

Alzheimer's Disease: The Basics

WHAT IS ALZHEIMER'S DISEASE?

Alzheimer's disease is an irreversible, progressive brain disease that slowly destroys memory, thinking skills, and, eventually, the ability to carry out even simple tasks of daily living. It is the leading cause of dementia—the loss of memory and thinking ability that interferes with everyday function—and is universally fatal, usually within 10 years of onset. 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 typically include memory loss beyond what is expected for normal aging, such as forgetting recent events or repeating questions that were answered a few minutes ago; difficulty carrying out usual tasks, such as driving a motor vehicle or balancing a checkbook; and, as the disease progresses, the potential for irritability and suspiciousness. People with Alzheimer's disease gradually lose their independence such that they require increasing care; the end stage of the illness results in total dependence.

WHAT ARE THE RISK FACTORS?

Older 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 may have a genetic component. A person with a first-degree relative (parent or sibling) with the disease has double the 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. Cardiovascular factors, such as high blood pressure, diabetes, and high cholesterol, may be additional risk factors. Many individuals with Alzheimer's disease may have other illnesses, such as stroke, that can contribute to the dementia.

HOW IS IT DIAGNOSED?

No single test exists to diagnose Alzheimer's disease. Although new diagnostic methods are being developed (see [BrainLifeMag.org/BrainImagingTests](https://www.brainandlife.org/BrainImagingTests) for a *Brain & Life* 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 cognitive 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, and sleep apnea, a treatable condition that deprives the brain of oxygen for short periods of time, may 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 slow the course of Alzheimer's dementia. Other medications may be used to treat related symptoms, such as depression, irritability, or anxiety. Following a heart-healthy diet, exercising, remaining socially engaged, and getting adequate sleep are also important in managing Alzheimer's disease.

For more *Brain & Life* articles on Alzheimer's disease, go to [BrainLifeMag.org/Alzheimers](https://www.brainandlife.org/Alzheimers).

For more resources and support, contact:

- Alzheimer's Association: [alz.org](https://www.alz.org); 800-272-3900
- Alzheimer's and Related Dementias Education and Referral Center: nia.nih.gov/alzheimers; 800-438-4380
- Alzheimer's Foundation of America: [alzfdn.org](https://www.alzfdn.org); 866-232-8484
- The Association for Frontotemporal Degeneration: [theaftd.org](https://www.theaftd.org); 866-507-7222
- Lewy Body Dementia Association: [lbda.org](https://www.lbda.org); 844-311-0587 (for caregivers); 404-975-2322 (National Office)
- UsAgainstAlzheimer's: [usagainstalzheimers.org](https://www.usagainstalzheimers.org); 202-349-3803

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