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Alzheimer's Disease

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What Is Alzheimer's Disease?

Alzheimer's disease (often shortened to "Alzheimer's" or "AD") is a brain disease usually occurring in older people, although it is not a normal part of aging. Alzheimer's disease causes a decline in thinking, memory, and language, personality changes, and certain changes in the brain, that gradually get worse over time. AD eventually results in the loss of ability to carry out the simplest daily tasks.

Alzheimer's disease is the most common cause of dementia in old age. "Dementia" refers to a decline in multiple areas of mental function that interferes with ability to carry out daily activities. Not all people with dementia have Alzheimer's disease. The term "Alzheimer's disease" is reserved for patients with characteristic changes in the brain that are the hallmarks of the disease. These brain changes include damage and loss of nerve cells and their connections, tangled fibers, protein clumps, and inflammation. AD begins deep in the brain, as many as 10 to 20 years before symptoms appear, and gradually spreads to other parts of the brain.

The progression of Alzheimer's disease occurs in seven stages, according to the Alzheimer's Association (http://www.alz.org/alzheimers_disease_stages_of_alzheimers.asp). Stage 1 is "no impairment." Stage 2 is marked by "very mild decline;" the person experiences memory lapses but no symptoms are detected by others or by a medical examination. Such symptoms may be due to age-related changes and not AD. Stage 3 is "mild cognitive decline," when others begin to notice a person's memory problems. AD may be diagnosed in some, but not all people with mild cognitive decline. In stages 4-7, the person goes from moderate to severe decline. The progression and course of AD vary widely from individual to individual. Expert medical opinion should be sought to diagnose Alzheimer's disease since other conditions requiring different treatments may mimic AD or coexist with it.

History

Alzheimer's disease is not a new condition; the frequent association of dementia and old age was known to ancient Greek and Roman physicians. However, the characteristic brain lesions found in people with AD were first described by the German physician Alois Alzheimer and by noted psychiatrist Emil Kraepelin in the early 20th century. Alzheimer published a classic paper in 1907 describing the tangled fibers and clumps that are now called "neurofibrillary tangles" and "amyloid plaques," in the brain of a woman in her fifties with dementia.

Alzheimer's disease, long considered an obscure neurologic condition, came to the research forefront in 1976 with the publication of a landmark editorial by Robert Katzman, a leading AD researcher. In this paper, Katzman argued that "Alzheimer disease" and "senile dementia" were the same disease and a leading cause of disability and death in the U.S. Before this time, neither

Alzheimer's disease nor senile dementia had been listed as causes of death in U.S. vital statistics reports.

Alzheimer's disease is becoming an issue of increasing public health importance as people live longer and many countries have aging populations. According to the Alzheimer's Association, more than 5 million people are living with Alzheimer's in the U.S.; by 2050, as many as 16 million may be affected. For the first time since the U.S. government's Healthy People reports began in 1979, Healthy People 2020 includes goals and objectives for Alzheimer's disease.

(HealthyPeople.gov. Dementias Including Alzheimer's Disease. Accessed 1/13/2011 from <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=7>)

What is dementia?

Dementia is a general term for a decline in multiple areas of mental functioning such as memory, reasoning, and language so extensive that it interferes with daily life. Dementia is not a specific disease, but rather a group of symptoms that often accompanies a disease or condition.

Two of the most common causes of dementia in older people are Alzheimer's disease and vascular dementia. The latter condition is caused by a series of strokes or changes to the brain's blood supply. A person may have both AD and vascular dementia.

Other conditions causing memory loss or dementia include:

- Drug side effects
- Chronic alcoholism
- Brain tumors/infections/blood clots
- Vitamin B12 deficiency
- Dehydration
- High fever
- Some thyroid, kidney, or liver disorders
- Severe depression

Identifying the cause of dementia is important because this may affect the treatment and prognosis.

Who gets Alzheimer's disease and why?

The exact cause of Alzheimer's disease is not known. Researchers believe that Alzheimer's disease usually results from the combination of several genetic, familial, and environmental factors. Age, family history, and genetics are key risk factors.

The greatest single risk factor for AD is advanced age. For unknown reasons, symptoms usually begin after age 60. Alzheimer's disease is found in about 1 in 8 people aged 65 to 74. After age

65, the number of people affected doubles every five years; AD affects nearly half of all people over 85.

A person's genetic makeup may also increase his or her risk of AD. In the common form of Alzheimer's disease that develops after age 60, certain genes may place a person at higher risk of AD, but do not make developing the disease inevitable. People with one or two copies of a gene called APOE-e4, for example, are at increased risk of developing the disease.

A rare, early-onset form of AD appears in family clusters and begins between the ages of 30 and 60. Most cases of early-onset AD are believed to result from genetic mutations; early-onset AD accounts for less than 5 percent of cases.

Other risk factors for AD are less well established, and may include severe or repeated head trauma, female gender (partly because women live longer), and cardiovascular disease. Good health habits and remaining physically and mentally active may delay or slow the course of the disease.

What is mild cognitive impairment?

People with mild cognitive impairment (MCI) have problems with memory, language, or other mental functions that are noticeable to others and can be detected by testing, but are not serious enough to interfere with daily activities. People with MCI have an increased risk of developing Alzheimer's disease, especially if their main problem is memory (amnesic MCI).

How do I know if I have/ a loved one has Alzheimer's disease?

Mild memory problems are sometimes an early sign of Alzheimer's disease, but may simply be part of the aging process. The Alzheimer's Association has compiled a checklist of 10 warning signs, available online at http://www.alz.org/alzheimers_disease_10_signs_of_alzheimers.asp. AD should be diagnosed only by a physician; local chapters of the Alzheimer's Association can help locate an experienced practitioner.

What can I expect if I am/a loved one is diagnosed with Alzheimer's disease?

Alzheimer's disease is a progressive disease for which there is no known cure. Certain medications or other interventions may help relieve symptoms or even slow the progression of the disease. The type, progression, and severity of mental changes in AD vary greatly. The course of the disease from the time of diagnosis varies according to age, sex, severity at diagnosis, and presence of other health conditions. People may live from three to twenty years after diagnosis. A four-minute captioned video is available at <http://www.nia.nih.gov/Alzheimers/ADVideo/>.

How can I search for Alzheimer's on the Web?

Selected Web sites (see below under **Important Sites**)

A good place to begin researching Alzheimer's on the Web is the U.S. National Library of Medicine's MedlinePlus at <http://www.nlm.nih.gov/medlineplus/alzheimersdisease.html>. This site has clean, well-designed screens and a wide variety of materials including videos, easy-to-read flyers, and information in multiple languages.

The Alzheimer's Association at <http://www.alz.org/> and ADEAR at <http://www.nia.nih.gov/Alzheimers/> are also good one-stop shops.

The resources listed above and some other good Alzheimer's Web sites are listed under **Important Sites**. They give overviews of AD, answer frequently asked questions, and tell what to expect in the early, middle, and late stages. They can point the user to the latest research and news, help locate doctors and services, and discuss the latest treatments and clinical trials. They teach caregivers how to help patients and alleviate the stress of caregiving. These Web sites also help patients, families and friends stay socially connected through e-mail, discussion groups, forums, blogs, and social media.

Commercial sites also sell products; users must be careful to distinguish educational content from promotional materials.

Search Engines

Many users prefer to begin their quest with a search engine such as Google (<http://www.google.com>) or Yahoo (<http://www.yahoo.com/>) to search the entire Web, or a portal such as Healthfinder.gov (<http://www.healthfinder.gov/>) may be used to search a group of Web sites. Google Scholar (<http://scholar.google.com/>) is useful when searching for scholarly articles, and Google Books (<http://books.google.com/>) when looking for books. The user may wish to restrict his/her search to the most recent five years.

Recommended Search Terms:

- Alzheimer's Disease
- Alzheimer's
- Alzheimer Disease
- Primary Senile Degenerative Dementia
- Alzheimer type dementia
- Senile dementia
- Presenile dementia

Abbreviations Used in this Section (optional)

AD: Alzheimer's Disease

Medical Specialties (optional)

Geriatrics, Neurology, Psychiatry

Important Sites:

One-Stop Shops

Alzheimer's Association <http://www.alz.org/>

Founded in 1980, the Alzheimer's Association is the major U.S.-based voluntary health organization devoted to Alzheimer's disease. The Association has local chapters and support groups across the U.S., and is a key resource for people interested in Alzheimer's information, care, education, research, and advocacy. Users can sign up for weekly e-news (sent by e-mail or RSS feeds.), and participate in the Association's online communication forum. The stages of Alzheimer's disease are described at

http://www.alz.org/alzheimers_disease_stages_of_alzheimers.asp

ADEAR. Alzheimer's Disease Education and Referral Center.

<http://www.nia.nih.gov/Alzheimers/>

ADEAR, founded in 1990 is a service of the National Institute on Aging, one of the U.S. National Institutes of Health. It was established by the U.S. Congress to be an AD information center for health professionals and laypeople. ADEAR is one of the best sources for reliable, unbiased information on all aspects of Alzheimer's disease. Most resources are free; U.S.-government produced publications are not copyrighted and may be freely reproduced.

MedlinePlus: Alzheimer's Disease. <http://www.nlm.nih.gov/medlineplus/alzheimersdisease.html>

MedlinePlus is the "gold standard" for reliable consumer health information on all topics, not just Alzheimer's diseases. Includes news, information on health conditions, a medical dictionary, drug directory, videos, interactive tutorials and other information for various audiences, including easy-to-read and other languages. Medlineplus has both non-copyrighted (U.S. government-produced – may be freely reproduced) and copyrighted materials.

Other Good Sites

AARP. Alzheimer's disease: Learning Center. <http://healthtools.aarp.org/learning-center/alzheimers-disease>

Alzheimer's Disease International. <http://www.alz.co.uk/>

Alzheimer's Society (United Kingdom). <http://www.alzheimers.org.uk/>

Alzheimer Society (Canada). <http://www.alzheimer.ca/english/index.php>

Mayo Clinic. Alzheimer's Disease. <http://www.mayoclinic.com/health/alzheimers-disease/DS00161>

Includes multimedia materials, blog, newsletter.

MedicineNet.com. Alzheimer's Disease Center.

<http://www.medicinenet.com/alzheimers/focus.htm>

Merck Manual Home Edition. Alzheimer's Disease.

<http://www.merckmanuals.com/home/sec06/ch083/ch083c.html#sec06-ch083-ch083c-522>

National Institute of Neurological Disorders and Stroke (NINDS): Alzheimer's Disease.

<http://www.ninds.nih.gov/disorders/alzheimersdisease/alzheimersdisease.htm>

NIH Senior Health: Alzheimer's Disease. <http://nihseniorhealth.gov/alzheimersdisease/toc.html>

U.S. government site – text size may be adjusted and accompanying audio turned on/off.

Includes videos.

WebMD. Alzheimer's Disease Health Center. <http://www.webmd.com/alzheimers/default.htm>

Hotlines

Many hotlines now use Skype. Skype allows computer users to download free software from <http://www.skype.com/> and to make video phone calls free of charge if your computer has a webcam (a device that displays your picture and lets you see the person you are calling on the computer screen).

1(800) 272-3900 (Alzheimer's Association). 24-hour helpline. A Skype link appears on the association Web site.

1(800) 438-4380 (ADEAR). A Skype link appears on the ADEAR Web site.

1(866) AFA-8484 (Alzheimer's Foundation of America). Talk to a social worker. Skype link available.

Publications on the Internet

Alzheimer's Association. Stages of Alzheimer's.

http://www.alz.org/alzheimers_disease_stages_of_alzheimers.asp

Alzheimer's Association. 10 Signs of Alzheimer's.

http://www.alz.org/alzheimers_disease_10_signs_of_alzheimers.asp

Healthy People 2020. Dementias Including Alzheimer's.

<http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=7>

National Institute on Aging. Alzheimer's Disease Fact Sheet.

<http://www.nia.nih.gov/Alzheimers/Publications/adfact.htm>

National Institute on Aging. Alzheimer's Disease: Unraveling the Mystery (4-minute captioned video). <http://www.nia.nih.gov/Alzheimers/ADVideo/>

National Institute on Aging. Understanding Alzheimer's disease (easy to read) <http://www.nia.nih.gov/Alzheimers/Publications/UnderstandingAD/>

PBS. The Forgetting: A Portrait of Alzheimer's. (award-winning video and educational materials). <http://www.pbs.org/theforgetting/>

Patient Support Organizations/Discussion Groups

Alzheimer's Association. Support Groups. http://www.alz.org/mglc/in_my_community_support.asp#connect_online

WebMD Alzheimer's Community. <http://exchanges.webmd.com/alzheimers-exchange>