

Biking and Breathing

Fall 2015



Darby Jack tests out the air-monitoring equipment used in his study. Photo courtesy of WNYC.

Every year, more and more urbanites are commuting on two wheels, thanks to the proliferation of bicycle lanes, greenways, and bike-share programs like New York's Citi Bike. But is cycling in the city as healthy as people think?

Darby Jack, an environmental-health scientist at the Mailman School of Public Health, and Steven Chillrud '96GSAS, an environmental geochemist at the Lamont-Doherty Earth Observatory, suspect that many urban cyclists are exposing themselves to unhealthy amounts of air pollution. To test that hypothesis, Jack and Chillrud recently teamed up with the New York City public radio station WNYC to recruit local cyclist willing to wear special vests outfitted with air-monitoring equipment on their daily commutes. The cyclists also wear heartrate monitors, blood-pressure cuffs, and respiration trackers so that the researchers can determine

how the intensity of their workouts affects the amount of pollution they inhale — as well as the impact pollution has on their cardiovascular systems after they ride.

“When a person’s breathing is really fast and heavy, the amount of fine particles entering their lungs can shoot up tenfold,” says Jack. “On certain streets with thick traffic, we see peaks in their exposure that we do believe are harmful.”

Jack and Chillrud plan to enlist hundreds of New York City cyclists to participate over the next several years. They hope to collect enough data to eventually identify particular streets that cyclists and joggers ought to avoid, and help city planners determine where new bike paths and greenways might be created. Says Jack: “We’re thinking of this as information that leads to the design of healthy infrastructure.”



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