



Cycling safety concerns grow in US cities

As more bicycle riding is encouraged for health and environmental reasons, an increase in cycling deaths is causing a public health dilemma in the USA. Susan Jaffe reports.

A record number of cycling deaths in the USA is attracting scrutiny from the US Congress, city officials, and the National Transportation Safety Board (NTSB), the government agency better known for investigating aeroplane crashes and other transportation disasters.

Last year, 859 cyclists were killed in road traffic crashes, the highest number in the USA since 1990, and a 6.3% increase since 2017, according to research from the US Department of Transportation's National Highway Traffic Safety Administration published last month. Pedestrian deaths increased by 3.4% and fatal crashes involving large trucks increased by 0.8%. By contrast, the number of overall traffic fatalities in 2018 decreased for the second consecutive year.

In a preliminary report issued last week, the NTSB recommended that public officials take several steps to reduce the number of cycling deaths. The last time it examined bicycle safety was 47 years ago.

Because most bicycle-related fatalities and a large proportion of emergency department visits involve head injuries, the NTSB said cyclists should be required to wear helmets. Even though this approach is the most effective way to reduce head injuries, less than half of cyclists wear helmets, the NTSB found. No state requires adult cyclists to wear helmets, although younger cyclists must do so in 21 states and the District of Columbia, according to the Governors Highway Safety Association.

To prevent crashes, the NTSB recommended designated bike lanes to separate cyclists from motor vehicles. Because more than 65% of bicycle crashes happen at intersections, the NTSB recommended

right-of-way signage, medians, signals, and pavement markings at intersections.

The NTSB report comes as city officials across the country urge more people to use bicycles to reduce motor vehicle traffic and air pollution, and to encourage more physical exercise.

Bill de Blasio, the mayor of New York City, acknowledged the board's concerns highlight conflicting public messages.

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“There is a safety issue that we have to come to grips with and, at the same time, I hear the voices that say, ‘hey, we don’t want to discourage people from riding bikes, it’s good for the environment, and fighting climate change, it’s good for reducing [traffic] congestion’”, he told reporters last week.

Only a week earlier, the New York City Council responded to demands to expand the city’s 1240 miles of bicycle-only lanes by agreeing to fund another 250 miles. “I think we have to figure out what’s a way to get to the day when people use bike helmets regularly and we keep encouraging bike use rather than discouraging it”, de Blasio said. “I don’t have the magic formula yet, but I think the NTSB is pointing us in the right direction.”

Yet some cycling advocates have argued that a helmet requirement will deter cyclists, particularly the increasing numbers of people who rent bikes through bike-share programmes, which often do not provide helmets.

A helmet mandate would make cycling less safe by shrinking the cycling population, said a spokesman for Transportation Alternatives, a cycling advocacy group. Several experts have noted that, where there

are more cyclists, there is a so-called safety in numbers effect. Cyclists are more visible and safer when there are more of them.

Risks versus benefits

In New York City, the most populated US city, which comprises about 8.4 million residents, cyclist fatalities have spiked to 26 deaths so far this year, compared with ten deaths in 2018. Among this year’s deaths was that of a man aged 87 years, who cycled across an intersection and was hit by a minivan in Brooklyn 2 weeks ago. In June, a bicycle messenger, aged 20 years, who was riding alongside morning traffic in Manhattan, was hit by a truck and killed.

The average number of New Yorkers riding bicycles to work has increased by 55% between 2012 and 2017, to almost 49 000 cyclists, according to the city’s transportation department. Smaller increases in commuting by bicycle have also occurred in nine other major cities during the same period.

Cycling is a good way to improve metabolic and physical functioning, boost mental health, and reduce obesity, said Christopher Morrison, an assistant professor in the Department of Epidemiology at Columbia

For more on **traffic deaths in 2018** see <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812826>

For the **National Transportation Safety Board’s report on cycling safety** see <https://www.nts.gov/news/events/Pages/2019-DCA18SS002-BMG.aspx>

For the **review of the effects of pollutants on cyclists and people in motor vehicles** see [Review Lancet Public Health 2017; 1: e23–34](#)





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University's Mailman School of Public Health. The well documented benefits of aerobic exercise, such as bike riding, include a reduced risk of developing type 2 diabetes, cardiovascular disease, and other chronic diseases. There are also environmental benefits to cycling.

"When people bike, they take cars off the roads", said Philip Landrigan, a paediatrician, epidemiologist, and director of the Program in Global Public Health and the Common Good at Boston College. And fewer cars improve health by reducing particulate pollution and carbon dioxide, which contribute to planetary warming, he said.

Although cyclists commuting to work in polluted cities are exposed to ground-level pollutants, a 2016 review of studies compared the effects of five pollutants on cyclists and people in motor vehicles, finding that those in motor vehicles had a life expectancy of up to 1 year less than that of the cyclists. A certain amount of automotive exhaust seeps into cars, which is one of the factors contributing to their heavier exposure, Landrigan said.

Across the country, cities have touted the health benefits of cycling, among other reasons, to convince residents to leave their cars at home. In the northern Virginia suburbs of Washington, DC, Arlington County officials created a publicity campaign focused on how a "car-free diet" featuring bike riding is good for

cyclists' wallets and waistlines. And should anyone forget, the local bike share programme—operated through a phone app—reminds users how many calories they burned after each trip.

City and health officials and local businesses created Fit City Tyler in response to a dramatic rise in obesity in Tyler, northeast Texas, said George Roberts, chief executive officer of the Northeast Texas Health District and president of the National Association of County and City Health Officials. Among other things, the programme installed bike racks at hospitals, schools, and workplaces and expanded bike lanes. "Cycling is one piece of being active and healthy", he said.

"Increasing the number of people cycling makes our city a better place to live and will help keep us at the forefront of sustainability" Polly Trottenberg, New York City's transportation commissioner and a cyclist, told city council members last month. "We strongly encourage cycling and made it substantially safer than it has been in the past, but we also need to do much more."

Vision Zero

New York City is one of 43 cities in the USA that are part of the Vision Zero Network, a non-profit collaboration of local government officials that began in Sweden, which is dedicated to eliminating traffic injuries and deaths among all road users.

Vision Zero relies on a "space systems approach" to help cities improve road safety, said Leah Shahum, the network's US director. The strategy includes traffic calming measures to reduce motor vehicle speed, especially on the most dangerous roadways. Setting lower speed limits are not enough, she said. For example, narrower streets will compel most drivers to slow down. A narrow turning radius at an intersection can have the same effect. Such changes can be incorporated into regular road maintenance.

Last month, Representative Earl Blumenauer, an Oregon Democrat and co-chair of the Congressional Bike Caucus, introduced the Vision Zero Act to allow cities to use federal transportation funds to implement Vision Zero projects. "By listing Vision Zero as eligible for billions of dollars in federal funding, communities can meaningfully improve bike safety through better street design, lower speed limits, community outreach, and more", he said.

New York City, San Francisco, Chicago, and other cities have recalibrated traffic signals on some streets to favour cyclists. Riding at about 10–15 mph, cyclists will encounter a series of green lights at intersections, where most bicycle crashes typically occur. Motor vehicles travelling at faster speeds will be stopped by more red lights.

Although all bike lanes do not offer the same level of protection against crashes, any bike lane is better than none, said Morrison. He and his colleagues studied the effectiveness of bike lanes and found that "larger bike lanes that have greater separation between motor vehicular traffic and the cyclist were consistently protective against crashes", he said. "Smaller, narrower bike lanes are the least protective and least beneficial."

The existence of bike lanes "legitimises cycling as a form of transportation", Morrison said. Bike lanes confirm that "cyclists have as much right to use the roadways as motorists".

But even though bike lanes are restricted to bicycles, the rules aren't always enforced, said Ray Shah, who uses a rental bike to commute to work in New York City. Parked cars and idling trucks can turn bike lanes into an obstacle course. "You have to read the road ahead", he said. "You have to know what's coming, what's turning, and what's going to step out in front of you."

Susan Jaffe