
What is Alzheimer's Disease?

Alzheimer's disease is a form of brain degeneration in which abnormal particles called neurofibrillary tangles and neuritic plaques form in the brain and destroy healthy neurons (brain cells). These abnormalities tend to settle in brain areas that control the ability to learn a new fact and remember it 30 minutes, or a day later, a skill we refer to as "memory".

Who Gets Alzheimer's disease?

The two main categories of Alzheimer's disease (AD) are familial and sporadic. Familial Alzheimer's disease refers to a genetic form of the disease that is transmitted from one generation to the next. Only 5 percent of all cases of Alzheimer's disease have been associated with a genetic component. These individuals come from families in which as many as half of the members develop Alzheimer's disease. Fortunately, this form of the disorder is rare. The remaining 95 percent of Alzheimer's disease cases are sporadic, or randomly occurring in the population.

A variety of "risk factors" have been identified in individuals diagnosed with AD. In fact, it is quite common to pick up a newspaper or to turn on the TV and hear about the newest "risk factor" that has been identified. While some of these factors may turn out to be useful, it is important to remember that much of the research that has been done in this area is retrospective research. This means that the research is conducted by comparing a group of patients diagnosed with AD with a group of healthy age-matched adults. These types of analyses provide information about the number of individuals diagnosed with AD who have a certain characteristic compared with the healthy individuals. While these results are useful in directing future research studies, they do not provide information about cause and effect. What is needed is a prospective study in which large numbers of individuals are followed from an early age to the age at which AD develops.

What is dementia?

The term "dementia" is used to describe the gradual deterioration of "intellectual" abilities and behavior that eventually interferes with customary daily living activities. "Customary daily living activities" include balancing the checkbook, keeping house, driving the car, involvement in social activities, and working at one's usual occupation. There may also be changes in personality and emotions. Contrary to popular belief, dementia is not a normal outcome of aging, but is caused by diseases that affect the brain. Dementia influences all aspects of mind and behavior, including memory, judgment, language, concentration, visual perception, temperament, and social interactions. Although dementia symptoms are eventually obvious to everyone, in the early stages special evaluations are necessary to demonstrate the abnormalities.

In people over the age of 65, the most common cause of dementia is Alzheimer's disease. Alzheimer's disease is a form of brain degeneration in which abnormal particles called neurofibrillary tangles and neuritic plaques form in the brain and destroy healthy neurons (brain cells). These abnormalities tend to settle in brain areas that control the ability to learn a new fact and remember it 30 minutes, or a day later, a skill we refer to as "memory". Years of studying dementias have shown that Alzheimer's disease is not the only type of brain degeneration. There are other forms of brain degeneration, many of which can affect people in their 50's or even 40's.

Signs & Symptoms

Symptoms that signal the onset of dementia are usually subtle and may not be noticeable for a number of years. In fact, earlier signs usually are identified in retrospect, and often by someone other than the patient. Most people think of memory loss as the central symptom in dementia. While most dementias affect memory, some forms of dementia do not initially involve memory loss. Other areas that may be affected include language, perceptual skills, reasoning, and personality. This is especially true in individuals whose symptoms begin before age 65.

Ten Warning Symptoms of Alzheimer's disease or dementia.

- 1. Memory Loss That Affects Job Skills** It's normal to occasionally forget assignments, colleagues' names, or a business associate's telephone number and remember them later. Those with a dementia, such as Alzheimer's disease, may forget things more often and not remember them later.
- 2. Difficulty Performing Familiar Tasks** Busy people can be so distracted from time to time that they may leave the carrots on the stove and only remember to serve them at the end of the meal. People with Alzheimer's disease could prepare a meal and not only forget to serve it but also forget they made it.
- 3. Problems with Language** Everyone has trouble finding the right word sometimes, but a person with Alzheimer's disease may forget simple words or substitute inappropriate words, making his or her sentence incomprehensible.
- 4. Disorientation of Time and Place** It's normal to forget the day of the week or your destination for a moment. But people with Alzheimer's disease can become lost on their own street, not knowing where they are, how they got there or how to get back home.
- 5. Poor or Impaired Judgment** People can become so immersed in an activity that they temporarily forget the child they're watching. People with Alzheimer's disease could forget entirely the child under their care. They also may dress inappropriately, wearing several shirts or blouses.
- 6. Problems with Abstract Thinking** Balancing a checkbook may be disconcerting when the task is more complicated than usual. Someone with Alzheimer's disease could forget completely what the numbers are and what needs to be done with them.
- 7. Misplacing Things** Anyone can temporarily misplace a wallet or keys. A person with Alzheimer's disease may put things in inappropriate places: an iron in the freezer, or a wristwatch in the sugar bowl.
- 8. Changes in Mood or Behavior** Everyone becomes sad or moody occasionally. Someone with Alzheimer's disease can exhibit rapid mood swings (from calm to tears to anger) for no apparent reason.
- 9. Changes in Personality** People's personalities ordinarily change somewhat with age. But a person with Alzheimer's disease can show drastic personality changes, becoming extremely confused, suspicious, or fearful.

1. Loss of Initiative It's normal to tire housework, business activities, or social obligations, but most people regain their initiative. The person with Alzheimer's disease may become very passive and require cues and prompting to become involved.of

Diagnosis & Treatment

Making a Diagnosis

The absolute diagnosis of Alzheimer's disease can only be made at autopsy. However, physicians at specialized centers can diagnose Alzheimer's disease with 90 percent certainty based on clinical information. To make the diagnosis the following may need to be conducted:

1. A medical history and neurological exam
2. Neuropsychological testing
3. Neuropsychological testing involves a careful analysis of a person's memory, problem solving, language, attention, and visuospatial ability.
4. Basic blood tests
5. Blood tests may be used to help exclude other causes of memory difficulties. For example, a person with a thyroid disorder or a vitamin deficiency may have problems with his or her memory.
6. Brain scans
7. A brain scan such as an MRI or a CT scan may need to be done in certain patients to detect brain tumors or strokes. These disorders may cause memory problems.

Treatments for Alzheimer's Disease

Many treatments are being evaluated, but as of yet, there is no cure. There are a number of medications currently approved by the Food and Drug Administration (FDA) for the treatment of mild to moderate Alzheimer's Disease. Donepezil (Aricept), Rivastigmine (Exelon) and Galantamine (Razadyne) are medications which block the enzyme, acetylcholinesterase, which is one of the enzymes responsible for degrading acetylcholine. Acetylcholine is a neurotransmitter in the brain, which is crucial for the formation of memories. Clinical Drug Trials with these medications show that cognitive abilities can be improved over baseline for up to 6-12 months after starting a cholinesterase inhibitor. These medications have also been shown to improve some of the behaviors associated with Alzheimer's disease, such as apathy, delusions, and disinhibition. Common side effects seen with all of the cholinesterase inhibitors include nausea, diarrhea, and dizziness.

Another medication with a different mechanism of action has been approved by the FDA for the treatment of Alzheimer's disease. Memantine (Namenda) is a medication which helps improve cognition by blocking the overstimulating effects of excessive glutamate, a mechanism which appears to be a major factor in cell injury and death in Alzheimer's disease. Common side effects seen with memantine include dizziness, confusion and headache. Researchers are also trying to develop other methods of blocking the product of amyloid plaques or enhancing their clearance from the brain.

There are also a number of psychiatric medications, which are used to treat the behavioral disturbances which commonly develop in the later stages of Alzheimer's disease such as depression, apathy, aggressive behavior, delusional thinking and disinhibition. Medications used to treat these behavioral and psychiatric symptoms include antidepressants, antipsychotic and mood stabilizing medication

Living with Alzheimer's Disease

The term "dementia" is used to describe the gradual deterioration of "intellectual" abilities and behavior that eventually interferes with customary daily living activities. "Customary daily living activities" include balancing the checkbook, keeping house, driving the car, involvement in social activities, and working at one's usual occupation. There may also be changes in personality and emotions. Contrary to popular belief, dementia is not a normal outcome of aging, but is caused by diseases that affect the brain.

Dementia influences all aspects of mind and behavior, including memory, judgment, language, concentration, visual perception, temperament, and social interactions. Although dementia symptoms are eventually obvious to everyone, in the early stages special evaluations are necessary to demonstrate the abnormalities.

In people over the age of 65, the most common cause of dementia is Alzheimer's disease. Alzheimer's disease is a form of brain degeneration in which abnormal particles called neurofibrillary tangles and neuritic plaques form in the brain and destroy healthy neurons (brain cells). These abnormalities tend to settle in brain areas that control the ability to learn a new fact and remember it 30 minutes, or a day later, a skill we refer to as "memory". Years of studying dementias have shown that Alzheimer's disease is not the only type of brain degeneration. There are other forms of brain degeneration, many of which can affect people in their 50's or even 40's.