

Alzheimer's Disease: The Basics

WHAT IS ALZHEIMER'S DISEASE?

Alzheimer's disease (AD) is an irreversible, progressive brain disease that slowly destroys memory, thinking skills, and, eventually, the ability to carry out simple tasks of daily living. Cognitive function declines as brain cells (neurons) malfunction, due to a buildup of plaques made of the protein amyloid beta and tangles made of the protein tau, and eventually die. It is estimated that more than 5 million Americans have Alzheimer's disease.

WHAT ARE THE SYMPTOMS?

Symptoms can include memory loss beyond what is expected for normal aging, such as forgetting recent events or repeating stories from a few minutes ago; difficulty carrying out tasks previously manageable, such as balancing a checkbook; and, as the disease progresses, wandering or getting lost in previously familiar areas. People with Alzheimer's disease may remember events from the distant past but not what they had for breakfast, and they may exhibit increased irritability and aggressive behavior.

WHAT ARE THE RISK FACTORS?

Advanced age is the number one risk factor. After the age of 65, the chance of developing Alzheimer's disease doubles every five years. The disease also has a genetic component. Having a family history of the disease doubles your lifetime likelihood of developing it. Very rarely (less than 1 percent of all cases of Alzheimer's disease), a genetic mutation may be responsible for causing the disorder, usually at an age younger than 65. Head injuries and cardiovascular factors, such as high blood pressure, diabetes, and high cholesterol, may be additional risk factors.

HOW IS IT DIAGNOSED?

No single test exists to diagnose Alzheimer's disease. Although new diagnostic methods are becoming more advanced (see bit.ly/NN-ADTests for a *Neurology Now* article on advances in brain imaging), diagnosis still relies on a doctor spending time with the patient and a family member to get a detailed medical history as well as conducting a neurologic examination and evaluation of memory, concentration, and other mental functions. A doctor can also help determine if cognitive problems are being caused by something else. For instance, depression could account for problems with concentration; sleep apnea, a treatable condition that deprives the brain of oxygen for short periods of time, can cause difficulties in thinking.

WHAT TREATMENTS ARE AVAILABLE?

Currently, no cure exists, but two types of drugs are prescribed to manage symptoms. Cholinesterase inhibitors—such as donepezil (Aricept), galantamine (Razadyne), and rivastigmine (Exelon)—are often prescribed in early and moderate stages. They prevent the breakdown of a chemical messenger called acetylcholine, which plays an important role in learning and memory. For moderate to severe stages, memantine (Namenda), which blocks the activity of glutamate (a chemical messenger in the brain involved in learning and memory), may be prescribed. These drugs may temporarily improve cognitive problems such as memory loss and confusion. Other medications may be used to treat related symptoms, such as depression or anxiety. Following a heart-healthy diet, exercising, and getting adequate sleep are also important in managing Alzheimer's disease.

For more *Neurology Now* articles on Alzheimer's disease, go to bit.ly/NN-Alzheimers.

For more resources and support, contact:

- ▶ Alzheimer's Association: alz.org; 800-272-3900
- ▶ Alzheimer's Disease Education and Referral Center: nia.nih.gov/alzheimers; 800-438-4380
- ▶ Alzheimer's Foundation of America: alzfdn.org; 866-232-8484
- ▶ The Association for Frontotemporal Degeneration: theaftd.org; 866-507-7222
- ▶ Lewy Body Dementia Association: lbda.org; 800-539-9767
- ▶ UsAgainstAlzheimer's: usagainstalzheimers.org; 202-349-3803

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