

## 背景

研究表明，空气污染物加剧了新冠肺炎的传播率和<sup>2</sup>死亡率<sup>1</sup>。新冠肺炎和严重污染的空气都会对人体的呼吸系统造成致命性的影响。由于居民生活在美国污染最严重地区之一，新冠肺炎对洛杉矶的居民的影响也更加严重了。

## 不成比例的影响

根据美国肺脏协会，洛杉矶市区是全美空气质量最差的地区之一。洛杉矶在每年的细颗粒物(particulate matter)暴露量中排名第4，在24小时细颗粒物暴露量中排名第6。<sup>3</sup> 洛杉矶并且是过去几十年里臭氧污染最严重的城市。<sup>4</sup> 高等级的空气污染会延长新冠肺炎病毒在空气中的距离和停留时间，并加快病毒的传播和加剧新冠肺炎的死亡率。

## 细颗粒物是如何影响新冠肺炎的



细颗粒物的每立方米<sup>3</sup>与新冠肺炎的死亡率增加8%有关<sup>5</sup>



短时期接触高浓度的细颗粒物2.5、细颗粒物10和臭氧会增加感染新冠肺炎的风险<sup>6</sup>



高水平的细颗粒物10会加速新冠肺炎的感染<sup>7</sup>



当空气污染浓度增加20%时，新冠肺炎的确诊病例几乎翻了两倍<sup>8</sup>

1. Wu, X., Nethery, R., Sabath, B., Braun, D., & Dominici, F. (2020, January 01). Exposure to air pollution and COVID-19 mortality in the United States: A nationwide cross-sectional study (<https://www.medrxiv.org/content/10.1101/2020.04.05.20054502v1>) \*此文章并未经同行评审

2. Zhu, Y., Xie, J., Huang, F., & Cao, L. (2020, July 20). Association between short-term exposure to air pollution and COVID-19 infection: Evidence from China. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7159846/>) \*同行评审

3. State of the Air, 2020. American Lung Association, pg. 5. (<http://www.stateoftheair.org/assets/SOTA-2020.pdf>)

4. Ibid.

5. Wu, X., Nethery, R., Sabath, B., Braun, D., & Dominici, F. (2020, January 01). Exposure to air pollution and COVID-19 mortality in the United States: A nationwide cross-sectional study (<https://www.medrxiv.org/content/10.1101/2020.04.05.20054502v1>) \*此文章并未经同行评审

6. Zhu, Y., Xie, J., Huang, F., & Cao, L. (2020, July 20). Association between short-term exposure to air pollution and COVID-19 infection: Evidence from China. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7159846/>) \*同行评审

7. Setti, L., De Gennaro, G., Barbieri, P., Perrone Grazia, M., Piazzalunga, A., Borelli, M., Di Gilio, A., Piscitelli, P., Miami, A. (2020, April 17). The Potential Role of Particulate Matter in the Spreading of COVID-19 in Northern Italy: First Evidence-based Research Hypotheses (<https://www.medrxiv.org/content/10.1101/2020.04.11.20061713v1.full.pdf>) \*此文章并未经同行评审

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