

Air pollution's link to dementia

The Institute for Health Metrics and Evaluation (IHME) carried out the largest-ever study synthesizing evidence of air pollution and dementia. Tiny particles of air pollution, known as $PM_{2.5}$, harm brain tissue and increase a person's risk of developing dementia. Most people in the US are exposed to levels of air pollution that increase their chances of developing this deadly disease.

Air pollution can increase your risk of dementia, even at low levels



[Baltimore City Smoke Stack](#) by Artondra Hall.

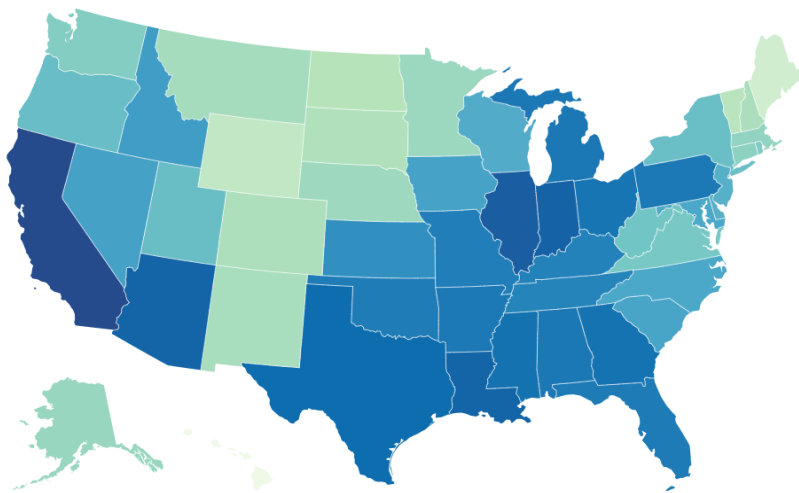
Air pollution increases the risk of dementia by at least

14%

Relative to a reference level of air pollution ($PM_{2.5}$) of $2 \mu g/m^3$

People in much of the US breathe polluted air¹

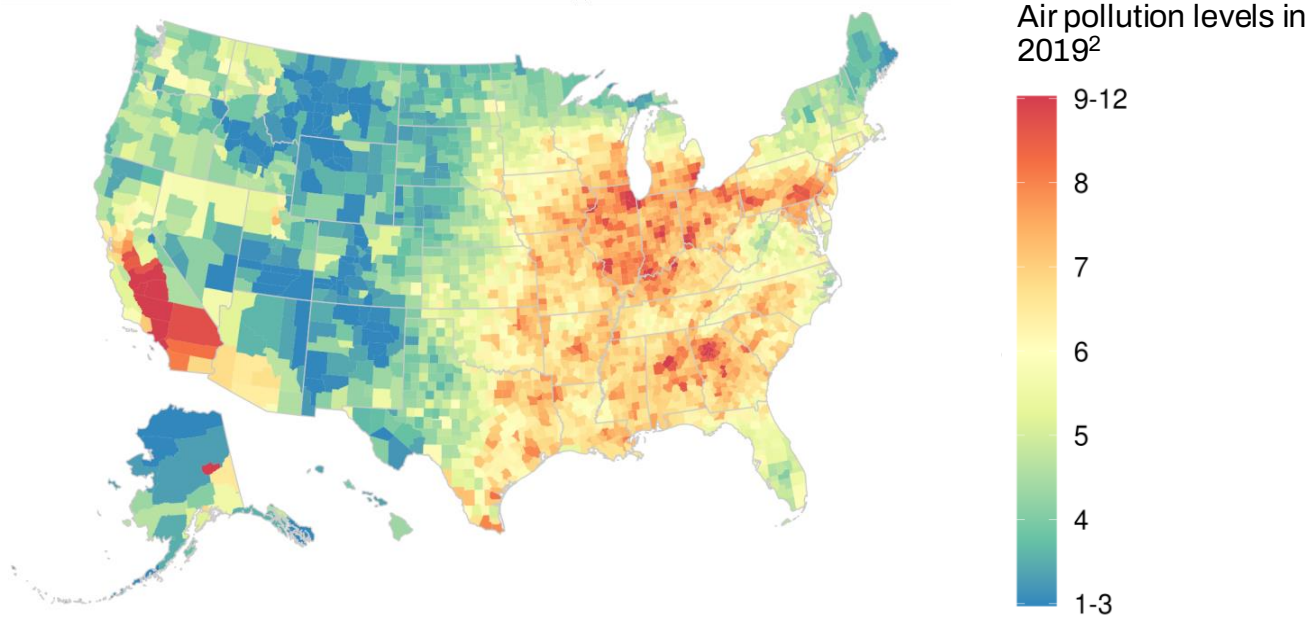
Pollution levels by state in 2022



Hawaii, Maine, and Wyoming have the cleanest air in the US.

¹Map shows air pollution ($PM_{2.5}$) measured in $\mu g/m^3$.

Air pollution levels vary greatly within states



²Based on exposure to air pollution ($PM_{2.5}$) measured in $\mu\text{g}/\text{m}^3$.



"Brains!" by Hey Paul Studios

Air pollution can harm the brain

Air pollution ages the brain by:

- Causing inflammation.
- Damaging brain tissue.
- Increasing the risk of heart disease, which can lead to dementia.

Protecting people from air pollution

- Adjustment of air quality regulations is needed to make the air safer to breathe.
- Current US air pollution guidelines specify levels around **2x** greater than the recommended level.³



Blue skies over Napa Valley by Mumm vineyards.

³Recommended limit for air pollution ($PM_{2.5}$) is $5 \mu\text{g}/\text{m}^3$.

About IHME

The Institute for Health Metrics and Evaluation is an independent research organization at the University of Washington. Its mission is to deliver to the world timely, relevant, and scientifically valid evidence to improve health policy and practice.

For more information, contact:

Dr. Katrin Burkart
Assistant Professor
katburk@uw.edu