Alzheimer's Disease Research

ALZHEIMER'S SCIENCE NEWS

FALL 2025

AIR POLLUTION AND ALZHEIMER'S RISK: A GLOBAL HEALTH CONCERN

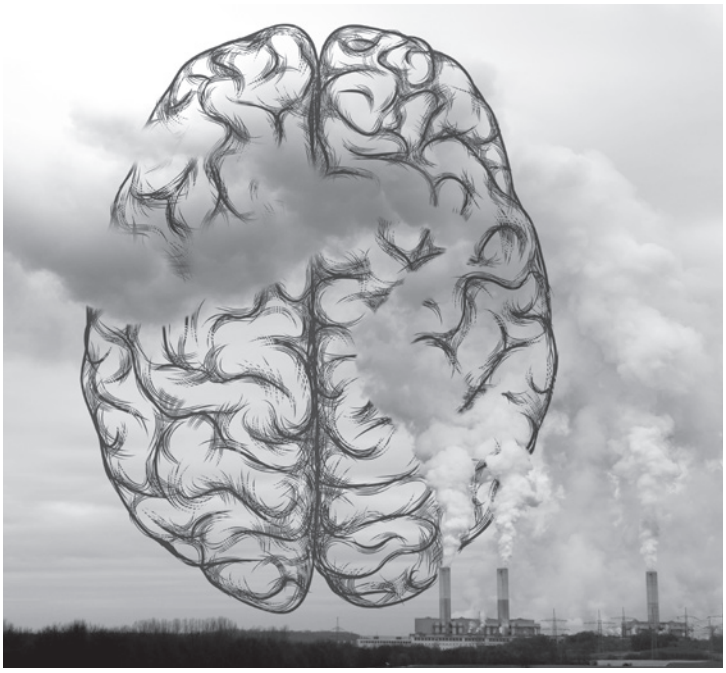
The air we breathe may hold more than just oxygen—it could carry long-term consequences for brain health.

With funding from Alzheimer's Disease Research, scientists are investigating how environmental pollutants, especially fine particles known as PM2.5, may contribute to Alzheimer's and other forms of dementia. These microscopic particles come from sources like fossil fuels, wildfires, and agricultural burning.

Jinkook Lee, PhD, found that long-term exposure to outdoor and indoor pollutants is linked to poorer cognition and faster decline, particularly in low-income communities with limited access to clean air.

Meanwhile, Justin Miller, PhD, is focusing on brain health in rural areas of the U.S., where wildfires and limited access to care pose serious risks. His research found that prolonged exposure to wildfire smoke may impact brain aging, and rural residents may be especially vulnerable due to fewer healthcare resources and limited air filtration.

From crowded cities to quiet towns, the effects of pollution are widespread and unequal. But thanks to your support, Alzheimer's Disease Research–funded researchers Drs. Lee and Miller are building the scientific foundation needed to reduce exposure, improve care, and advocate for healthier environments worldwide.



Your support helps researchers uncover how environmental toxins may contribute to dementia risk around the world.

IN THIS ISSUE

Alzheimer's Disease Research, a BrightFocus Foundation® Program
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PRESIDENT'S CORNER

Thanks to your support, we're making progress in the fight against Alzheimer's.

New research is uncovering how lifestyle factors may influence risk, and simple blood tests are showing promise for early detection.

Even pets are proving to reduce agitation and improve well-being for people living with the disease.

Your generosity is needed to keep momentum toward a cure.

With recent federal funding cuts, we need to make sure every promising research study can get the funding it deserves.

Thank you for being part of this movement. Together, we will find a cure!

Stacy Pagos Haller

A BLOOD TEST THAT COULD PERSONALIZE ALZHEIMER'S CARE

Blood tests are transforming how Alzheimer's is diagnosed, and soon, they may also help personalize treatment. Researchers at Washington University in St. Louis have developed a promising new test that detects a specific form of tau protein, MTBR-tau243, that is closely linked to the brain tangles seen in Alzheimer's.

In collaboration with the BioFINDER-2 Study in Sweden, Alzheimer's Disease Research–funded researcher Gemma Salvadó, PhD, helped validate the test. Unlike current blood tests, which primarily detect early amyloid changes, this next-generation test may show how far the disease has progressed—without the need for costly brain scans or spinal taps.

The test offers clearer insight into cognitive decline by identifying tau pathology more specific to Alzheimer's than other markers like p-tau217. It could also help doctors determine who may benefit most from anti-amyloid treatments like Leqembi and Kisunla.

There is hope for a future in which multiple blood tests help stage Alzheimer's, much like how oncologists stage cancer, to help guide the right treatment at the right time.

Alzheimer's Disease Research is proud to support these efforts to advance precision medicine for Alzheimer's.

A new blood test could help doctors better stage and treat Alzheimer's disease.

RESEARCHER SPOTLIGHT: Hannah Ennerfelt, PhD

Chronic inflammation may play a bigger role in Alzheimer's disease than previously thought. And part of the problem may begin outside the brain.

Alzheimer's Disease Research–funded researcher Hannah Ennerfelt, PhD, is exploring how the body's immune system worsens cognitive decline in aging and Alzheimer's. She is investigating whether a receptor called TREM1, found only on peripheral immune cells, amplifies damaging inflammation that contributes to memory loss and disease progression.

Hannah Ennerfelt, PhD

Her study uses a novel approach that targets immune mechanisms in the body, rather than relying on treatments that must cross the blood-brain barrier. This innovative strategy could open the door to more accessible and effective therapies.

By focusing on how peripheral immune responses impact the brain, Dr. Ennerfelt's research may uncover new ways to slow or even prevent Alzheimer's, without needing to deliver drugs directly into the brain.

THE HEALING POWER OF PETS

Pets can offer comfort and companionship for people living with Alzheimer's or other forms of dementia—whether they're at home or in a care facility.

From a dog snoozing at someone's feet to an aquarium in the corner of the room, animals can help reduce anxiety, depression, agitation, and loneliness. Their nonjudgmental nature makes them ideal companions for individuals who may struggle in traditional social settings.

One study conducted in an Alzheimer's care unit found that having a resident dog significantly reduced behavior problems during the day. Another study showed that the presence of fish tanks improved nutritional intake in individuals with Alzheimer's. Study participants gained weight and required less supplementation, which lowered care costs.

These same benefits can extend to pets at home, providing routine, exercise, and companionship. It's important to choose a pet that matches the person's needs and abilities, and to ensure there's help available for the pet's daily care, when needed.

From wagging tails to gently bubbling water, animals offer a special kind of support and can improve a person's quality of life in meaningful ways.

HELP FIGHT ALZHEIMER'S THROUGH A DONOR-ADVISED FUND

Would you like to gain the most favorable tax benefits while flexibly and easily supporting our mind-saving work? If so, consider giving through a donor-advised fund (DAF).

DAFs help simplify your charitable giving and put you in control of your philanthropic endeavors. They allow you to:

- Recommend grants as you choose
- Give on your own schedule
- Receive immediate and maximum tax deductions allowed by the IRS

Give quickly and easily from your DAF using our online portal at **brightfocus.org/DAF-ADR**. In just three clicks, you can conveniently facilitate gifts from your DAF and make your grant recommendation to Alzheimer's Disease Research.

To learn more about DAFs, please call us at **301-556-9362** or email **plannedgiving@brightfocus.org**.

Zoom In on Dementia & Alzheimer's

Sign up for our FREE monthly live conversation series with renowned research scientists and clinicians to keep you informed about the latest findings—from treatments and genetics to risk reduction, supplements, and more! You can also ask questions during a live Q&A. All sessions are recorded and available to watch on demand.

To register and catch up on previous episodes, visit: **brightfocus.org/ADRzoom**

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Please share this newsletter with someone you know who might be interested in learning about some of the latest advancements in research to diagnose, prevent, treat, and cure Alzheimer's disease.

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