

# AGING TODAY

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## THE STATES OF AGING BRAINS

What distinguishes normal cognitive decline from mild impairment or dementia?

Scientists attribute the normal cognitive decline that comes with age to a decrease in brain size and changes in the way that neurons (nerve cells) function. This decline is not considered dementia and does not interfere with a person's ability to perform activities of daily living or to maintain social connections. Many older adults adapt or develop ways to compensate for these slight losses, thus maintaining their ability to function reasonably well in their daily routines and social lives.

Most studies suggest that some cognitive decline occurring in elders is specific to particular parts of the cognitive process, said Hugh C. Hendrie of the Indiana University Center for Aging Research. "Some parts of cognition, such as language, are left quite intact, while other parts, such as the ability to recall a list of words, decline a little bit, even in healthy elders," he noted. "In some areas of cognitive function, there is no difference at all between the old and young."

### MILD IMPAIRMENT

Some people develop further cognitive and memory problems, called mild cognitive impairment (MCI), as neurons die. Those with MCI—which is three to four times more prevalent than Alzheimer's disease—have greater memory impairment for their age than their peers, yet certain skills, such as language, reasoning, problem solving and driving, may still be essentially intact. MCI does not interfere with elders' ability to perform daily activities, but may result in difficulties with such tasks as balancing a checkbook, organizing activities or making decisions. According to Hendrie, sequential neuropsychological testing can help determine whether a person has MCI: Those with MCI will show cognitive decline over time.

Although not all people with MCI also develop dementia, those who have this condition do have a higher risk for dementia than other adults. One study found that approximately 40% of people over age 65 who were diagnosed with mild cognitive impairment developed dementia within three years.

It is not until many nerve cells die that a person develops dementia. Not a single disease, dementia encompasses numerous brain disorders that affect intellectual and social function and interfere with activities of daily living. A diagnosis of dementia generally centers on the loss of two or more brain functions, such as memory, language, perception, reasoning or judgment.

Reversible causes of dementia include an accumulation of cerebrospinal fluid in the brain (normal-pressure hydrocephalus), thyroid dysfunction and certain vitamin deficiencies. Depression in older people can mimic cognitive decline. The Alzheimer's Association estimates that 4.5 million Americans have Alzheimer's disease and, based on census population projections, predicts that the number will reach 12 million to 16 million by 2050.

A 2004 report analyzing Medicare claims data, prepared by the Lewin Group for the Alzheimer's Association, showed that people with Alzheimer's account for 34% of Medicare spending, even though they constitute less than 13% of the population ages 65 and older. ❖

—Nancy Aldrich