

Alzheimer's disease

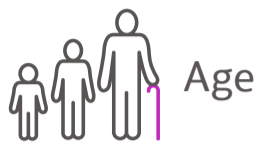
What is Alzheimer's disease?

Alzheimer's disease is a progressive, multifaceted and devastating neurodegenerative disease and the most common type of dementia in adults.¹

In Alzheimer's disease, changes in the brain disrupt communication between neurons, resulting in changes in memory, cognition and behavior.¹

Behavioral disturbances, such as hallucinations, delusions, agitation and aggression are common neuropsychiatric symptoms of Alzheimer's disease. These symptoms can become more prevalent as the disease progresses, resulting in a life-changing burden on patients, and their families and caregivers, affecting all practical, physical and emotional aspects of day-to-day life.²

Risk factors for Alzheimer's disease include:



Age



Genetics



Family history

Age is the greatest of these three risk factors, with risk increasing in older individuals. The majority of people with Alzheimer's disease are 65 and older.¹

However, Alzheimer's disease can also occur at a much younger age (early-onset).



Prevalence

As of 2024, it is estimated that approximately **55 million people** globally are living with dementia, with Alzheimer's disease accounting for about **60-70%** of these cases.³

Approximately 50% of people with Alzheimer's disease experience behavioral disturbances, such as psychosis, agitation and aggression, that can become more prevalent with increased disease severity.⁴

Impact

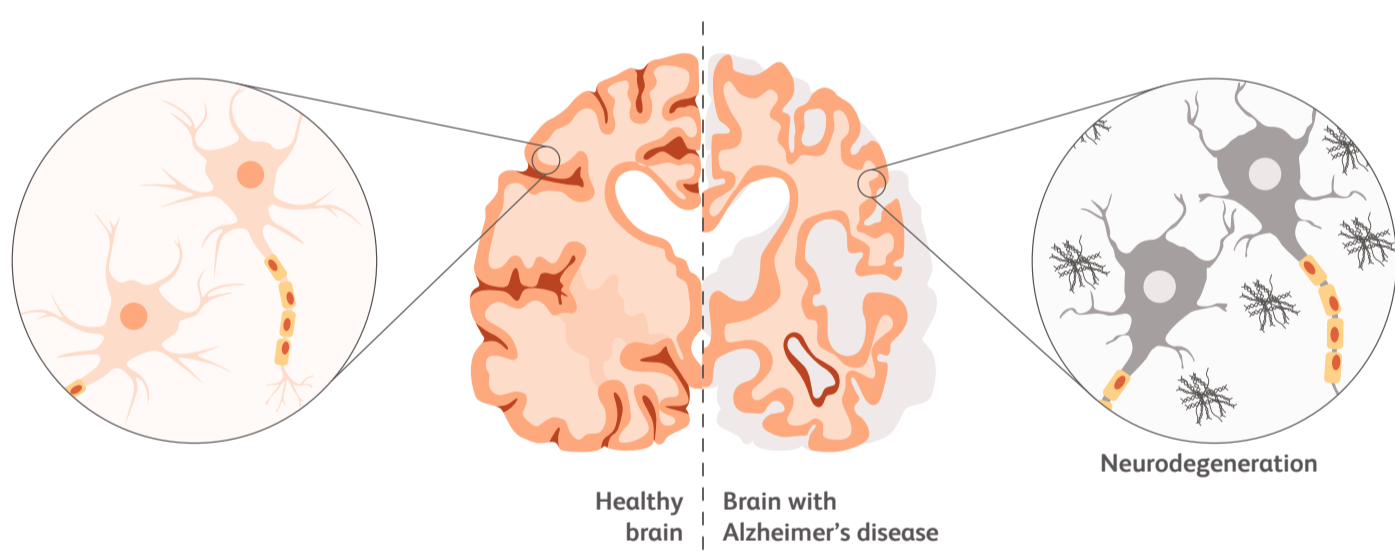
Alzheimer's disease has a **significant impact on the lives of those it directly affects as well as on their families, caregivers and friends**, resulting in considerable shifts in interpersonal relationships.¹

Individuals with moderate to severe Alzheimer's disease experience declines in judgment, orientation and their capacity to understand and communicate effectively. Personality and behavior are affected as well.¹

These cognitive and behavioral changes are very **physically and emotionally challenging** for caregivers to manage.¹ While providing care can be physically demanding, caregivers also experience the chronic stress and grief that come with watching a loved one slowly decline.

Changes in the brain

Significant changes occur in the brain in Alzheimer's disease, including the buildup of a protein known as beta-amyloid protein. These proteins can clump together and form **amyloid plaques**. Another change in the brain is the accumulation of an abnormal form of a protein known as phosphorylated tau, which can also clump together in groups called **neurofibrillary tangles**.¹



Beta-amyloid and tau play different roles in the disease:¹

- Outside neurons, buildups of beta-amyloid (plaques) may cause damage to neurons by disrupting communication between them.
- Inside neurons, buildups of phosphorylated tau (tangles) can block the movement of important nutrients and molecules needed for normal brain cell function and survival, while also damaging connections between neurons.

This ongoing damage results in neurodegeneration, with brain cells dying over time, and is the cause of the symptoms experienced in Alzheimer's disease.¹

Diagnosis & treatment

Diagnosing Alzheimer's disease involves a comprehensive assessment to rule out other causes of dementia. The diagnostic process may include:⁵



Medical history & symptom assessment



Physical exam



Neurological and cognitive tests



Lab tests assessing plasma and cerebrospinal fluid biomarkers



Brain imaging

Therapies that **slow or stop the progression** of the underlying disease (known as disease-modifying therapies) and therapies that **manage symptoms** are both key components of care and may be equally life-changing for patients and their families.

Recent advancements have led to therapies that may offer disease modification, including drugs targeting beta-amyloid and tau proteins, but there are still significant gaps in disease and symptom management.⁶

Currently, there are no treatments that prevent or cure Alzheimer's disease.⁶

Bristol Myers Squibb is investigating ways to provide a continuum of care in Alzheimer's disease, spanning from slowing progression of the disease to helping patients and their loved ones better manage symptoms on a day-to-day basis.

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 3. Dementia. World Health Organization. Accessed August 21, 2024. <https://www.who.int/news-room/fact-sheets/detail/dementia>.
 4. Murray PS, Kumar S, Demichele-Sweet MA, Sweet RA. Psychosis in Alzheimer's disease. *Biol Psychiatry.* 2014 Apr 1;75(7):542-52.
 5. Alzheimer's disease Diagnosis and treatment. Mayo Clinic. Accessed August 21, 2024. <https://www.mayoclinic.org/diseases-conditions/alzheimers-disease/diagnosis-treatment/drc-20350453>.
 6. Wu W, Ji Y, Wang Z, et al. The FDA-approved anti-amyloid-β monoclonal antibodies for the treatment of Alzheimer's disease: a systematic review and meta-analysis of randomized controlled trials. *Eur J Med Res.* 2023 Nov 28;28(1):544.