Quest Diagnostics®

Advancing Alzheimer's detection through academic and diagnostic collaboration

Quest Diagnostics and the 1Florida ADRC collaborated on whether combinations of existing biomarker tests with or without PET can provide a more accurate, less invasive method to assess Alzheimer's risk—helping to set a standard for diagnostic excellence

Early and accurate diagnosis of Alzheimer's disease remains challenging.[1] Existing approaches such as positron emission tomography (PET) imaging and cerebrospinal fluid (CSF) analysis can be invasive, costly, and limited in availability.[1]

To improve the accessibility of amyloid pathology assessment, Quest and the 1Florida ADRC collaborated on a study. The research evaluated the accuracy of combining existing blood-based biomarker tests—plasma beta-amyloid 42/40 (Aβ42/40), p-tau217, and ApoE genotype—to predict amyloid PET positivity. This approach aims to provide a scalable, less invasive, and highly accurate assessment method.

THE CHALLENGE

Given the constraints of PET imaging and CSF analysis for confirming Alzheimer's disease pathology, the challenge was to validate a diagnostic approach that could deliver comparable accuracy while expanding access and reducing patient burden.

THE SOLUTION

Quest and the 1Florida ADRC collaborated on a study to evaluate the diagnostic accuracy of different combinations of existing blood-based biomarker tests for detecting amyloid pathology in intended-use patients. The study, which included 215 individuals with mild cognitive impairment or Alzheimer's disease, applied rigorous academic standards to assess real-world performance.[2] The combinations of existing tests included plasma beta-amyloid 42/40 (Aβ42/40), p-tau217, and ApoE genotype.

Two different protocols were evaluated:
One protocol utilized a 3-marker panel: amyloid beta (Aβ) 42/40, phosphorylated tau (p-tau) 217, and the ApoE4 proteotype.

The second protocol evaluated a combination of Aβ 42/40 and p-tau217.

The study demonstrated that scalable blood-based assessment, using combinations of existing tests, can deliver strong diagnostic accuracy outside of highly specialized settings.

Outcomes and impact: Performance with real-world implications

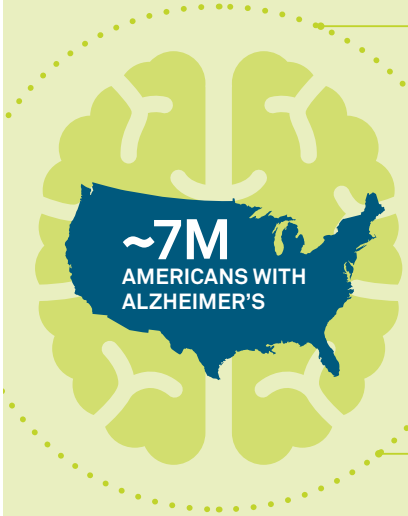
A combination of all three tests, Aβ42/40, p-tau217, and ApoE4 allele count, provided the best model, demonstrating high accuracy that met the performance thresholds outlined by the Alzheimer's Association and the Global CEO Initiative on Alzheimer's Disease for confirmatory use. These findings indicate that a blood-based assessment may help reduce reliance on more invasive or resource-intensive procedures, potentially expanding access to timely evaluation across a broader range of care settings.

Low indeterminate result rates further support clinical confidence, equipping physicians with clearer information to guide next steps in diagnosis, management, and research consideration. Together, the results demonstrate how scalable testing approaches can translate rigorous science into practical application.

BY THE NUMBERS

With nearly 7 million Americans currently living with Alzheimer's disease—a number projected to reach 14 million by 2060[3]—the need for scalable, accessible diagnostic approaches continues to grow.

The study highlights what can be achieved when national diagnostic scale aligns with academic research leadership. By pairing assay development expertise with clinical studies in well-characterized patients, the collaboration helps establish a pathway toward broader adoption of blood-based Alzheimer's assessment.



91% sensitivity and specificity of both tests

88% PPV / 91% NPV of 3-biomarker test

10% indeterminate result rate of 3-biomarker test

15% indeterminate result rate of 2-biomarker test

"This study demonstrates that scalable blood-based testing can meet rigorous standards for establishing Alzheimer's disease pathology, supporting diagnosis and advancing patient care for Alzheimer's disease."

– Michael Racke, MD, Senior Medical Director of Neurology, Quest Diagnostics

Learn more at **QuestDiagnostics.com/Business-Solutions/Hospitals-Health-Systems/Academic-Collaboration**

References

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3. Alzheimer's Association. Alzheimer's disease facts and figures. Published 2025. Accessed February 11, 2026. https://www.alz.org/alzheimers-dementia/facts-figures

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