

# Alzheimer's Disease:

## A Progressive Brain Disorder that Impacts Thinking and Memory

### DEMENTIA VS. ALZHEIMER'S DISEASE

#### Dementia

Dementia is a term used to describe a **range of symptoms** associated with cognitive impairment severe enough to interfere with daily life.<sup>1</sup> It is caused by abnormal damage to brain cells that affects their ability to communicate, which can negatively impact:



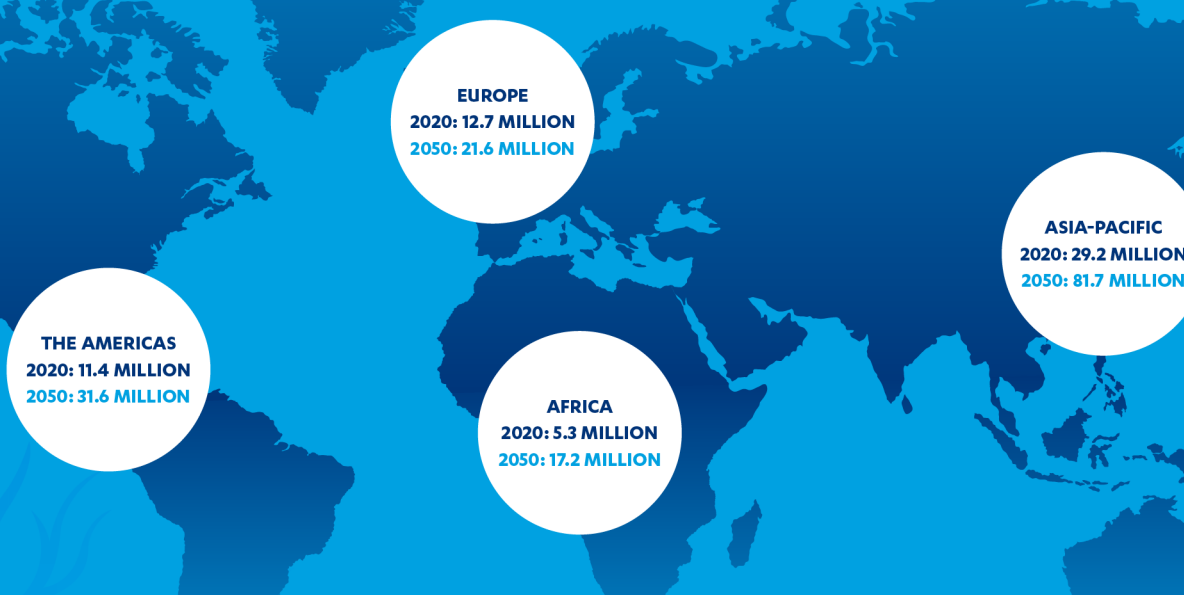
There are many types of dementia, including one of the most common forms, Alzheimer's disease, in addition to dementia with Lewy body, vascular dementia, and frontotemporal dementia.<sup>1</sup>

#### Alzheimer's disease: A type of dementia

Alzheimer's disease is a degenerative, progressive brain disease that accounts for **60-80% of dementia cases**.<sup>2</sup> Symptoms often begin with difficulty remembering new information and progress to a decline in cognitive ability and behavior changes, eventually causing loss of independent function.

Age is the greatest risk factor for developing Alzheimer's disease, however, **it is not a normal part of aging**.

### ESTIMATED DEMENTIA GLOBAL PREVALENCE<sup>3</sup>



### IMPACT & SYMPTOMS



Global healthcare costs for the treatment of Alzheimer's disease reached an estimated \$305 billion in 2020, leading to a focus on diagnosis and early detection worldwide.<sup>4</sup>



An estimated 50 million people worldwide live with Alzheimer's disease, and the number is expected to triple by 2050.<sup>3,5</sup>



Alzheimer's disease mostly affects adults aged 65+, but early-onset Alzheimer's disease can present at younger ages.<sup>2</sup>



Symptoms of the disease often begin with memory loss and worsen with disease progression.<sup>6</sup>

#### Symptoms include:<sup>6</sup>



Difficulty concentrating and multitasking



Loss of directional awareness



Impaired decision making



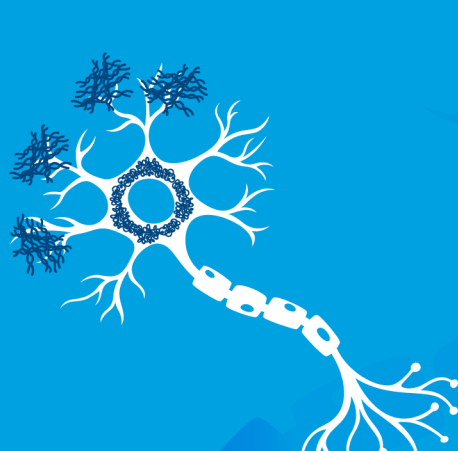
Having trouble remembering the names for people and everyday objects



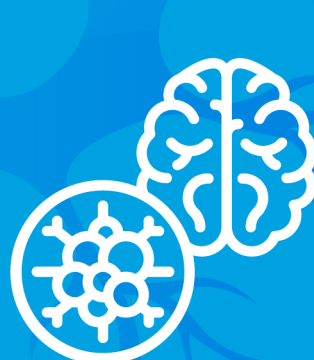
Changes in personality, mood, and social behaviors

### PATHOLOGY OF ALZHEIMER'S DISEASE

(THE ROLES OF BETA AMYLOID AND TAU)<sup>7</sup>



Researchers are examining which molecular and cellular changes may cause Alzheimer's disease and which may be a result of the disease. Emerging evidence suggests two proteins play a role: **beta amyloid** and **tau** may become toxic to the brain through complex interplay between the proteins.



Beta amyloid is thought to aggregate in the brain in between neurons and form plaques. This aggregation may lead to changes within brain cells, like the formation of an **abnormal type of tau protein**. The abnormal tau can accumulate inside neurons, eventually forming neurofibrillary tangles. These tangles can **interfere with the neurons' transport and communication systems**.

### DETECTION & TREATMENT



It may take several appointments and tests over many months before a diagnosis; however, a doctor can diagnose Alzheimer's disease based on a combination of results from neurological exams, neuropsychological evaluations, neuroimaging, and laboratory examinations of the blood and cerebrospinal fluid.<sup>8</sup>



There is no cure for Alzheimer's disease. Current treatments aim to manage symptoms, but they do not slow disease progression.

**Today, helping people with Alzheimer's disease and those at risk is at the forefront of biomedical research, with the goal of advancing innovations around Alzheimer's disease.**

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### References

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