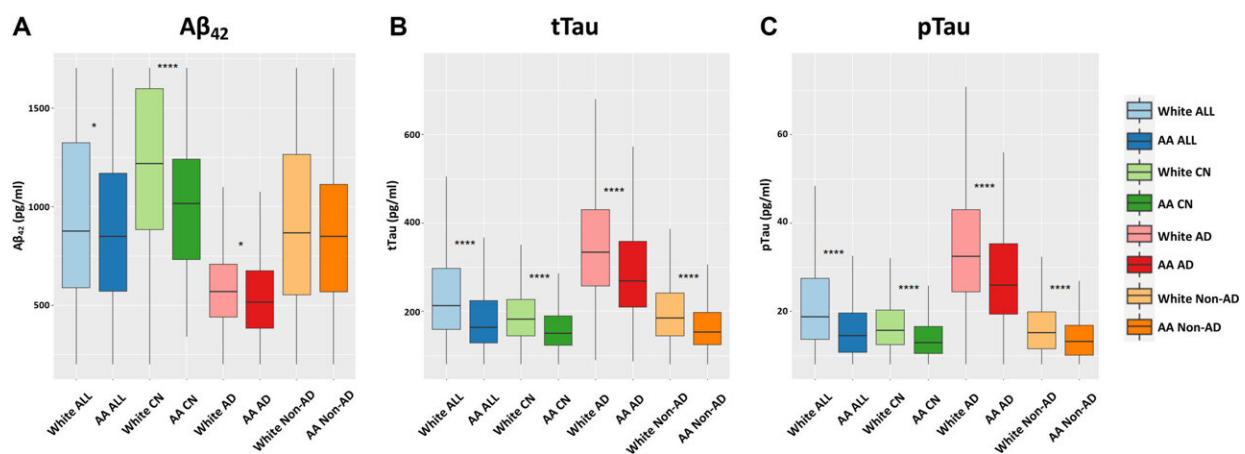# Study uncovers critical biomarker differences, advocates for more inclusive Alzheimer's diagnostics

September 6 2024, by Ronna Charles

Comparison of cerebrospinal fluid beta-amyloid 42, tTau, and pTau levels between white and African American (AA) individuals. Credit: *Annals of Neurology* (2024). DOI: 10.1002/ana.26960

The Emory Goizueta Brain Health Institute (GBHI) has prioritized involving African American volunteers in its research, working to create more inclusive tools for diagnosing Alzheimer's disease and related disorders. Today, about half of the Institute's new volunteers are African American.

These volunteers provide valuable data, including brain scans, blood

[samples](#), and [cerebrospinal fluid](#), which are used to advance research. The team is recognized worldwide for their work in understanding Alzheimer's through advanced techniques like proteomics, which studies the proteins in the body.

The team is led by Professor, Associate Director and Clinical Core Leader of the Alzheimer's Disease Research Center (ADRC), Director of the Cognitive Neurology Program (CNP), and Director of the Georgia Memory Net (GMN) initiative James J. Lah, MD, Ph.D., who has spent his career focused on better understanding and treating Alzheimer's disease (AD) and related memory disorders.

Another of Lah's major research efforts is the [Emory Healthy Brain Study (EHBS),](#) started in 2016, which also aims to include underrepresented groups in research and ensure the findings apply to a wide range of people. The goal is to find early markers of Alzheimer's in healthy middle-aged adults. So far, about 2,200 people have joined the study, which involves cognitive tests, heart health checks, blood and spinal fluid samples, and brain scans.

In his latest ADRC study, [published](#) in the *Annals of Neurology*, Lah looked at Alzheimer's biomarkers—specific indicators in the body—in both African American and white individuals.

The study found that some of these markers, especially tau proteins, were markedly lower in African Americans compared to white individuals among both patients with Alzheimer's and healthy volunteers. Some differences were only seen in people without Alzheimer's symptoms, where African Americans had much lower levels of Aβ42 biomarkers.

In the study, researchers found that fewer healthy African Americans without symptoms were found to have positive Alzheimer's biomarkers

compared to white participants. This suggests that while the risk of dementia is higher among African Americans, it might not be due to Alzheimer's but other factors.

In the following Q&A, Lah shares important insights into his research findings and how they may guide studies moving forward.

What is the significance of your recent research on Alzheimer's disease?

While we have learned a great deal about Alzheimer's disease, there are huge gaps in knowledge, particularly when it comes to understanding dementing diseases in minority populations. We have tended to extrapolate what we have learned in studies of largely non-Hispanic, white, U.S. populations and homogeneous European populations into non-white populations.

This lack of diversity is proving to be particularly problematic as we expand our studies on self-identified African American individuals. This applies at the most fundamental level, including the assumption that the higher rates of age-associated dementia among African Americans are driven by higher rates of Alzheimer's disease.

This may not be true, which in turn would mean that we really don't understand what is driving the 50%–100% higher rates of dementia among African American elders compared with non-Hispanic whites.

How could these findings change the approach to developing treatments for Alzheimer's?

Many trials have extremely low, ridiculously low, rates of African American participants. There are lots of reasons for this, but one of

those is that we are applying requirements for participation that work well for identifying appropriate white participants but are not appropriate when applied to African Americans or other non-white individuals.

Could you explain the implications of these findings beyond Alzheimer's?

Perhaps the most critical implication is that there may be targets for treating or preventing dementia in older African Americans that have nothing to do with amyloid or other Alzheimer's disease-specific pathology.

Until we understand what is responsible for causing higher rates of cognitive decline that we see among African Americans, we cannot develop approaches to reducing this critically important health disparity.

What are the next steps for your team considering these discoveries?

A long-term goal is to better define the causes of cognitive decline among African Americans, including the impact of medical comorbidities and the impact of lifelong exposures and experiences.

We are working to develop additional tests that will provide a more accurate, and perhaps race-agnostic, diagnosis of Alzheimer's disease. In addition to the traditional markers of AD such as amyloid and tau, we need to develop tools to predict who is going to develop cognitive decline due to AD or other causes.

This is a major long-term goal that requires that we establish large and diverse populations of research volunteers that we can follow and study

for many years.

More information: James J. Lah et al, Lower Prevalence of Asymptomatic Alzheimer's Disease Among Healthy African Americans, *Annals of Neurology* (2024). DOI: 10.1002/ana.26960

Provided by Emory University

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