

# Why two new studies represent important breakthrough in Alzheimer's disease research

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Two different research groups have independently made the same important discoveries on how Alzheimer's disease spreads in the brain. The groups' findings have the potential to give us a much more sophisticated understanding of what goes wrong in Alzheimer's disease and, more importantly, what can be done to prevent or repair damage in the brain.

The Times reported on the research teams of Bradley T. Hyman, MD, Ph.D., at Massachusetts General Hospital in Boston, and Karen E. Duff, Ph.D., of Columbia University Medical Center in New York.

Each research group found that the Alzheimer's disease protein called tau can apparently spread from one part of the brain to other connected areas by effectively "jumping" from one nerve cell (neuron) to another. This is good news for scientists exploring pathways for treating Alzheimer's disease, which is now a growing [epidemic](#) with the aging of the [Baby Boomer](#) generation and the sixth leading cause of death in the U.S. If scientists can determine how tau jumps from neuron to neuron, Alzheimer's disease can potentially be stopped from spreading.

Results of Dr. Hyman's AHAF-funded research will be published later this month in the journal *Neuro*. Dr. Duff's research was published this week in [PLoS ONE](#).

The two research groups also made similar advances in how to study the development of the disease in mice, by making new "mouse models" that

better represent the human form of Alzheimer's at later stages of the disease. This will allow scientists to develop a much more detailed understanding of what goes awry with the spread of Alzheimer's disease over time, and what can be done to stop it.

It is important to note that these scientists' findings build on an idea studied by a number of others over the years—the idea that cells can infect neighboring cells. This concept—now significantly advanced by the work of Hyman and Duff—was previously pursued by several scientists including AHAF grantees Joanna Jankowsky, Ph.D., of Baylor College of Medicine in Houston, and Marc Diamond, M.D., of Washington University School of Medicine in St. Louis.

The announcement this week reminds us why early-stage basic research is so crucial to fighting costly and devastating diseases. Only with solid investment in this type of research will solutions ultimately be developed that improve the lives of people affected by this [disease](#).

On that front, important bipartisan legislation was unveiled this week by Senators Barbara Mikulski (D-MD) and Susan Collins (R-ME) and Representatives Chris Smith (R-NJ) and Ed Markey (D-MA). The Spending Reductions through Innovations in Therapies (SPRINT) Agenda Act of 2012 would ultimately reduce America's healthcare costs, by spurring public and private research funding and streamlining the regulatory review of treatments needed for Alzheimer's and other costly diseases. Read more information from Sen. Mikulski, and Sen. Collins.

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