

## **An Analysis of the Relationship between Presence of Green Space in 330 Cities in the United States and the Health Status of Their Citizens**

*Naomi Mauss, Department of Data Science*

Increasingly, scientific literature suggests that there is a positive correlation between the amount of green space in an area—the amount of plant matter growing in an area—and the health of the population living in that area. A meta-analysis published in *The Lancet Planetary Health* in 2019 found that there is a link between a higher percentage of green space in an area and the reduced mortality rate of people living in that area.<sup>1</sup> A different meta-analysis published in *Science of The Total Environment* in 2019 found an inverse relationship between an area's Normalized Difference Vegetation Index (NDVI) and the prevalence of hypertension in the population.<sup>2</sup> The goal of this research was to examine the correlation between different health conditions and the prevalence of green space for the 330 largest cities in the United States. The study considered kidney disease, asthma, cancer, high blood pressure, arthritis, diabetes, Chronic Obstructive Pulmonary Disease (COPD), binge drinking, and poor mental health by city, as obtained from the CDC's PLACES survey.<sup>3</sup> This study measured greenspace as the percentage of the city designated as parks. As used here, a park includes city, state, and national parks, as well as city and state forests. The results of this study indicate there is less than a 0.0085 coefficient of determination between the percent of a city dedicated to parks and the health of that city. However, regional differences in health may be acting as a confounding variable, causing the apparent lack of correlation. Further studies with smaller geographical scopes would be needed in order to determine whether or not this is true.

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<sup>1</sup> Rojas-Rueda, David, et al. "Green Spaces and Mortality: A Systematic Review and Meta-Analysis of Cohort Studies." *The Lancet Planetary Health*, Elsevier, 20 Nov. 2019, [www.sciencedirect.com/science/article/pii/S2542519619302153?via%3Dihub](https://www.sciencedirect.com/science/article/pii/S2542519619302153?via%3Dihub).

<sup>2</sup> Zhao, Yu, et al. "Association between Greenspace and Blood Pressure: A Systematic Review and Meta-Analysis." *Science of The Total Environment*, Elsevier, 10 Jan. 2022, [www.sciencedirect.com/science/article/pii/S0048969721075914](https://www.sciencedirect.com/science/article/pii/S0048969721075914).

<sup>3</sup> "Places: Local Data for Better Health." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 29 Aug. 2024, [www.cdc.gov/places/index.html](https://www.cdc.gov/places/index.html).