

# Alzheimer's Disease

*What are the signs and what is it?*

In order to understand Alzheimer's disease, it is a good idea to recognize that there are several different kinds of dementia, of which Alzheimer's disease is the most prevalent. In this lesson, we will learn about the different kinds of dementia and how Alzheimer's disease differs from the other types of dementia out there.

## ALZHEIMER'S DISEASE STATISTICS

Alzheimer's disease is a progressive, degenerative disease of the brain, and the most common form of dementia. Some things you should know about Alzheimer's disease:

- There are now more than 5 million people in the United States living with Alzheimer's disease at any given point in time.
- Every 72 seconds, someone develops Alzheimer's disease.
- By 2050, the estimated range of Alzheimer's disease prevalence will be 11.3 million to 16 million Americans, with an average estimate of 13.2 million unless a cure or prevention is found.
- In a 1993 national survey, 19 million Americans said they had a family member with Alzheimer's, and 37 million said they knew someone with Alzheimer's.
- One out of eight people age 65 and older has Alzheimer's and nearly one out of two over age 85 has it. A small percentage of people as young as their 30's and 40's get the disease.
- A person with Alzheimer's disease will live an average of eight years and as many as 20 years or more from the onset of symptoms.
- More than 7 of 10 people with Alzheimer's disease live at home. Almost 75% of the home care is provided by family and friends. The remainder is "paid"



care costing an average of \$12,500 per year. Families pay almost all of that out-of-pocket.

- Half of all nursing home residents suffer from Alzheimer's disease or a related disorder. The average cost for nursing home care is \$42,000 per year but can exceed \$70,000 per year in some areas of the country.
- The average lifetime cost per patient is \$174,000. Alzheimer's Disease as compared with other Types of Dementia

### *There are several different types of dementia:*

- Alzheimer's Disease - most common cause of dementia.
- Multi-Infarct Dementia – second most common type of dementia
- Dementia With Lewy Bodies
- Binswanger's Disease
- Pick's Disease
- Parkinson's dementia

### *Curable Types of Dementia:*

- Dementia due to hypothyroidism
- Dementia due to cardiovascular disease
- Dementia due to B1 deficiency
- Dementia due to folate deficiency

- Dementia due to hypoglycemia
- Dementia due to hypercalcemia

**Rare Types of Dementia:**

- Dementia related to Pick's disease
- Dementia due to Moyamoya disease
- Dementia due to syphilis
- Dementia due to hypoglycemia
- Aids dementia complex
- Creutzfeldt- Jakob disease related dementia
- Dementia pugilistica
- Benson's syndrome related dementia
- Porphyria related dementia

As you can see, not all cases of dementia have the same type of underlying etiology, even though many have the same symptoms.

**Let's look at Alzheimer's dementia, its causes and findings:**

Alzheimer's disease (AD) affects the mental abilities including memory, language, and cognition. It has many of the same symptoms listed in Lesson Two and eventually leads to progressive dementia and death. Alzheimer's disease begins in the late middle age years or in the elderly, although there is a rare familial form of the disease in which the sufferers begin to develop the dementia in their 30s. The hallmark of Alzheimer's disease in the brain is the finding of plaques in the brain and what are known as neurofibrillary tangles. Alzheimer's disease can be thought of as a normal part of aging but nothing could be further from the truth. In addition, the reversible aspects or other causes of dementia need to be ruled out before it can be directly established as coming from Alzheimer's disease. These include certain medical conditions like hypothyroidism, brain tumors, multi-infarct dementia or Huntington's disease. Early stages of the disease can be mistaken and written off as dementia, simple forgetfulness or normal senility.

**Symptoms of Alzheimer's Disease**

- Early symptoms
  - Forgetfulness
  - Loss of concentration
  - Forgetting names
- Progressing symptoms

- Memory Loss
- Forgetting the ability to do everyday tasks
- Problems thinking
- Difficulty with speech
- Difficulty reading
- Impaired vision
- Impaired spatial skills
- Poor judgment
- Confusion
- Disorientation

- Later symptoms
  - Indifferent attitude
  - Apathy
  - Anxiety
  - Depression
  - Aggression
  - Wandering behaviors
  - Personality disintegration
  - Cognitive disintegration
  - Suspiciousness
  - Hostility
  - Aggression
  - Loss of speech
  - Difficulty swallowing
  - Incontinence
  - Drooling



**DIFFERENTIATION BETWEEN ALZHEIMER'S DEMENTIA AND VASCULAR DEMENTIA**

The second most common type of dementia is vascular dementia. As vascular dementia progresses, it acts in a similar manner to Alzheimer's dementia. There are some crucial differences, however.

Vascular dementia is caused by narrowing of the arteries leading to the brain, especially the small arteries within the brain. At various times, these arteries get blocked off, causing a small "mini-stroke" that may not be noticeable in any other way except for a sudden memory loss or sudden changes in the way

the brain functions. Gradually, other vessels become involved, leading to what can be termed a “stepwise dementia” where the changes are small each time but occur relatively suddenly. When a person has enough of these little “infarcts” or blood clots, he or she will develop what becomes full-blown dementia. It looks similar, if not identical, to Alzheimer’s disease in the later stages but tends to be irregular in its appearance, with the parts of the brain involved depending upon where the infarct is located.

## BLOOD TESTS TO RULE OUT CORRECTABLE CAUSES OF DEMENTIA

Too often, dementia is written off as being Alzheimer’s dementia. Because there is no blood test or X-ray in the early stages to rule out Alzheimer’s dementia, you need to rule out other causes of reversible dementia which can be cured if identified and treated properly. The tests to rule out correctable causes of dementia include:

- T4, T3 and TSH to rule out hypothyroidism
- Oxygen level to rule out cardiovascular causes of dementia.
- Carotid ultrasound to rule out correctable cardiovascular causes.
- B1 level to rule out this as a cause of dementia
- Folate level to rule out folate dementia
- Blood sugar or hemoglobin A1C to check for hypoglycemia as a cause of dementia.
- Calcium level to rule out hypercalcemia as a cause of dementia.

These blood and X-ray tests can effectively tell you whether or not there is a reversible cause of dementia.

## TESTS FOR ALZHEIMER’S DISEASE

There is no single test that can diagnose Alzheimer’s disease, although imaging technology designed to detect Alzheimer’s plaques and neurofibrillary tangles is quickly becoming more powerful and precise. Still, a comprehensive diagnostic workup by a skilled physician can pinpoint the cause of Alzheimer’s-like symptoms with over 90% accuracy. Diagnosis of Alzheimer’s disease should include the following:

- Medical history -- This should include questions about past illnesses, prior injuries and surgeries, and current chronic conditions in order to identify other

possible causes for Alzheimer’s-like symptoms. For instance, if you suffered a serious head injury any time in your past, it could account for the problems with memory or concentration that you’re currently experiencing. If your loved one has heart disease, that could be reducing blood flow to the brain and causing forgetfulness.

- Medication history -- This should include allergies and a list of current medications and dosages. Not only will this inform any future prescription decisions; it also might reveal a medication interaction or overdose that accounts for your loved one’s confusion and other symptoms.
- Mood evaluation -- The evaluation should include an assessment for anxiety or depression, which can create Alzheimer’s-like symptoms in older people as well as occur concurrently with Alzheimer’s or another dementia. Depression, in particular, can result in a set of symptoms collectively known as pseudodementia. If a mood disorder is detected, it can be treated alongside other disorders, such as Alzheimer’s.
- Mental status exam -- To assess memory, concentration, and other cognitive skills. The mental status exam is a research-based set of questions that results in a score that indicates a general level of impairment. If you or your loved one scores high on a mental status exam, there is less of a chance that Alzheimer’s is the culprit; another (possibly treatable) condition may be responsible for the symptoms. However, highly educated individuals have scored high on mental status exams even though they do have Alzheimer’s disease.
- Complete physical exam -- To assess hearing, vision, blood pressure, pulse, and other basic indicators of health and disease. A current physical exam can detect acute medical conditions such as an infection that might be causing Alzheimer’s-like symptoms.
- Appropriate laboratory tests -- These will vary according to your loved one’s medical history and current symptoms. Blood tests are the most common laboratory tests ordered. For example, if you are exhibiting pre-diabetic symptoms, a blood glucose test would be ordered. Aside from blood tests, if your loved one’s symptoms came on suddenly and include severe confusion, a urinalysis would probably be conducted to rule out a urinary tract infection.
- Neurological exam -- This should include an exam-

ination of the motor system (movement), reflexes, gait (walking), sensory functioning, and coordination in order to detect problems with the nervous system that may be causing problems with thinking and behavior.

- Imaging procedures -- Detailed pictures of the brain, such as a CT scan (computed tomography), an MRI (magnetic resonance imaging), or a PET scan (positron emission tomography) to identify changes

in brain structure or size indicative of Alzheimer's, or to look for other abnormalities that might account for Alzheimer's-like symptoms.

The goal of a diagnostic workup is to explore every possible cause for the person's symptoms and to address any reversible condition or treatable problem. If a cause is not reversible or treatable, then the goal is to help the individual manage the symptoms through medical treatments or behavior management.

