

Cycling networks could prevent up to 10,000 premature deaths in European cities

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Bicycle lane in Barcelona, 2017. Credit: ISGlobal

A study led by researchers from the Barcelona Institute for Global

Health has found that expanding designated cycling networks in cities could provide considerable health and economic benefits.

Analysis of data from 167 European cities suggests that the length of cycling infrastructures is associated with a cycling mode share of up to 24.7 percent, in which one in every four citizens is likely to choose cycling for their daily commute. The study, published in *Preventive Medicine*, estimates that if all the cities under study achieved a 24.7 percent bicycle mode share, over 10,000 premature deaths could be avoided annually.

"This is the first study evaluating the potential associations between cycling [network](#) length, mode share and associated health impacts across European cities," says Natalie Mueller, ISGlobal researcher and first author of the paper. The health impact assessment showed that a routine shift in the transport mode to cycling is positive for health due to the associated increase in physical activity. "These benefits outweigh detrimental effects of air pollution and traffic incidents," adds Mueller.

The greatest health benefits among the different estimations made by the researchers were found in a scenario where the assessed cities had bike lanes in all their streets. In that case, London could avoid up to 1,210 premature deaths yearly, followed by Rome with 433 premature deaths yearly, and Barcelona with 248 premature deaths yearly. However, a 10 percent increase in designated cycling infrastructure was estimated to lead to significant increases in cycling and resulted in 21 [premature deaths](#) preventable in Rome, 18 in London and 16 in Barcelona.



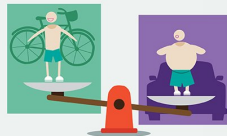
1 LESS RISK OF PREMATURE MORTALITY



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: PROTA PROJECT

3 LESS AIR POLLUTION

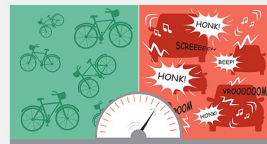
A 40% SHIFT FROM CAR TRIPS TO CYCLING IN BARCELONA'S METROPOLITAN AREA



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

3. SOURCE: MOLANA-RUEDA ET AL. 2012. ENVIRON INT 48:109-119

4 LESS NOISE POLLUTION

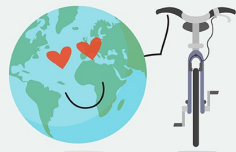


ON CAR FREE DAYS NOISE LEVELS CAN BE REDUCED BY UP TO 10 DECIBELS

4. SOURCE: MEIJERMAN/BIEN KAMP-KRUIER 2016

5 ZERO EMISSIONS TRANSPORT MODE

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

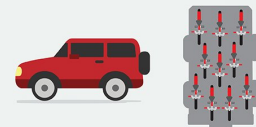


A 40% SHIFT FROM CAR TRIPS TO CYCLING CAN REDUCE 200,000 TONS OF CO₂ EMISSIONS ANNUALLY IN BARCELONA'S METROPOLITAN AREA

5. SOURCE: MOLANA-RUEDA ET AL. 2012. ENVIRON INT 48:109-119

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

7 MORE HAPPINESS!!

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

7. SOURCE: VANHOUTEN ET AL. 2012. PREV MED 57(2):135-9



Be healthy. be happy. cycle!!!



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

GRAPHIC DESIGN: RACHEL ALL INTERVIEW

ISGlobal

Besides being a means of transport, the bicycle is also a way to stay healthy and make cities healthier. In this infographic we give you seven good reasons to move on two wheels. Credit: ISGlobal

The researchers also performed an economic analysis to compare the costs of increasing cycling networks with the estimated [economic benefits](#) of prevented premature mortality. Results show that the best cost-benefit ratios would be met in a scenario of a 10 percent increase in the cycling network, in which the ratio of benefits per euro spent would be up to 70 to 1 in the case of Rome, 62 to 1 in the case of Zurich, and 35 to 1 in the case of Barcelona.

"Even though we did not consider other determinants of cycling and cannot infer causality here, we simply like to express that cycling networks should be high up on the agendas of [city](#) governments, which have direct local accountability for providing healthy choices to their citizens," says Mark Nieuwenhuijsen, coordinator of the Urban Planning, Environment and Health Initiative of ISGlobal and last author of the study. According to the study, cities with low cycling mode share (such as Rome, Barcelona and London), have great potential to increase cycling just by expanding their cycling networks. "A 10 percent increase in cycling infrastructure, which we perceive as an achievable policy for city governments, most likely provides considerable health and economic benefits," adds Nieuwenhuijsen.

"Once again we can see that getting people out of their own cars produces great health benefits. A combination of 'push' measures that make cars unattractive and 'pull' policies aimed at making public transport and [cycling](#) more appealing would be best to improve [health](#)

and well-being in European cities," concludes researcher Natalie Mueller.

More information: Natalie Mueller et al, Health impact assessment of cycling network expansions in European cities, *Preventive Medicine* (2018). [DOI: 10.1016/j.ypmed.2017.12.011](https://doi.org/10.1016/j.ypmed.2017.12.011)

Provided by Barcelona Institute for Global Health

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