

## Breathe Your Way to Brain Health: Surprising Insights into Alzheimer's Prevention

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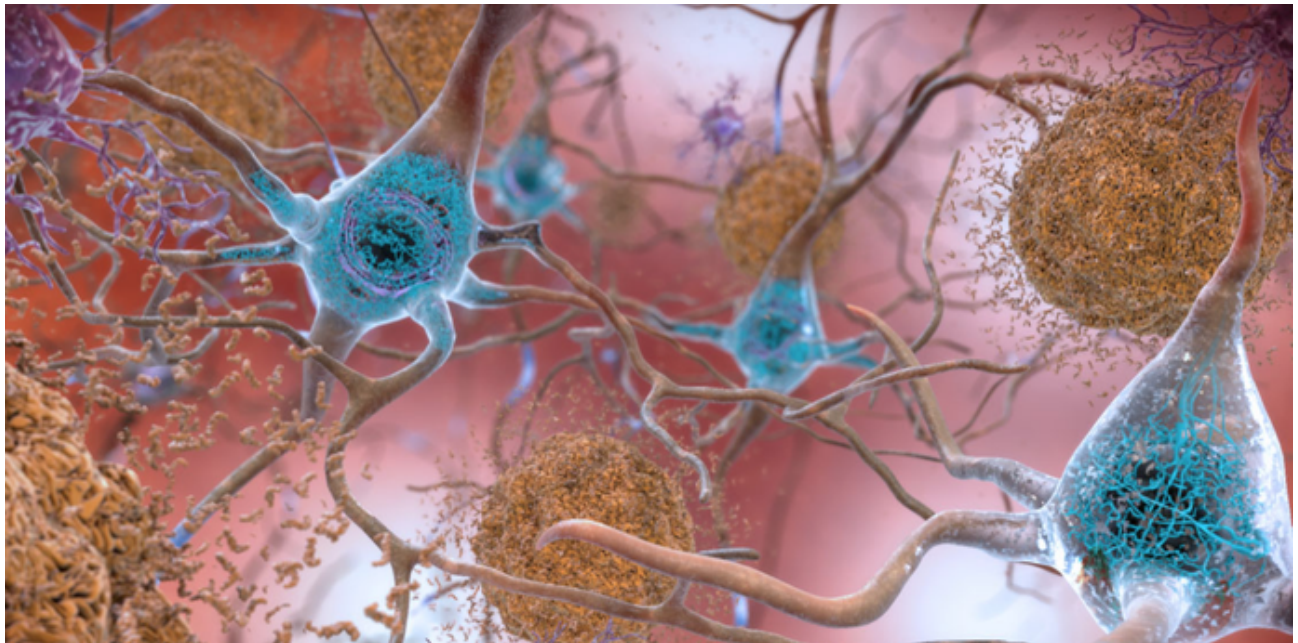
Slow, controlled breathing has long been recognised for its various benefits, from reducing stress to alleviating anxiety and chronic pain. However, recent research has unveiled a surprising and potentially groundbreaking advantage: protection against Alzheimer's disease.

Take a moment to pause and practice slow, deliberate breathing now. Inhale deeply to a count of five, then exhale slowly, matching the count of five. In just ten seconds, you may already feel a sense of relaxation and centeredness.

### Heart Rate Variability and Health

This kind of deep, slow breathing has been found to increase heart rate oscillations – making the time interval between heart beats more variable (hence a higher "heart rate variability"). Heart rate variability [HRV] is one of the key indicators of the health of your heart, which is why it's a key part of the Heart Health for Headteachers Programme.

But according to a study, dedicating 20 minutes to this practice a few times a week may shield you from other diseases, including Alzheimer's.



[Photo credit: NIH]

## Amyloid Beta: A Key Player in Alzheimer's

Although no definitive single cause has been identified for causing Alzheimer's, clumps of amyloid beta protein known as plaques have been found to be one of key features of the disease. Certain types of this protein can be particularly toxic when they clump together inside brain cells, causing them damage that affects their normal function and causes them to die.

Mara Mather, professor of gerontology, psychology and biomedical engineering at the University of Southern California is one of the authors of the study.

Mather and her team hadn't expected the levels of amyloid beta to be "affected so robustly".

Mather says. "This is an intriguing finding because, in healthy adults, lower plasma levels of amyloid beta are associated with lower risk of getting Alzheimer's disease later," she says. "Slow-paced breathing might have benefits not only for emotional well-being – but also for improving biomarkers associated with Alzheimer's disease."

The participants practicing breathing exercises designed to increase HRV lowered amyloid beta levels, marking a potential breakthrough in Alzheimer's prevention.

## Breathing for Brain Health

The exact mechanism remains uncertain, but one theory suggests that deliberate, slow breathing mimics the benefits of deep sleep, aiding in the removal of neurotoxic waste products linked to Alzheimer's development.

Heart rate variability appears to be a crucial factor, reflecting overall health and serving as an indicator for various conditions. Slow-paced breathing could benefit most individuals, enhancing emotional well-being and potentially improving Alzheimer's biomarkers.

While more research is needed, these findings offer hope in the fight against Alzheimer's. Adopting a regular practice of deliberate, slow-paced breathing might prove beneficial. The study did not specify the optimal breathing pattern, but it highlighted the importance of heart rate oscillations.

In conclusion, the simple act of slowing down and focusing on your breath may not only bring immediate calm but also provide a shield against the devastating effects of Alzheimer's disease.