

# Early Diagnosis of Alzheimer's Disease

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Alzheimer's disease (AD) is a type of dementia affecting many older adults each year. Currently, around 5.8 million Americans over the age of 65 are diagnosed with dementia due to AD and the number is projected to double by 2050. Cognitive deterioration due to AD may severely interfere with routines and daily activities and may cause a significant impairment in social or occupational functioning.



While the medical profession does not yet have a definitive test to diagnose AD in its earliest stages, we do have several clues about the kind of cognitive decline that occurs before the onset of AD. This prodementia phase is called Mild Cognitive Impairment (MCI) due to AD and can provide a window into early detection and diagnosis of AD.

During the MCI stage, mild symptoms of cognitive impairment appear. These changes in cognitive functioning are not normal in comparison with the person's previous functioning level, age and educational background. The observed symptoms usually cause *concern* in the patient or other people who know the patient well. The impairment can be detected in one or more cognitive areas:

- **Memory and Learning:** Memory impairment is considered the most common symptom of MCI due to AD. The person shows difficulty in recalling recent or remote events and/or learning new information. Yet, not all MCI patients show memory impairment and they may show deficits in other cognitive domains instead.
- **Executive Functions:** This deficit may cause problems in reasoning, problem-solving, planning, organization, etc. For example, some difficulties are observed in performing tasks that used to be performed easily and well, such as paying bills, preparing a meal, or shopping.
- **Attentional Control:** MCI patients may show difficulty in sustaining their attention for a long time or flexibly switching attention across tasks when needed.
- **Language:** Different aspects of language may be impacted in MCI patients. The patient may have difficulty naming objects, comprehending the words of others, speaking with fluency or expressing needs and thoughts.
- **Visuospatial Skills:** In some cases, there are mild impairments in understanding what is seen around the person and interpreting their spatial relations.

For cognitive impairments to be considered at the MCI phase, they should be *sufficiently mild* allowing patients to still *function independently* in daily activities. The person can generally maintain daily independence with minimal aids or assistance.

Lastly, these clinical symptoms can be caused by other reasons that are not Alzheimer's, including vascular (blood flow), traumatic, or other medical issues. It is important to visit an expert to rule these out and confirm that the MCI is not due to other diseases. Early identification of AD can help health care providers provide treatments and recommend lifestyle changes, helping to improve quality of care, reduce dementia-related negative behaviors, and relieve care partner stress and depression.