

# HEALTHY AIR. HEALTHY BRAIN.

## Did You Know?

Air pollution comes from many places. It can be caused by dust storms, wildfires, heating and cooking at home, farming, factories, and power plants. It also happens when people burn things like wood, coal, charcoal, crop waste, animal waste, or kerosene in places without good air flow.<sup>1</sup>

About 156 million people live in places with failing grades for unhealthy levels of air pollution.<sup>2</sup>



Some types of indoor and outdoor air pollution increase your risk for memory loss, problems with thinking, and confusion.<sup>3</sup>



Widespread air pollution may increase your risk for memory loss, problems with thinking, and confusion even more than diabetes, physical inactivity, hypertension, alcohol use, and obesity.<sup>4</sup>



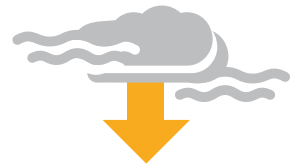
Women carrying the Alzheimer's risk gene APOE4 and older women living in areas with high levels of air pollution are at a higher risk for memory loss, problems with thinking, and confusion.<sup>5</sup>



People who live in low-income communities are more likely to be exposed to air pollution.<sup>3</sup>



Reducing air pollution is linked to better thinking and a lower risk of memory loss and confusion.<sup>3</sup>



## What Public Health Programs Can Do

- Use [AirNow.gov](https://www.airnow.gov) to track daily air pollution forecasts in your community.<sup>2</sup>
- Participate in efforts to monitor air quality in neighborhoods. Purple Air can be a helpful resource, especially in low-income communities.<sup>6</sup>
- Support air quality and climate policy change in your community, including:
  - The use of human health assessments<sup>7</sup>
  - Adopting a climate action plan<sup>2</sup>
  - Purchasing of zero-emission fleet vehicles<sup>2</sup>
  - Establishing purchasing goals for renewable, non-combustion electricity<sup>2</sup>
  - Increasing access to ride share programs and public transportation<sup>8</sup>
- Educate healthcare providers on the relationship between air pollution and memory loss, problems with thinking, and confusion.

### References

<sup>1</sup>Health Effects Institute. 2024. State of Global Air 2024. Special Report. Boston, MA: Health Effects Institute. <https://www.stateofglobalair.org/resources/report/state-global-air-report-2024>

<sup>2</sup>American Lung Association. State of the AIR 2025 Report. (2025). <https://www.lung.org/getmedia/5d8035e5-4e86-4205-b408-865550860783/State-of-the-Air-2025.pdf>

<sup>3</sup>Livingston, Gill et al. Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. The Lancet, Volume 404, Issue 10452, 572 – 628. [https://doi.org/10.1016/s0140-6736\(24\)01296-0](https://doi.org/10.1016/s0140-6736(24)01296-0)

<sup>4</sup>Franz, C. E., et al. (2023). Associations between ambient air pollution and cognitive abilities from midlife to early old age: modification by APOE genotype. Journal of Alzheimer's Disease, 93(1), 193-209. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10827529/>

<sup>5</sup>Popov, V. A., et al. (2024). Traffic-related air pollution and APOE4 can synergistically affect hippocampal volume in older women: new findings from UK Biobank. Frontiers in dementia, 3, 1402091. <https://doi.org/10.3389/frdem.2024.1402091>

<sup>6</sup>Purple Air. 2025. <https://www2.purpleair.com/>

<sup>7</sup>U.S. Environmental Protection Agency. Air Quality Management Process: Assessment and Implementation. (2024a). <https://www.epa.gov/air-quality-management-process/assessment-and-implementation>

<sup>8</sup>U.S. Environmental Protection Agency. Actions you can take to reduce air pollution. (2024b). <https://www.epa.gov/AQNE/actions-you-can-take-reduce-air-pollution#:~:text=Reduce%20the%20number%20of%20trips,powered%20lawn%20and%20garden%20equipment>

# HEALTHY AIR. HEALTHY BRAIN.

## Did You Know?

Air pollution comes from many places. It can be caused by dust storms, wildfires, heating and cooking at home, farming, factories, and power plants. It also happens when people burn things like wood, coal, charcoal, crop waste, animal waste, or kerosene in places without good air flow.<sup>1</sup>

About 156 million people live in places with failing grades for unhealthy levels of air pollution.<sup>2</sup>



Some types of indoor and outdoor air pollution increase your risk for memory loss, problems with thinking, and confusion.<sup>3</sup>



Widespread air pollution may increase your risk for memory loss, problems with thinking, and confusion even more than diabetes, physical inactivity, hypertension, alcohol use, and obesity.<sup>4</sup>



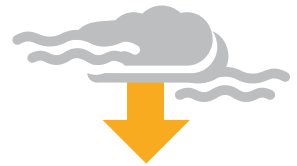
Women carrying the Alzheimer's risk gene APOE4 and older women living in areas with high levels of air pollution are at a higher risk for memory loss, problems with thinking, and confusion.<sup>5</sup>



People who live in low-income communities are more likely to be exposed to air pollution.<sup>3</sup>



Reducing air pollution is linked to better thinking and a lower risk of memory loss and confusion.<sup>3</sup>



## What Local Coalitions Can Do

- Use [AirNow.gov](https://www.airnow.gov) to track daily air pollution forecasts in your community.<sup>2</sup>
- Participate in efforts to monitor air quality in neighborhoods. Purple Air can be a helpful resource, especially in low-income communities.<sup>6</sup>
- Support air quality and climate policy change in your community, including:
  - The use of human health assessments<sup>7</sup>
  - Adopting a climate action plan<sup>2</sup>
  - Purchasing of zero-emission fleet vehicles<sup>2</sup>
  - Establishing purchasing goals for renewable, non-combustion electricity<sup>2</sup>
  - Increasing access to ride share programs and public transportation<sup>8</sup>
- Educate healthcare providers on the relationship between air pollution and memory loss, problems with thinking, and confusion.

### References

<sup>1</sup>Health Effects Institute. 2024. State of Global Air 2024. Special Report. Boston, MA: Health Effects Institute. <https://www.stateofglobalair.org/resources/report/state-global-air-report-2024>

<sup>2</sup>American Lung Association. State of the AIR 2025 Report. (2025). <https://www.lung.org/getmedia/5d8035e5-4e86-4205-b408-865550860783/State-of-the-Air-2025.pdf>

<sup>3</sup>Livingston, Gill et al. Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. The Lancet, Volume 404, Issue 10452, 572 – 628. [https://doi.org/10.1016/s0140-6736\(24\)01296-0](https://doi.org/10.1016/s0140-6736(24)01296-0)

<sup>4</sup>Franz, C. E., et al. (2023). Associations between ambient air pollution and cognitive abilities from midlife to early old age: modification by APOE genotype. Journal of Alzheimer's Disease, 93(1), 193-209. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10827529/>

<sup>5</sup>Popov, V. A., et al. (2024). Traffic-related air pollution and APOE4 can synergistically affect hippocampal volume in older women: new findings from UK Biobank. Frontiers in dementia, 3, 1402091. <https://doi.org/10.3389/frdem.2024.1402091>

<sup>6</sup>Purple Air. 2025. <https://www2.purpleair.com/>

<sup>7</sup>U.S. Environmental Protection Agency. Air Quality Management Process: Assessment and Implementation. (2024a). <https://www.epa.gov/air-quality-management-process/assessment-and-implementation>

<sup>8</sup>U.S. Environmental Protection Agency. Actions you can take to reduce air pollution. (2024b). <https://www.epa.gov/AQNE/actions-you-can-take-reduce-air-pollution#:~:text=Reduce%20the%20number%20of%20trips,powered%20lawn%20and%20garden%20equipment>

## Did You Know?

Air pollution comes from many places. It can be caused by dust storms, wildfires, heating and cooking at home, farming, factories, and power plants. It also happens when people burn things like wood, coal, charcoal, crop waste, animal waste, or kerosene in places without good air flow.<sup>1</sup>

About 156 million people live in places with failing grades for unhealthy levels of air pollution.<sup>2</sup>



Some types of indoor and outdoor air pollution increase your risk for memory loss, problems with thinking, and confusion.<sup>3</sup>



Widespread air pollution may increase your risk for memory loss, problems with thinking, and confusion even more than diabetes, physical inactivity, hypertension, alcohol use, and obesity.<sup>4</sup>



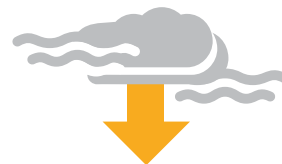
Women carrying the Alzheimer's risk gene APOE4 and older women living in areas with high levels of air pollution are at a higher risk for memory loss, problems with thinking, and confusion.<sup>5</sup>



People who live in low-income communities are more likely to be exposed to air pollution.<sup>3</sup>



Reducing air pollution is linked to better thinking and a lower risk of memory loss and confusion.<sup>3</sup>



## What Healthcare Providers Can Do

- Educate patients on the relationship between air pollution and memory loss, problems with thinking, and confusion.
- Encourage patients to use [AirNow.gov](https://www.airnow.gov) to track daily air pollution forecasts in their community.<sup>2</sup>

### References

<sup>1</sup>Health Effects Institute. 2024. State of Global Air 2024. Special Report. Boston, MA: Health Effects Institute. <https://www.stateofglobalair.org/resources/report/state-global-air-report-2024>

<sup>2</sup>American Lung Association. State of the AIR 2025 Report. (2025). <https://www.lung.org/getmedia/5d8035e5-4e86-4205-b408-865550860783/State-of-the-Air-2025.pdf>

<sup>3</sup>Livingston, Gill et al. Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. The Lancet, Volume 404, Issue 10452, 572 – 628. [https://doi.org/10.1016/s0140-6736\(24\)01296-0](https://doi.org/10.1016/s0140-6736(24)01296-0)

<sup>4</sup>Franz, C. E., et al. (2023). Associations between ambient air pollution and cognitive abilities from midlife to early old age: modification by APOE genotype. Journal of Alzheimer's Disease, 93(1), 193-209. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10827529/>

<sup>5</sup>Popov, V. A. et al. (2024). Traffic-related air pollution and APOE4 can synergistically affect hippocampal volume in older women: new findings from UK Biobank. Frontiers in dementia, 3, 1402091. <https://doi.org/10.3389/frdem.2024.1402091>

### **About NACDD:**

Since 1988, the National Association of Chronic Disease Directors and its more than 7,000 Members have worked to strengthen state-based leadership and expertise for chronic disease prevention and control in all states, territories, and nationally.

### **NACDD Web/Address:**

[chronicdisease.org](http://chronicdisease.org) | 8735 Dunwoody Place, #10962, Atlanta, GA 30350

### **Funding Disclaimer:**

Integrating Brain Health Messaging in Chronic Disease Programs and Facilitating Collaboration Among BOLD Public Health Programs is supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) under CDC/HHS as part of a financial assistance award totaling \$1,000,000 with 100% funded by CDC/HHS. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, CDC/HHS or the U.S. Government.

### **Accessibility Statement:**

If you require this document in an alternative format, such as large print or a colored background, contact the Communications and Member Services Department at [publications@chronicdisease.org](mailto:publications@chronicdisease.org).

