

Alzheimer's Information

THE CENTER FOR NEUROSCIENCES FOUNDATION



EACH BRAIN MATTERS
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Overview

Dementia is a term for memory loss and loss of other cognitive abilities severe enough to interfere with daily life. Alzheimer's is the most common form of dementia, accounting for 60-80% of dementia cases. It is a progressive disease that commonly begins with mild memory loss symptoms and gradually worsens over time. There is no single expected outcome for patients with dementia, as the progression and severity of symptoms varies greatly. Alzheimer's is the 6th leading cause of death in the United States. After diagnosis the average lifespan is 8 years (but can be up to 20 years). Unfortunately, there is currently no cure for Alzheimer's. However there are treatments for symptoms that can slow the progression of the disease. There is also an abundance of research focused on finding ways to treat the disease, delay the onset, and prevent it from developing.

There is no clear known cause of Alzheimer's, but several environmental, lifestyle, and genetic factors can contribute. Age is the biggest risk factor for Alzheimer's and the overwhelming majority of patients are over 65 years old, although about 5% of patients have early-onset Alzheimer's and begin to notice symptoms in their 40s-50s.

Alzheimer's is a neurodegenerative disease - meaning there is continuous, irreversible damage to brain cells. As the damage spreads, cells lose their ability to function and eventually die causing permanent brain damage. As the disease worsens, more cells die and brain tissue shrinks. It is believed that the damage to the brain begins a decade or more before noticeable symptoms arise. There are two primary culprits that cause cell damage: **Plaques** are deposits of a protein that builds up between nerve cells and **Tangles** are twisted fibers of another protein that build up inside of cells. Most people develop plaque and tangles with age, but Alzheimer's patients tend to develop far more and it typically begins in areas important for memory.

Symptoms

Symptoms can vary greatly from person to person, and as the disease progresses. The most common and well-known symptom of Alzheimer's is memory loss; however, the disease presents in a variety of other ways as well. Some symptoms to be aware of include:



Loss of memory



Language problems



Difficulty in doing simple tasks



Disorientation in time and space



Loss of reasoning capacity



Difficulty in having elaborate thoughts



Loss of objects



Mood changes



Behavioural changes



Loss of initiative

Diagnosis

There is no specific test that confirms a diagnosis of Alzheimer's. Physicians will consider several test results and information from the patient before making a judgement on whether the cause of symptoms is Alzheimer's. Doctors are almost always able to determine if a patient has dementia and they are often able to identify if Alzheimer's is the cause, but the diagnosis can only be completely accurate after death. The following tests can be used in order to distinguish Alzheimer's from other dementias:

Physical and neurological exam

The physician will perform a physical exam and is likely to specifically be testing reflexes, muscle tone, senses of sight and hearing, coordination, balance, and the ability to walk.

Lab tests

Blood tests enable doctors to rule out other potential causes of memory loss and confusion.

Mental status and neuropsychological tests

Doctors will conduct a brief mental status test to assess memory and thinking skills. They may also suggest a more extensive assessment which will provide information about a patient's mental function compared to others their age.

Brain Imaging

Different brain imaging techniques are used to look for abnormalities related to other conditions such as strokes or tumors which can cause similar symptoms. Brain imaging includes:

MRI- Magnetic resonance imaging

- MRI is used to rule out other conditions that may be causing cognitive decline. MRI can also be used to assess shrinkage in different areas of the brain.

CT- Computerized tomography

- A CT is commonly used to rule out tumors, strokes, and head injuries.

PET- Positron emission tomography

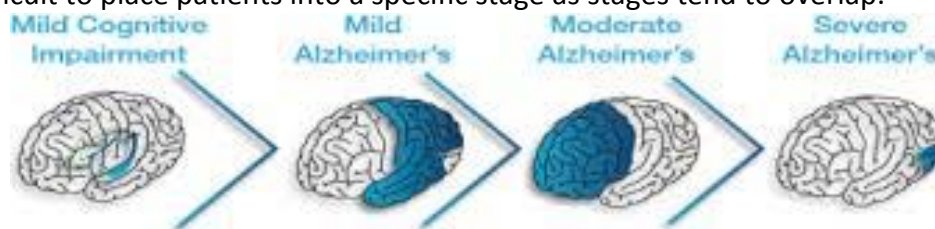
- This can pin point parts of the brain that aren't functioning well.

Cerebrospinal Fluid

- Typically, this is only used in special circumstances such as rapid progression of symptoms or early onset. The spinal fluid is tested for biomarkers that indicate likelihood of Alzheimer's.

Stages

Alzheimer's is a very personal disease and each patient will have a different pathway as their disease advances. In some cases, symptoms progress rapidly, while others notice changes more gradually. Over time the disease will progress through 3 stages; mild, moderate, and severe. It is often difficult to place patients into a specific stage as stages tend to overlap.



Mild Cognitive Impairment

Mild cognitive impairment causes cognitive changes that are serious enough to be noticed by the individuals experiencing them or to other people, but the changes are not severe enough to interfere with daily life or independent function. People with MCI are more likely to develop Alzheimer's disease or other dementias than people without MCI. However, MCI does not always lead to dementia.

Mild Alzheimer's

Mild Alzheimer's is the earliest stage and most patients are diagnosed at this time. In this stage symptoms will be present, but not severe. Patients may have trouble with handling money and paying bills, getting lost, repeating questions, and personality and behavior changes. They may still function independently and be able to partake in normal daily activities.

Moderate Alzheimer's

The moderate stage is usually the longest stage of the disease, where patients require a greater level of care and typically decline at a faster rate than during the other 2 stages. In this stage damage to the brain is more prominent and symptoms are more severe. Damage can spread to areas of the brain involved in language, reasoning, sensory processing, and conscious thought. Memory loss is more severe and patients may have trouble recognizing loved ones and carrying out simple tasks. In addition, patients may experience hallucinations, delusions, or paranoia.

Severe Alzheimer's

Eventually the damage can spread throughout the brain and brain tissue shrinks significantly. Patients with severe Alzheimer's cannot communicate and are entirely dependent on others for care. As memory and cognitive skills worsen, there may also be significant personality changes.

Caregiving

Caring for someone with Alzheimer's can be a challenge physically, emotionally, and financially. It often involves a major shift in relationships, when a child begins caring for a mother or a spouse begins caring for their spouse. It can be very challenging to care for someone who can be irritable, paranoid, or not even believe they need care. Many caregivers deal with guilt, frustration, and grief over loss of the relationship. It can cause social isolation. It is important that you find support. This can be through family members, friends, or support groups.



Caregiver burnout is common in people who care for someone with Alzheimer's. It can occur when supporting the person with Alzheimer's overshadows addressing your own needs, either physically, emotionally, or both. Don't be afraid to ask for help. Many people don't know enough about caregiving to know how to offer to help. It is up to you to reach out and ask for it. Reach out to friends or family that may be able to give you a break from time to time.

Often, the behavioral changes that come with Alzheimer's are the biggest challenge for families and caregivers to manage. Some ways to cope with your loved one's new behaviors include:

- **Monitor personal comfort.** Check for pain, hunger, thirst, constipation, full bladder, fatigue, infections and skin irritation. Maintain a comfortable room temperature.
- **Avoid being confrontational** or arguing about facts. For example, if a person expresses a wish to go visit a parent who died years ago, don't point out that the parent is dead. Instead, say, "Your mother is a wonderful person. I would like to see her too."
- **Redirect the person's attention.** Try to remain flexible, patient and supportive by responding to the emotion, not the behavior.
- **Create a calm environment.** Avoid noise, glare, insecure space and too much background distraction, including television.
- **Allow adequate rest** between stimulating events.
- **Provide a security object.** Holding a familiar object can be calming to those in later stages of dementia, this can be any object that seems to lift a patient's mood such as blanket or memorabilia from their past.
- **Acknowledge requests**, and respond to them.
- **Look for reasons behind each behavior.** Consult a physician to identify any causes related to medications or illness.
- **Explore various solutions.**
- **Don't take the behavior personally**, and share your experiences with others.

A change in your loved one's symptoms may mean their Alzheimer's has progressed. It is important to make an appointment with the doctor as soon as possible. That way, the doctor can make an informed decision about whether it's time to adjust the treatment plan.

Treatment

Although there is a great deal of research being done on Alzheimer's, there is currently no cure for the disease. However, providers can work with patients to develop an individualized treatment plan to help manage symptoms. Due to the complexity of the disease and the variance in patients, there is not one correct form of treatment. An individualized treatment plan may include medications for symptoms, life style changes, and a healthy exercise and nutrition regimen.

Research

Without clinical trials, there can be no better treatments, no prevention and no cure for Alzheimer's disease. Scientists work to find enhanced ways to treat diseases, but improved treatments cannot become a reality without testing in clinical trials with human volunteers.

Recruiting and retaining trial participants is now the greatest obstacle, other than funding, to developing the next generation of Alzheimer's treatments. Individuals with dementia, caregivers and healthy volunteers are all urgently needed to participate in clinical trials focused on Alzheimer's and other dementias.

Participating in clinical trials has the potential to help both the individual participant and others who have Alzheimer's disease or are at risk of developing it. By participating:

- You can play a more active role in your own health care.
- You can gain access to potential treatments before they are widely available.
- You can receive expert medical care at leading healthcare facilities — often free of cost — while participating in important medical research.
- You can help future generations by contributing to Alzheimer's research.

Participating in clinical studies gives us optimism for today and promise for the future. They provide many participants with access to cutting-edge treatments and expert medical care. And some day they will lead us to the end of Alzheimer's.

Trialmatch is a free clinical studies matching service that connects individuals with Alzheimer's, caregivers, and healthy volunteers to current studies. You can find this tool on www.alz.org.

Sources

Alzheimer's Association, www.alz.org

National Institute on Aging, www.nia.nih.gov

Mayo Clinic, www.mayoclinic.org