

## About Alzheimer's disease

Alzheimer's disease is not a normal part of aging — it is a progressive brain disease that causes problems with memory, thinking and behavior. Alzheimer's is the leading cause of dementia, a general term for memory loss and other cognitive abilities serious enough to interfere with daily life. Although there is currently no cure for Alzheimer's, new treatments are on the horizon as a result of accelerating insight into the biology of the disease.

### Risk factors

Experts believe that Alzheimer's develops as a complex result of multiple factors rather than any one overriding cause. The only exception to this is inheriting one of three rare genes that directly cause the disease. These genes account for about 1 percent of all cases. The other 99 percent of Alzheimer's cases are believed to be caused by a wide range of risk factors. These include, but are not limited to, advanced age, family history of Alzheimer's and lifestyle factors such as diet, exercise and smoking.

### Symptoms

The symptoms of Alzheimer's disease are more than simple lapses in memory or age-related changes. People with Alzheimer's disease experience memory loss as well as difficulties communicating, learning, thinking and reasoning. These are problems severe enough to impact an individual's work, social activities and family life.

As the disease progresses, individuals may also experience changes in personality and behavior, such as anxiety, suspicion or agitation, as well as delusions or hallucinations.

To help identify problems early, the Alzheimer's Association has created a list of 10 Warning Signs of Alzheimer's disease ([alz.org/10signs](http://alz.org/10signs)). Different individuals may experience one or more of these signs to different degrees. If you notice any of them, consult a doctor.

### Diagnosis

A physician should be consulted about concerns with memory, thinking skills and changes in behavior so the cause can be determined. This is especially important because some dementia-like symptoms can be reversed if they are caused by treatable conditions, such as depression, drug interactions, thyroid problems, excess use of alcohol or certain vitamin deficiencies.

An early diagnosis allows individuals with dementia to take advantage of available treatments as soon as possible. It also allows time to plan for the future, including putting legal, financial and care plans in place, enroll in clinical studies and maximize quality of life.

There is no single diagnostic test that can determine if a person has Alzheimer's disease. However, diagnostic tools and criteria make it possible for physicians to make a diagnosis of Alzheimer's with an accuracy of about 90 percent. The diagnostic process may involve a thorough medical history, mental status and mood testing, a physical and neurological exam, and tests (such as blood tests and brain imaging) to rule out other causes of dementia-like symptoms. This process may take more than one day or visit.

### **Standard prescription treatments**

The U.S. Food and Drug Administration (FDA) has approved six drugs to treat cognitive symptoms of Alzheimer's disease. Four of these are in a class of drugs called **cholinesterase inhibitors**, which are prescribed to treat symptoms related to memory, thinking, language, judgment and other thought processes:

- Donepezil (Aricept®) is approved to treat all stages of Alzheimer's.
- Rivastigmine (Exelon®) is approved to treat mild-to-moderate Alzheimer's.
- Galantamine (Razadyne®) is approved to treat mild-to-moderate Alzheimer's.

Tacrine (Cognex®) was the first approved but was discontinued in 2016 in the United States because of associated side effects.

The fourth drug is an **NDMA** (*N-methyl-D-aspartate*) **receptor antagonist**. It is prescribed to improve memory, attention, reason, language and the ability to perform simple tasks. It can be used alone or with cholinesterase inhibitors.

- Memantine (Namenda®) is approved for the treatment of moderate-to-severe Alzheimer's disease.

The fifth drug is a combination of a cholinesterase inhibitor and an NDMA receptor antagonist.

- Memantine+donepezil (Namzaric®) is approved for the treatment of moderate-to-severe Alzheimer's disease.

## **Progression**

Alzheimer's disease typically progresses slowly in three general stages: early, middle and late (sometimes referred to as mild, moderate and severe in a medical context). Since Alzheimer's affects people in different ways, each person may experience symptoms — or progress through the stages — differently. On average, people age 65 and older live four to eight years after diagnosis, while some live with the disease for as long as 20 years. Outside of co-existing health problems such as heart disease or diabetes that can shorten lifespan, researchers do not know why some people live longer than others.

The thinking, memory, behavioral and functional problems associated with Alzheimer's reflect the areas of the brain affected by the disease. Areas involved with learning and memory are usually affected first. Later, regions involved in planning and carrying out tasks are affected. Ultimately, the brain regions involved in carrying out basic bodily activities such as walking and swallowing are impaired.

In general, those diagnosed when problems with thinking and memory are still quite mild are likely to live with the disease for many years. Those diagnosed when problems are more pronounced, such as when the individual struggles to remember where they are or to dress correctly for the season, are likely to live with the disease for fewer years. Those diagnosed when problems are severe, such as needing help with dressing and eating, generally live for the shortest period. Eventually, the person with Alzheimer's will need round-the-clock care. Alzheimer's disease is ultimately fatal.

## **Current Alzheimer's statistics**

- More than 5 million Americans have Alzheimer's disease.
- Alzheimer's is the sixth-leading cause of death in the United States.
- Every 66 seconds, someone in the United States develops Alzheimer's.
- One-third of people age 85 or older have Alzheimer's or another dementia.
- Approximately 200,000 Americans under age 65 have Alzheimer's disease.

TS-0035 | Updated March 2017