNERS

ISGlobal

**Benefits of physical activity
well outweigh the risks of
air pollution and accidents
for cyclists**



Utrecht, NL



GREEN AND LIVEABLE

- Greening cities has many health benefits including longer life expectancy, fewer mental health problems, better cognitive function, better mood and healthier babies
- It mitigates air pollution, heat and noise levels.
- CO2 sequestration
- Replacing roads and parking with green environments can be one way forward to change an environment from detrimental to beneficial.



Before



After

Greening cities

Seoul, Korea

ALDERHEY HOSPITAL LIVERPOOL BEFORE AND AFTER





Multisectoral approach

Multi sectorial and systemic approaches are needed to address current problems and find solutions



ARTICLE IN PRESS

Environment International xxx (xxxx) xxxx



Contents lists available at [ScienceDirect](#)

Environment International

journal homepage: www.elsevier.com/locate/envint



Urban and transport planning pathways to carbon neutral, liveable and healthy cities; A review of the current evidence

Mark J. Nieuwenhuijsen*

ISGlobal, Barcelona, Spain

Universitat Pompeu Fabra (UPF), Barcelona, Spain

CIBER Epidemiología y Salud Pública (CIBERESP), Madrid, Spain

Mary MacKillop Institute for Health Research, Melbourne, Australia

ISGlobal **Barcelona**
Institute for
Global Health

EMAIL: mark.nieuwenhuijsen@isglobal.org

The background of the book cover is a photograph of a city street lined with tall, leafy trees. A building is visible on the right side, and a street lamp is in the middle ground. The scene is captured in a slightly desaturated, artistic style.

COVID19 AND THE CITY

THE COVID19 PANDEMIC AND THE
TRANSFORMATION OF THE CITY

Mark Nieuwenhuijsen

[Amazon.com](https://www.amazon.com)

mark.nieuwenhuijsen@isglobal.org

ISGlobal **Barcelona**
Institute for
Global Health