

POLICY BRIEF - 2021

HEALTH IMPACTS OF BIKE-SHARING SYSTEMS IN THE UNITED STATES



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Why is bike-share important?

A Bike-sharing system is an active transport intervention that can increase physical activity levels and minimize negative environmental outcomes associated with motorized transport.

As more people bike, the number of motorized vehicles on the road decrease, ultimately relieving traffic congestion and reducing noise and air pollution.

In 2019 there were 136 million trips taken on shared bikes, e-bikes, and scooters, in the United States. These trips resulted in an estimated 30 million hours of additional physical activity and averted 65 million pounds of CO₂ emissions.

In the U.S., there are 72 bike-sharing systems, which include approximately 100,000 bikes, over 57,000 station-based bikes, and 109,589 trips per day. The NYC bike-share is the largest system in the nation, with 19,000 bikes, 57,000 trips per day, and over 1,000 stations.



What are Bike Sharing Systems ?

Bike-share systems are short-term bike rentals that allow users to borrow a bike from one location and return it to another at the conclusion of the trip

What was assessed in this study?

Bike-sharing systems:

- All the systems in the U.S.
- Bike share in New York City

Bike-share trips coming:

- Walking
- Driving
- Public transport

Population:

- Adult bicyclists

Exposures:

- Physical activity
- Air pollution
- Traffic incidents

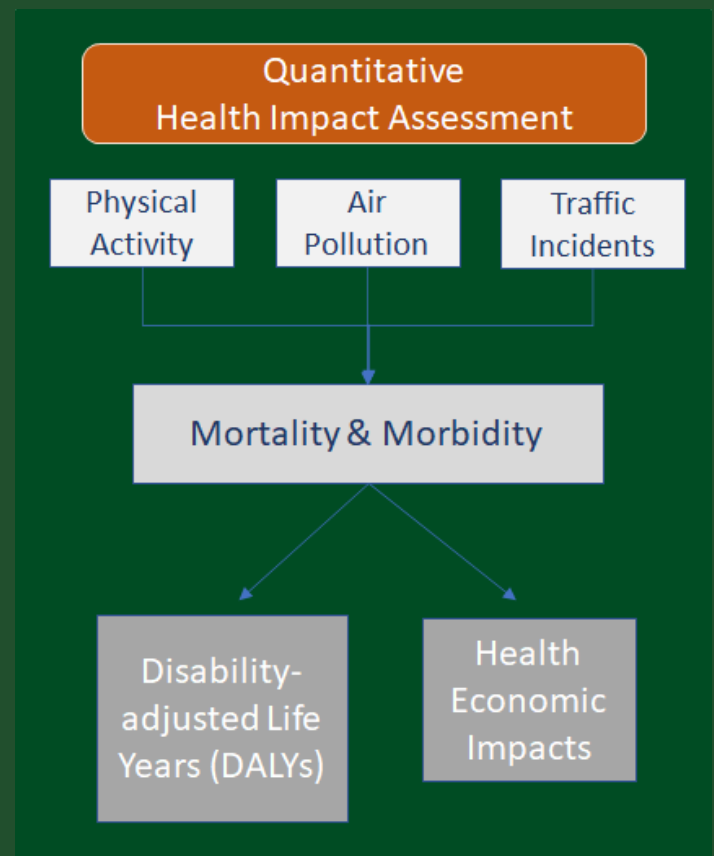
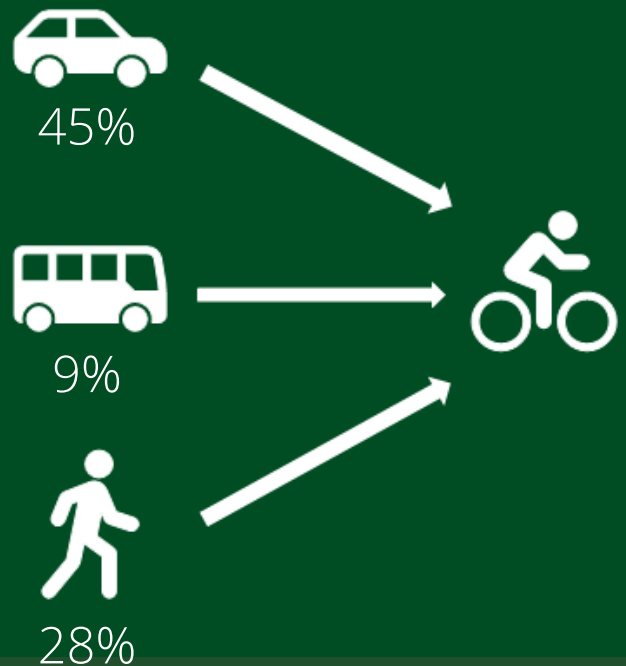
Health outcomes:

- Mortality
- Disease incidence
- Disability-adjusted life years (DALYs)
- Health economic impacts

Method:

- Quantitative health impact assessment

Modal shift reported in the U.S.



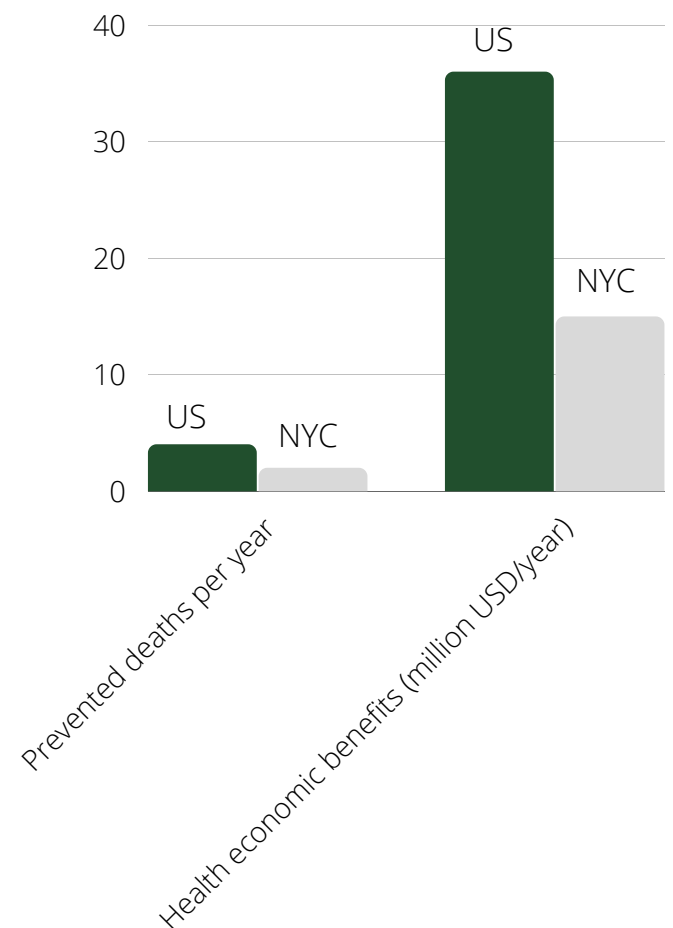
What did the study find?

In the U.S., all the bike-share trips done in the country were estimated to prevent 4 premature deaths, reduce 737 disability-adjusted life years, and an estimated reduction of USD 36,292,312 on health economic impacts each year.

In NYC, all the bike-share trips done in the city were estimated to prevent 2 premature deaths, 355 disability-adjusted life years, and an estimated reduction of USD 15,608,327 annually on health economic impacts.

Bike-share and health

While these transport schemes have the potential to **improve public health** by increasing physical activity, some evidence has associated biking with health risks for travelers, such as exposure to air pollution and road traffic injuries.



UNITED STATES



+ Benefit

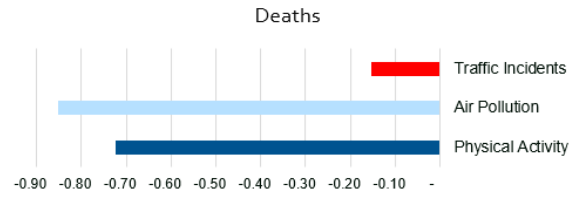
- Risk



1.73 premature deaths prevented each year among travelers switching from walking



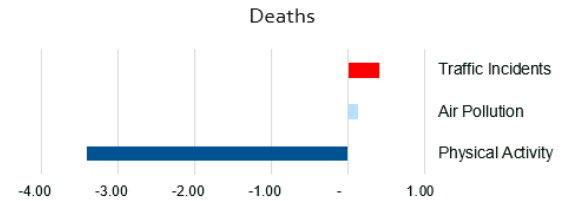
Walk to BSS



0.16 premature deaths avoided annually among travelers switching from public transport to BSS



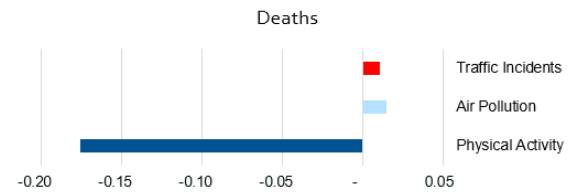
Car to BSS



2.86 premature deaths avoided annually among travelers switching from car to BSS



Public Transport to BSS

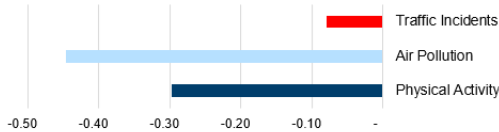


NEW YORK CITY



Walk to BSS

Deaths

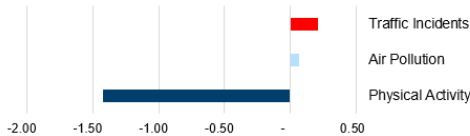


0.83 premature deaths prevented annually among travelers switching from walking to BSS



Car to BSS

Deaths

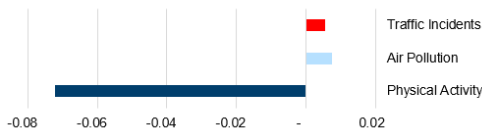


1.15 premature deaths were estimated to be prevented annually among travelers switching from car to BSS



Public Transport to BSS

Deaths



0.06 premature deaths were estimated to be prevented annually among travelers switching from public transport to BSS



A photograph of a person riding a blue bike-share bicycle. The person is wearing a white shirt and is riding on a paved path with green trees in the background. The bicycle is blue with a black seat and handlebars. The image is slightly blurred, focusing on the person and the bike.

Key Findings

This study found that:

- The **health benefits** of bike-sharing systems are **greater than the health risks** in the United States and New York City.
- In the U.S. and NYC, shifting from car, public transport, and walk to bike-share trips **reduces premature deaths, disability-adjusted life years, and economic health impacts.**
- **Improvements in air quality and traffic safety** across U.S. cities will **maximize the health benefits** of bike-sharing systems.
- This study **supports the implementation and expansion of bike-sharing systems** across cities in the U.S.

RECOMMENDATIONS



Promote bike-sharing systems



Support car trip substitution



Invest in active transport infrastructure



Improve bicyclists safety



Reduce air pollution

1

Bike-share managers and micromobility officials:

Collect and publish open access data on the number of standard and electric bikes, the average number of trips per day, substitution mode, type of user, average trip duration, distance, and speed.

2

Transport officials:

Provide more data on overall mobility in their cities and collaborate with bike-share managers to provide access to mobility reports and snapshots of these systems.

3

City planners:

Improve active transport infrastructure aiming to increase safety and appeal. For instance, add and widen bike lanes, place physical barriers between traffic and bike lanes, and lower traffic speeds.

4

Health Practitioners:

Utilize bike-share as a mean of health promotion and encourage travelers to use active transport as an alternative to motorized transport.

5

Bike-share Operators:

Equitably distribute bike-share systems. Expand bike-share into neighborhoods that serve historically underrepresented and marginalized communities. Design bike-share services to be inclusive of people with limited mobility.





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