

New tools for Alzheimer's may aid early diagnosis and treatment

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Curtailling the imminent rise in Alzheimer's disease (AD) will require early, accurate diagnostic tests and treatments, and researchers are closer to achieving these two goals. New findings in medical imaging, molecular analysis of neurological diseases, and development of treatments using mouse models were presented at Neuroscience 2012, the annual meeting of the Society for Neuroscience and the world's largest source of emerging news about brain science and health.

AD is the most common cause of dementia and currently affects 5 million people in the United States. By 2015, this number could increase to 13 million people.

Today's new findings show that:

- Changes in [brain function](#) occur many years before symptoms in people with AD; these changes could be detected by PET scans and might one day be used to identify people at risk for developing the disease (Lori Beason-Held, PhD, abstract 545.22, see attached summary).
- A new drug that targets biochemical changes in proteins improved symptoms and increased survival in a mouse model of AD, but just how it works is a mystery (Fred Van Leuven, PhD, abstract 416.08, see attached summary).
- An antibody-based probe that uses nanotechnology and [magnetic resonance imaging](#) can distinguish between diseased and non-diseased [brain tissue](#) and could lead to a test for early detection of AD (William Klein, PhD, abstract 753.21, see attached summary).
- AD, Parkinson's disease, and Dementia with Lewy Bodies have specific molecular signatures caused by epigenetics—mechanisms that determine how and when DNA is expressed—that

could assist in accurate diagnosis and earlier treatment (Paula Desplats, PhD, abstract 50.17, see attached summary).

- A new [mouse model](#) for AD gives researchers more control over an Alzheimer's-related protein in mice, and could lead to better research on effective treatments (Alena Savonenko, MD, PhD, abstract 416.04, see attached summary).

"Being able to detect AD early—perhaps even before symptoms begin—is an essential pre-condition if we are to develop effective treatments that slow or stop the changes that occur in the brain during Alzheimer's. Our studies in mice already tell us this," said press conference moderator Sam Gandy, PhD, MD, of the Mount Sinai School of Medicine in New York City, an expert on AD and dementia. "Being able to distinguish AD from other neurodegenerative diseases will help us give the right treatments to the right patients."

Provided by Society for Neuroscience

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