

## Aging and the Brain



Someone develops Alzheimer's disease every 65 seconds in the United States, according to the Alzheimer's Association. A devastating illness that starts with memory loss and can strip a person's ability to communicate and function, Alzheimer's is the most common type of dementia. It afflicts an estimated 5.7 million Americans—a number projected to reach nearly 14 million by 2050—and takes an enormous financial and social toll worldwide. Age is the biggest risk factor.

Effective treatments are still lacking, but Bruce Yankner, MD, PhD, a Harvard Medical School professor of genetics and neurology, is hopeful, thanks to new studies underway at HMS and beyond.

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## Faculty First Person



**Lisa Goodrich, AB '91, PhD,  
Professor of Neurobiology**

We are equipped with the extraordinary ability to detect a wide range of sounds, from the whizz of a honeybee flying by to the sound of an airplane's engine. This amazing range of hearing ability often deteriorates with age, and specifically, our ability to detect softer sounds can decline as we grow older.

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## In the News

### The Hearing Molecule

Scientists at HMS found that TMC1, a protein discovered in 2002, allows the conversion of sound and head movement into nerve signals that travel to the brain—a signaling cascade that enables hearing and balance.

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### Double-Edged

A new study by HMS researchers at Massachusetts General Hospital reveals how amyloid beta, the protein deposited into plaques in the brains of patients with Alzheimer's disease, protects the brain from the effects of herpes viruses.

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### Aging Connection

A precise understanding of the links between aging and neurodegenerative disorders, including Alzheimer's and Parkinson's, has remained elusive, but research from HMS now provides new clues.

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### In Memoriam: Stuart H.Q. Quan

A distinguished and beloved colorectal surgeon and a generous supporter of graduate training in the Department of Neurobiology at HMS, Stuart H.Q. Quan died July 4 in Westhampton, New York.

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