Alzheimer’s disease is the leading cause of dementia in the elderly. In 1996, Alzheimer’s disease (AD) affected an estimated 4 million people in the United States. The duration of survival following a diagnosis of Alzheimer’s disease depends critically on the subject’s age at diagnosis. Alzheimer’s disease is the leading cause of dementia. In the United States it has been estimated that 10 percent of people over 65 years old and nearly half of those over 85 have AD.

Persons diagnosed with Alzheimer’s disease at age 65 could anticipate a 67 percent reduction in life span compared to those without Alzheimer’s disease, while persons diagnosed at age 90 could anticipate a 39 percent reduction in life span.

Statistical analysis found that the median survival times ranged from 8.3 years for people diagnosed at age 65 to 3.4 years for people diagnosed at age 90.

There are no significant differences between men and women in survival after diagnosis of the disease.

It is projected that in the next 50 years, the prevalence of Alzheimer’s disease will quadruple, with approximately 1 in 45 Americans living with the disease.

A definition of Alzheimer’s disease
Alzheimer’s disease (AD) was named for Dr. Alois Alzheimer, who first described the disease in 1907. Alzheimer’s disease gradually causes personality changes and problems with judgment, planning and concentration. In its later stages, it also affects physical abilities. The disease’s causes, cures and preventions are generally unknown.

In general, Alzheimer’s disease can be defined as: A disease that is a progressive, fatal illness that causes areas of the brain to shrink. The resulting symptoms start with memory loss and other cognitive deficits, advancing to major personality changes and eventual loss of control over bodily functions.

Alzheimer’s disease is a form of degenerative brain disease rarely occurring before the age of 50 and resulting in progressive mental deterioration with disorientation, memory disturbance and confusion. AD leads to progressive dementia, often accompanied by dysphasia and/or dyspraxia. The condition may also give rise ultimately to spastic weakness and paralysis of the limbs, epilepsy and other variable neurological signs. The disease takes from a few months to four or five years to progress to complete loss of intellectual function.

Remember the role of chemical messengers: Another change that Alzheimer’s disease causes is a change in the brain’s chemical messengers. The chemical messenger acetylcholine is particularly important. Acetylcholine is believed to be involved in the working of brain cells responsible for memory, thinking and judgment. Individuals with Alzheimer’s disease have decreased levels of acetylcholine. There are some medicines that can increase the amount of acetylcholine in the brain by stopping it from being broken down. This can help the brain’s cells work better and slow the progression of Alzheimer’s disease symptoms.

Causes of Alzheimer’s disease
Alzheimer’s disease is complex. It begins to damage the brain years before symptoms appear. Most scientists believe that AD begins with the buildup of beta amyloid protein in the brain. Why pathological changes occur in the brain leading to such profound damage is an area of scientific investigation that is making considerable progress, and there are a number of theories about why it happens.

Current insights into causes of Alzheimer’s disease include:
- Age, which is the biggest risk factor for Alzheimer’s.
  - At 65 to 70 years, the risk is about 1.5 percent.
  - At 70 to 74 years the risk is about 3.5 percent.
  - At 75 to 79 years the risk is about 6.8 percent.
  - The risk of Alzheimer’s nearly doubles every five years, so by the age of 95, nearly one half will have Alzheimer’s disease.

The genetics of Alzheimer’s disease
Diseases such as cystic fibrosis, muscular dystrophy and Huntington’s disease are single-gene disorders. If a person inherits the gene that causes one of these disorders, he or she will usually acquire the disease. AD, on the other hand, is not caused by a single gene. More than one gene mutation can cause AD, and genes on multiple chromosomes are involved.

The two basic types of AD are familial and sporadic. Familial AD (FAD) is a rare form of AD, affecting less than 10 percent of AD patients. All FAD is early-onset, meaning the disease develops before age 65. It is caused by gene mutations on chromosomes 1, 14 and 21. Even if one of these mutated genes is inherited from a parent, the person will almost always develop early-onset AD. This inheritance pattern is referred to as autosomal dominant inheritance. In other words, all offspring in the same generation have a 50/50 chance of developing FAD if one of their parents had it.

Genetics play a vital role as more researchers learn about AD. Little by little they have become aware of the important function genes play in the development of Alzheimer’s disease. Recent excitement has centered on the discovery of the relationship between the apolipoprotein E (apoE) gene and Alzheimer’s disease.

Genetic risk factors as a cause of Alzheimer’s disease are an area of intense investigation. Having a parent or sibling with Alzheimer’s increases the risk by two to three times that a person is likely to develop the disease.

Risk factors
While scientists do not yet fully understand what causes Alzheimer’s disease, they lean towards several factors that can affect each person differently. Age is the most important known risk factor for Alzheimer’s disease; the number of people with the disease doubles every five years beyond age 65. Other risk factors include:
- Down syndrome.
- The loss of estrogen production.
- The lack of a formal education.
- Severe head trauma resulting in unconsciousness.
- Retrograde amnesia.
- Longevity and familial history.
- Aluminum toxicity.
- Exposure to certain viruses.

Brain damage
Where amyloid is deposited in the brain immediately after a head injury, a positive link to dementia has been found; the same is true of head trauma following vascular damage from such diseases as stroke, high blood pressure, diabetes mellitus and atherosclerotic disease.

Understanding the brain
Alzheimer’s disease causes a number of changes in the brain. To understand these changes, it helps to understand how the brain works. The human brain is made up of billions of nerve cells, called neurons. Neurons are responsible for our
physical and mental abilities. They help us think, remember and direct our body movement.

Plaques and tangles – In Alzheimer’s disease, neurons and the spaces between them become clogged with protein deposits, often referred to as plaques and tangles. Plaques and tangles develop as part of the normal aging process. But in people with Alzheimer’s disease, there are many more of them.

Plaques and tangles prevent the neurons from sending impulses to each other. The protein that makes up plaques is found in the body naturally. But plaques are abnormal, sticky clusters of this protein. They are found in the spaces between the neurons. They can disrupt the pathways that carry signals from one neuron to the other.

Tangles are also made up of a protein that is found in the body naturally. But the protein gets “tangled” up. Tangles look like threads wrapped around each other inside the neurons that clog the neurons to keep them from functioning properly. Some researchers believe that tangles seriously damage the neurons, causing them to die.

When neurons are clogged with tangles, the spaces between neurons are clogged with plaques. This causes the transmission of nerve impulses from one neuron to misfire. As a result, the brain has difficulty performing some mental functions, such as remembering and thinking.

Diagnosis of Alzheimer’s disease

When evaluating for Alzheimer’s disease, the primary care doctor may refer a patient to one of the following specialists:

- A psychologist with advanced training in testing memory, concentration, problem solving, language and other mental functions.
- A psychiatrist, who specializes in disorders that affect mood or the way the mind works.
- A neurologist, who specializes in diseases of the brain and nervous system.

Today, the only definite way to diagnose AD is to find out whether there are plaques and tangles in brain tissue. To look at brain tissue, however, doctors must usually wait until they do an autopsy. Therefore, doctors can only make a diagnosis of “possible” or “probable” AD while the person is still alive.

At specialized centers, doctors can diagnose AD correctly up to 90 percent of the time. Doctors use several tools to diagnose “probable” AD, including:

- Questions about the person’s general health, past medical problems, and ability to carry out daily activities.
- Tests to measure memory, problem solving, attention, counting and language.
- Medical tests such as tests of blood, urine or spinal fluid.
- Brain scans.

Methods of diagnosing Alzheimer’s disease

In order to diagnose Alzheimer’s disease, the health care provider must rule out other possible causes of symptoms, such as a simple memory loss stemming from other causes. A properly trained physician will need to conduct a complete examination to determine whether Alzheimer’s disease is causing a person’s symptoms.

The health care provider will:

- Take a medical history regarding information about:
  - Medications that are taken regularly.
  - Past and present illnesses.
  - Past surgeries.
  - Mental health problems of the patient and close relatives.
  - Alcohol use.
- Give a complete physical exam including:
  - Take blood or urine samples, or both.
  - Give memory and psychological tests to see at what level the brain is working.
  - Order a brain scan.

Benefits of early diagnosis

Early diagnosis of Alzheimer’s disease allows time to initiate appropriate treatments that may delay cognitive deterioration and to consider such nonpharmacologic interventions as behavior therapy. Additionally, early diagnosis provides the patient and family with time to plan for preparatory counseling, caregiving and management decisions, proper referrals, development of living wills, legal and financial decisions, and selection of health care surrogates.

When Alzheimer’s has been diagnosed early, the loss of abilities is often mild, permitting an individual to continue living independently much as he or she did before. In this early stage, some people experience minor physical compensations, such as falling asleep easily or immunity to colds.

Symptoms of Alzheimer’s disease

When Alzheimer’s disease begins to destroy brain cells, no outward symptoms are evident. After a while, small memory lapses appear and grow more serious. The afflicted individual may:

- Feel more suspicious, cautious or anxious.
- Feel stressed when making decisions.
- Forget the names of familiar people or places.
- Forget simple things, like familiar people’s names, commonly used phone numbers, or what month it is.
- Forget the location of everyday objects.
- Forget how to get to familiar places.
- Forget the words to express what they want to say.
- Lose his or her train of thought when speaking.
- Lose interest in things and people that used to be enjoyable.
- Misplace things more often than usual.
- Repeat things often.

While some individuals experience mild memory losses with aging, people with Alzheimer’s have a more noticeable and rapid decline in memory and other cognitive skills.

The symptoms of early-stage AD may not be obvious to others. Typically, close friends and family members may notice slight changes in their loved one’s memory, judgment, language ability and behavior. The first symptom of the disease is usually memory loss, with the most recent memories affected first.

Model of a healthy brain versus an Alzheimer’s afflicted brain

A diagnosis of probable Alzheimer’s Disease is made after complete medical, neurological, and psychological examinations rule out other possible causes of the person’s symptoms. Alzheimer’s diagnosis centers perform thorough evaluations to determine if a person suffers from symptoms of the disease.

Normal brain

Alzheimer’s brain

The normal aging of the brain is very different from what happens in AD. The old thinking was that the normal cognitive changes in aging were the result of cell loss throughout the brain. Changes in brain chemistry that result in changes in the way the neurons communicate are more likely to be responsible for the memory problems associated with normal aging.

Stages of Alzheimer’s disease

Gradual onset and progression are the distinguishing characteristics of Alzheimer’s disease (AD), and three general symptomatic stages typify its development. They include early, middle and late (mild, moderate and severe). In the early stage of disease, an individual or a close companion may notice increased forgetfulness and word-finding difficulties, the tendency to lose or misplace things, repeated questioning and some disorientation.

- Early-stage Alzheimer’s (mild).
  Memory loss or other cognitive deficits are noticeable, yet the person can compensate for them and continue to function independently. Motor skills at the early stage of disease are still intact. A person with early-stage disease scores at least 20 on the Mini-Mental State Examination (MMSE) and can be cared for at home by family.

- Mid-stage Alzheimer’s (moderate).
  Cognitive decline continues in the second stage of the disease, memory deteriorates, and the ability for self-care is further lost. This state includes declining mental abilities, personality changes, confused time and place, and physical problems. The person becomes more and more dependent on caregivers, has trouble communicating and recognizing family members or friends, develops agitation, begins to wander, experiences delusions and hallucinations, and has an increasing tendency to fall. The person can
be cared for at home or in an institutional setting. A person with middle-stage disease scores between 10 and 19 on the MMSE.

- **Late-stage Alzheimer’s (severe).**
  This stage includes complete deterioration of the personality and loss of control over bodily functions. It requires total dependence on others for even the most basic activities of daily living. An individual with late-stage disease scores 9 or below on the MMSE and has severe impairment. At this stage, the individual can be bedridden, incontinent, unable to understand or speak and require full-time care. Typically, an individual diagnosed with Alzheimer’s disease lives from seven to 10 years, spending five of those years in a nursing facility or with continuous care at home. Death may result from:
  - Decubitus ulcer.
  - Inanition.
  - Lung or urinary tract infection.
  - Pulmonary embolism.
  - Sepsis.

The focus of late-stage Alzheimer’s is the complete deterioration of the personality. Cognitive symptoms worsen, and physical symptoms become profound. The loss of brain cells in all parts of the brain leads to lack of functioning in all systems of the body. The wild behaviors of earlier stages disappear, replaced by a dulling of the mind and body.

### Tests used to diagnose Alzheimer’s disease

Alzheimer’s disease often goes unrecognized or is misdiagnosed in its early stages because doctors and nurses, patients, and family members mistakenly view the early symptoms as the inevitable consequences of aging.

Some disorders that can result in dementia are curable, but Alzheimer’s disease is not. Therefore, it is very important to make a diagnosis as early as possible because some AD symptoms, such as incontinence and depression, can be effectively treated. An early and accurate diagnosis of what is causing the Alzheimer’s-type symptoms is important for the following reasons:

- To possibly rule out Alzheimer’s disease and ease the patient’s and family’s concern.
- To identify any treatable condition and initiate treatment as appropriate.
- To identify Alzheimer’s disease at the earliest possible stage.
- To give the patient and family time to plan for the future needs and care of the patient.
- To make it possible for the patient to start using some medicines that are only useful in the earlier stages of Alzheimer’s.

Alzheimer’s disease cannot be definitely diagnosed until after death, when the brain can be closely examined for certain microscopic changes caused by the disease. Medical and psychological tests as well as other considerations are used to help make a diagnosis of Alzheimer’s disease and include:

- Chest X-rays.

An X-ray is a test in which an image of the body is created by using low doses of radiation. When viewing X-ray images of the chest, doctors can view the structures inside the chest, including:

- The heart.
- The lung.
- The bones.

This test may be used by the doctor to help rule out other disorders that may be causing symptoms similar to those of Alzheimer’s disease.

- **Computed tomography (CT or CAT) scan.**
  A computed tomography (CT or CAT) scan is a technique in which multiple X-rays of the body are taken from different angles in a very short period of time. These images are then fed into a computer, which creates a series of images that look like “slices” through the body. CT scans can show certain changes that are characteristic of Alzheimer’s disease in its later stages. These changes include a reduction in the size of the brain, referred to as atrophy.

- **Electroencephalography (EEG).**
  Electroencephalography (EEG) is a medical technique that measures brain function by analyzing the electrical activity generated by the brain. This activity is measured through special electrodes applied to the scalp. EEG is often used to study various brain processes, such as perception, memory, language and emotion, and is most helpful in identifying disorders that can mimic Alzheimer’s disease.

- **Electrocardiogram (ECG or EKG).**
  An electrocardiogram (ECG or EKG) registers as a graph or series of wavy lines on a moving strip of paper giving the doctor important information about the heart. This test may be used by the doctor to help rule out other conditions that may be causing symptoms similar to those of Alzheimer’s disease.

- **Patient history.**
  A history from the patient helps the doctor assess a person’s past and current health situation. It also helps the doctor to:
    - Evaluate whether there are any medical problems.
    - Develop a plan of treatment.
    - Monitor the patient’s health over time.
    - During this evaluation, the doctor asks the person a series of questions addressing the following patient history:
      - Current health status.
      - Family history.
      - History of any current illness.
      - Information about the difficulties in daily living.
      - Information about other symptoms.
      - Patient’s identifying information.
      - Past medical history.
      - Psychosocial history including marital status.
      - Living conditions.
      - Employment.
      - Sexual history.

- **Important life events.**
- **Mental state to determine whether the person is experiencing any evidence of psychiatric illness, such as depression.**

- **Mini-Mental State Examination (MMSE).**
  This is a very brief exercise that the doctor can use to test a person’s problem solving skills, attention span, counting skills and memory. It will give the doctor insight into whether there has been damage to different areas of the brain. Mental status testing gives the doctor a general idea of whether a person:
    - Is aware of having symptoms or feels nothing is wrong.
    - Knows the date, time and where he or she is.
    - Can remember a short list of words, can follow instructions and do simple calculations.
    - Examples of exercises could include:
      - Copy a picture of two interlocking shapes.
      - Count backward from 100 by 7’s or spell “world” backwards.
      - Follow a three-part instruction, such as: take a piece of paper in your right hand, fold it in half, and place it on the floor.
      - Identify the location of the examiner’s office (state, city, street address, floor).
      - Name two familiar objects present in the office as the examiner points to them.
      - Remember and repeat a few minutes later the names of three common objects (for instance, horse, flower, penny).
      - Repeat a common phrase or saying after the examiner.
      - State the year, season, day of the week and date.

The maximum MMSE score is 30 points. A score of 20-24 suggests mild dementia, 13-20 suggests moderate dementia, and less than 12 indicates severe dementia. On average, the MMSE score of a person with Alzheimer’s declines about 2-4 points each year.

- **Physical exam.**
  The physical examination is part of the patient care process. The exam enables the doctor to assess the overall physical condition of the patient. If the patient has a medical complaint, the physical exam provides the doctor with more information about the problem, which helps him determine an appropriate plan of treatment. The physical exam includes an examination of the following:
    - Abdomen.
    - Bones and muscles.
    - Breasts.
    - Chest, including lungs and heart.
    - Head, eyes, ears, nose.
    - Height and weight.
    - Nerves.
Laboratory tests.

- Rectal/genital area.
- Skin.
- Throat/neck.
- Vital signs.

The physician will also inquire about the following to determine physical condition:
- Diet, nutrition and use of alcohol.
- Review all medications currently being taken, including over-the-counter drugs and supplements.
- Check blood pressure, temperature and pulse.
- Listen to the heart and lungs.
- Collect samples of blood and urine.

Neuropsychological testing.

Neuropsychological tests accompany a comprehensive interview with the patient and may include:
- Assess memory.
- Assess personality stability.
- Emotional stability.
- Language.
- Ability to plan and reason.
- Ability to modify behavior.

Neuropsychological testing also can help the doctor and family better understand the effect of a disorder on a patient’s everyday functioning. There are additional tests that may be done to help diagnose and monitor the progression of Alzheimer’s disease. The following tests are not done routinely and are more often used for research purposes:
- Positron emission tomography (PET) scan.
- Single photon emission computed tomography (SPECT) scan.

SPECT is a technique for creating very clear, three-dimensional pictures of a major organ, such as the brain or heart. Energy from the radioactive substance in the body is detected by a special camera, which then takes the pictures. SPECT can be used to see how blood flows in certain regions of the brain and is useful in evaluating specific brain functions and abnormalities that are characteristic of Alzheimer’s disease.

Clinical manifestations of Alzheimer’s disease

The primary cognitive feature of AD is usually progressive memory impairment that involves impairment of learning new information that is often characterized as short-term memory loss. In the early (mild) and moderate stages of the illness, recall of remote well-learned material may appear to be preserved, but new information cannot be adequately incorporated into memory.

Language impairments are also a prominent part of AD where the individual has difficulty in spontaneous speech. The language of the AD patient is often vague, lacking in specifics and may have increased automatic phrases and clichés. Difficulty in naming everyday objects is often prominent. Complex deficits in visual function are present in many AD patients, as are other focal cognitive deficits.

Non-cognitive or behavioral symptoms are common in AD and may account for an even larger proportion of caregiver burden or stress than the cognitive dysfunction. Personality changes are commonly reported and range from progressive passivity to marked agitation. Patients may exhibit changes such as decreased expressions of affection and personality changes.

- Depressive symptoms are present in up to 40 percent.
- Psychosis occurs in 25 percent.
- No matter what stage the individual is in at the time of diagnosis, apathy is a major problem. More than 40 percent of people in early-stage Alzheimer’s show a lack of interest, initiative and emotional involvement. In the last stage of Alzheimer’s, more than 90 percent of people are apathetic.

Clinical diagnosis of Alzheimer’s disease

Previous studies have shown that the clinical diagnosis of Alzheimer’s disease is often inaccurate when compared with neuropathologic findings. The clinical diagnosis of Alzheimer’s disease correlates strongly with the pathologic diagnosis. A chart review also indicated that most of the patients with an incorrect diagnosis of Alzheimer’s disease had atypical clinical characteristics such as Parkinsonian features, focal neurological signs or absence of language impairment.

Autopsy examinations of both prospective and retrospective subjects were conducted to compare the accuracy of the clinical diagnosis.
of Alzheimer’s disease with pathologic evidence of the disease on autopsy. A total of 220 patients participating in the study included 170 patients who had been clinically diagnosed as having Alzheimer’s disease. Eighty-eight percent of the 170 patients with a clinical diagnosis of Alzheimer’s disease were found to have evidence of the disease on autopsy, and 36 percent were found to have co-morbid conditions. Of the 21 patients, 12 percent had an incorrect diagnosis of Alzheimer’s disease with the presence of either Parkinson’s disease or cerebrovascular disease. After completing all exams and tests, a health care provider will likely provide one of two diagnoses if evidence of the disease exists:

- Probable AD indicates symptoms are probably due to AD and not some other disorder.
- Possible AD indicates symptoms may be due to AD, but one or more other disorders may contribute to symptoms as well.

### Differential diagnosis

In order to bring uniformity to the diagnosis of typical diverse symptoms, a joint National Institute of Health (NIH)/Alzheimer’s Association working group (NINCDS-ADRDA) developed criteria for the clinical diagnosis of probable and possible AD. Of the patients diagnosed with probable AD using these criteria, the diagnosis is confirmed at the time of autopsy by 85-90 percent. The criteria require a one-year course of decline in two or more areas of cognition such as:

- Memory.
- Language.
- Visuospatial function.
- Orientation.
- Judgment and problem solving.

Pick’s disease (now known as frontal type dementia) is characterized by prominent behavioral disturbances, with relatively preserved cognition. A history of hypertension, stroke or clear-cut transient ischemic attacks and the presence of localizing signs on neurological exam make a vascular contribution to the dementia very likely. Other common dementias have prominent motor signs at presentation and have been called “subcortical dementias.”

These include a wide variety of Parkinson’s-like motor presentations accompanied by fluctuating cognitive abilities and frequently, hallucinations. Normal pressure hydrocephaus is often raised as a possibility on radiological studies. It should only be seriously considered when the dementia is mild and follows a more severe gait disturbance. Incontinence is variable.

### Following a diagnosis

The course of the disease and how fast the changes occur will vary from person to person. On average, AD patients live from eight to 10 years after they are diagnosed. However, the disease can last as long as 20 years.

Younger onset patients may have somewhat more aggressive courses, with prominent language and visuospatial problems. Those individuals with onset in their 80s often have primarily memory loss and a more gradual decline. Delirium or acute confusion is a common complication even with fairly mild metabolic derangements.

Even if it is expected, a diagnosis of AD can come as a shock. There is much that one can do in the early stages that can help to make life easier and more enjoyable. Once AD has been diagnosed, it is important to consider what to do next.

- Maintain independence.
  - A person who has been diagnosed should be encouraged to remain as independent as possible and to continue to enjoy his or her usual activities and occupations. There is advice and support now available.
- Research community care services.
  - Services arranged by local advocates are known as community care services. They vary from area to area but may include:
    - Day care services.
    - Equipment and adaptations.
    - Home care services.
    - Respite care and residential and nursing care.
- Arrange for financial obligations.
  - A person with AD should arrange their financial and legal affairs while they are still able to do so. The family can receive advice from a lawyer when completing legal documents to check that documents are completed correctly and are legally valid. Local legal aid affiliates can provide a list of attorneys with experience helping people with AD.
  - It is important that all legal papers are in order and can be easily accessible. These documents could include bank and building society statements, mortgage or rent documents, insurance policies, a will, tax and pension details, bills and guarantees. It might be a good financial decision to set up direct debits or standing orders for regular bills, so that no one has to remember to pay them.

Keep in mind the following suggestions to help a diagnosed individual and family cope with a positive diagnosis:

- All members of the family should be honest about their feelings.
- Be positive by concentrating on the things that one can do instead of things that have become too difficult to do.
- Keep a sense of humor.
- Rebuild self-confidence, after the initial shock of the diagnosis.
- It is important that the diagnosed individual tell people that he or she has a memory problem.
- Do not be embarrassed to ask friends and family to repeat or explain things.
- Do not fear asking for help and accepting it.
- Do not rush thoughts but concentrate on specifics.
- Plan difficult tasks during the times of the day when the individual normally feels best.
- Avoid overstimulation as too much noise and activity creates anxiety and confusion for some individuals.
- When frustrated about things not going well, do not self-blame.

### A closer look at neurons

The billions of neurons in the brain send messages, or impulses, to one another. Each neuron has branch-like structures. Some of these branch-like structures bring impulses to the neuron. Others carry impulses away from the neuron. This relaying of impulses from neuron to neuron in the brain is what makes it possible for us to carry out mental and physical tasks.

### Caring for a person AD

**Understanding how AD changes people**

**Challenges and coping strategies**

Alzheimer’s disease is an illness of the brain. It causes large numbers of nerve cells in the brain to die. This affects a person’s ability to remember things and think clearly. People with AD become forgetful and easily confused. They may have a hard time concentrating and behave in odd ways. These problems get worse as the illness gets worse, making your job as caregiver harder. It’s important to remember that the disease, not the person with AD, causes these changes. Also, each person with AD may not have all the symptoms.

### Changes in communication skills

Communication is hard for people with AD because they have trouble remembering things. They may struggle to find words or forget what they want to say. You may feel impatient and wish they could just say what they want, but they can’t. It may help you to know more about common communication problems caused by AD. Once you know more, you’ll have a better sense of how to cope.

### Here are some communication problems caused by AD:

- Trouble finding the right word when speaking.
- Problems understanding what words mean.
- Problems paying attention during long conversations.
- Loss of train-of-thought when talking.
- Trouble remembering the steps in common activities, such as cooking a meal, paying bills, getting dressed or doing laundry.
- Problems blocking out background noises from the radio, TV, telephone calls, or conversations in the room.
- Frustration if communication isn’t working.
- Being very sensitive to touch, tone and loudness of voices.
- AD causes some people to get confused about language. For example, the person might forget or no longer understand English if it was learned as a second language. Instead, he or she might understand and use only the first language learned, such as Spanish.

### How to cope with changes in communication skills

The first step is to understand that the disease causes changes in these skills. The second step is to try some tips that may make communication
You can also:
- Move eye contact to get his or her attention, and call the person by name.
- Be aware of your tone and how loud your voice is, how you look at the person and your “body language.” Body language is the message you send just by the way you hold your body. For example, if you stand with your arms folded very tightly, you may send a message that you are tense or angry.
- Encourage a two-way conversation for as long as possible. This helps the person with AD feel better about himself or herself.
- Use other methods besides speaking to help the person, such as gentle touching to guide him or her.
- Try distracting someone with AD if communication creates problems. For example, offer a fun activity such as a snack or a walk.

To encourage the person with AD to communicate with you:
- Repeat instructions and allow more time for a response. Try not to interrupt.
- Don’t talk about the person as if he or she isn’t there.
- Don’t talk to the person using “baby talk” or a “baby voice.”

Here are some examples of what you can say:
- “Let’s try this way,” instead of pointing out mistakes.
- “Please do this,” instead of “Don’t do this.”
- “Thanks for helping,” even if the results aren’t perfect.

You also can:
- Ask questions that require a yes or no answer. For example, you could say, “Are you tired?” instead of “How do you feel?”
- Limit the number of choices. For example, you could say, “Would you like a hamburger or chicken for dinner?” instead of “What would you like for dinner?”
- Use different words if he or she doesn’t understand what you say the first time. For example, if you ask the person whether he or she is hungry and you don’t get a response, you could say, “Dinner is ready now. Let’s eat.”
- Try not to say “Don’t you remember?” or “I told you.”

Helping a person who is aware of memory loss
AD is being diagnosed at earlier stages. This means that many people are aware of how the disease is affecting their memory. Here are tips on how to help someone who knows that he or she has memory problems:
- Take time to listen. The person may want to talk about the changes he or she is noticing.
- Be as sensitive as you can. Don’t just correct the person every time he or she forgets something or says something odd. Try to understand that it’s a struggle for the person to communicate.
- Be patient when someone with AD has trouble finding the right words or putting feelings into words.
- Help the person find words to express thoughts and feelings. For example, Mrs. D cried after forgetting her garden club meeting. She finally said, “I wish they stopped.” Her daughter said, “You wish your friends had stopped by for you.” Mrs. D nodded and repeated some of the words. Then Mrs. D said, “I want to go.” Her daughter said, “You want to go to the garden club meeting.” Again, Mrs. D nodded and repeated the words.
- Be careful not to put words in the person’s mouth or “fill in the blanks” too quickly.
- As people lose the ability to talk clearly, they may rely on other ways to communicate their thoughts and feelings. For example, their facial expressions may show sadness, anger or frustration. Grasping at their undergarments may tell you they need to use the bathroom.

Changes in personality and behavior
Because AD causes brain cells to die, the brain works less well over time. This changes how a person acts. You will notice that he or she will have good days and bad days.

Here are some common personality changes you may see:
- Getting upset, worried and angry more easily.
- Acting depressed or not interested in things.
- Hiding things or believing other people are hiding things.
- Imagining things that aren’t there.
- Wandering away from home.
- Pacing a lot of the time.
- Showing unusual sexual behavior.
- Hitting you or other people.
- Misunderstanding what he or she sees or hears.
- The person may stop caring about how he or she looks, stop bathing, and want to wear the same clothes every day.

Other factors that may affect how people with AD behave
In addition to changes in the brain, the following things may affect how people with AD behave:
- **How they feel:**
  - Sadness, fear, or a feeling of being overwhelmed.
  - Stress caused by something or someone.
  - Confusion after a change in routine, including travel.
  - Anxiety about going to a certain place.

- Health-related problems:
  - Illness or pain.
  - New medications.
  - Lack of sleep.
  - Infections, constipation, hunger, or thirst.
  - Poor eyesight or hearing.
  - Alcohol abuse.
  - Too much caffeine.

- Problems in their surroundings:
  - Being in a place he or she doesn’t know well.
  - Too much noise, such as TV, radio or many people talking at once. Noise can cause confusion or frustration.
  - Stepping from one type of flooring to another. The change in texture or the way the floor looks may make the person think he or she needs to take a step down.
  - Misunderstanding signs. Some signs may cause confusion. For example, one person with AD thought a sign reading “Wet Floor” meant he should urinate on the floor.
  - Mirrors. Someone with AD may think that a mirror image is another person in the room.

Here are some ways to cope with changes in personality and behavior:
- Keep things simple. Ask or say one thing at a time.
- Have a daily routine, so the person knows when certain things will happen.
- Reassure the person that he or she is safe and you are there to help.
- Focus on his or her feelings rather than words. For example, say, “You seem worried.”
- Don’t argue or try to reason with the person.
- Try not to show your anger or frustration. Step back. Take deep breaths, and count to 10. If safe, leave the room for a few minutes.
- Use humor when you can.
- Give people who pace a lot a safe place to walk.
- Use distractions:
  - Try using music, singing or dancing to distract the person. One caregiver found that giving her husband chewing gum stopped his cursing.
  - Ask for help. For instance, say, “Let’s set the table” or “It’s time to go for our walk.”

How to cope with hallucinations and delusions
As the disease progresses, the person with AD may have hallucinations. During a hallucination, a person sees, hears, smells, tastes or feels something that isn’t there. For example, the person may see his or her dead mother in the room. He or she also may have delusions.
Delusions are false beliefs that the person thinks are real. For example, the person may think his or her spouse is in love with someone else.

Here are some things you can do:
- Tell the residing nurse about the hallucinations or delusions.
- Try not to argue about what the person with AD sees or hears. Comfort the person if he or she is afraid.
- Distract the person. Sometimes moving to another room or going outside for a walk helps.
- Turn off the TV when violent or upsetting programs are on. Someone with AD may think these events are really going on in the room.
- Make sure the person is safe and can’t reach anything that could be used to hurt anyone or him or herself.

**How to cope with paranoia**

Paranoia is a type of delusion in which a person may believe – without a good reason – that others are mean, lying, unfair or “out to get” him or her. He or she may become suspicious, fearful or jealous of people. In a person with AD, paranoia often is linked to memory loss. It can become worse as memory loss gets worse. For example, the person may become paranoid if he or she forgets:
- Where he or she put something. The person may believe that someone is taking his or her things.
- That you are the person’s caregiver. Someone with AD might not trust you if he or she thinks you are a stranger.
- People to whom he or she has been introduced. The person may believe that strangers will be harmful.
- Directions you just gave. The person may think you are trying to trick him or her.

Paranoia may be the person’s way of expressing loss. The person may blame or accuse others, because no other explanation seems to make sense.

Here are some tips for dealing with paranoia:
- Try not to react if the person blames you for something.
- Don’t argue with him or her.
- Let the person know that he or she is safe.
- Explain to others that the person is acting this way because he or she has AD.
- Search for missing things to distract the person, talk about what you found. For example, talk about a photograph or keepsake.

**How to cope with agitation and aggression**

Agitation means that a person is restless and worried. He or she doesn’t seem to be able to settle down. Agitated people may pace a lot, not be able to sleep, or act aggressively toward others. They may verbally lash out or try to hit or hurt someone. Most of the time, these behaviors happen for a reason. When they happen, try to find the cause.

For example, the person may have:
- Pain, depression, or stress – and not know how to explain it.
- Too little rest or sleep.
- Constipation.
- Soiled underwear or diaper.

Here are some other causes of agitation and aggression:
- Sudden change in a well-known place, routine, or person.
- A feeling of loss – for example, the person with AD may miss the freedom to drive or the chance to care for children.
- Too much noise or confusion or too many people in the room.
- Being pushed by others to do something – for example, to bathe or to remember events or people – when AD has made the activity very hard or impossible.
- Feeling lonely and not having enough contact with other people.
- Interaction of medicines.

Here are suggestions to help you cope with agitation and aggression:
- Look for the early signs of agitation or aggression. If you see the signs, you can deal with the cause before the problem behaviors start.
- Try not to ignore the problem. Doing nothing can make things worse. Try to find the causes of the behavior. If you deal with the causes, the behavior may stop.
- Allow the person to keep as much control in his or her life as possible.
- Try to distract the person with a favorite snack, object or activity.

You also can:
- Reassure him or her. Speak calmly. Listen to the person’s concerns and frustrations. Try to show that you understand if the person is angry or fearful.
- Keep well-loved objects and photographs around them. This can make the person feel more secure.
- Reduce noise, clutter or the number of people in the room.
- Try gentle touching, soothing music, reading or walks.
- Build quiet times into the day, along with activities.
- If possible, limit the amount of caffeine, sugar and “junk food” the person drinks and eats.

**Here are things the doctor can do:**
- Give the person a medical exam to find any problems that may cause the behavior. These problems might include pain, depression, or the effects of certain medicines.
- Check the person’s vision and hearing each year.

**Here are some important things to do when the person is aggressive:**
- Protect yourself from aggressive behavior. If you have to, try to stay at a safe distance from the person until the behavior stops and notify a supervisor.
- As much as possible, protect the person from hurting himself or herself.

**How to cope with wandering**

Many people with AD wander away from their room or even facility. As the caregiver, you need to know how to limit wandering and prevent the person from becoming lost. This will help keep the person safe and give you greater peace of mind.

**How to cope with rummaging and hiding things**

Someone with AD may start rummaging or searching through cabinets, drawers, closets and other places where things are stored. He or she also may hide items around their room. This behavior can be annoying or even dangerous for the caregiver or family members. If you get angry, try to remember that this behavior is part of the disease.

In some cases, there might be a logical reason for this behavior. For instance, the person may be looking for something specific, although he or she may not be able to tell you what it is. He or she may be hungry or bored. Try to understand what is causing the behavior so you can fit your response to the cause.

Here are some other steps to take:
- Lock up dangerous or toxic products, or place them out of the person’s sight and reach.
- Remove valuable items that could be misplaced or hidden by the person, like important papers, checkbooks, charge cards, jewelry, and keys.
- People with AD often hide, lose, or throw away mail.
- Keep the person with AD from going into unused rooms. This limits his or her rummaging through and hiding things.
- Keep all trashcans covered or out of sight. People with AD may not remember the purpose of the container or may rummage through it.
- Check trash containers before you empty them, in case something has been hidden there or thrown away by accident.

In some cases it is important to have a special place where the person with AD can rummage freely or sort things. This could be a chest of drawers, a bag of objects or a basket of clothing to fold or unfold. This could be a personal box, chest or cupboard to store special objects.

You may have to remind the person where to find his or her personal storage place.

**Changes in intimacy and sexuality**

Intimacy is the special bond we share with a person we love and respect. It involves the way we talk and act toward one another. This bond can exist between spouses or partners, family members and friends. AD often changes the intimacy between people. Sexuality is one type of intimacy. It is an important way that spouses or partners express their feelings physically for one another. AD can cause changes in intimacy and
Providing everyday care for people with AD

Activity and exercise
Being active and getting exercise helps people with AD feel better. Exercise helps keep their muscles, joints and heart in good shape. It also helps people stay at a healthy weight and have regular toilet and sleep habits. You want someone with AD to do as much as possible for himself or herself. At the same time, you also need to make sure that the person is safe when active.

Here are some tips for helping the person with AD stay active:
- Walk, if possible, are a great way to stay active and healthy.
- Add music to the exercises, if it helps the person with AD. Dance to the music if possible.
- Watch exercise videos/DVDs made for older people.
- Make sure he or she wears comfortable clothes and shoes that fit well and are made for exercise.
- Make sure the person drinks water or juice after exercise.

Some people with AD may not be able to get around well. This is another problem that becomes more challenging to deal with as the disease gets worse. Some possible reasons for this include:
- Trouble with endurance.
- Poor coordination.
- Sore feet or muscles.
- Illness.
- Depression or general lack of interest.

Even if people have trouble walking, they may be able to:
- Do simple tasks.
- Use a stationary bike.
- Use soft rubber exercise balls or balloons for stretching or throwing back and forth.
- Use stretching bands. Be sure to follow the instructions.

Everyday care
At some point, people with AD will need help bathing, brushing their teeth, combing their hair and getting dressed. Because these are private activities, people may not want help. They may feel embarrassed about being naked in front of caregivers. They also may feel angry about not being able to care for themselves. Below are suggestions that may help with bathing, grooming and dressing.

Bathing
Helping people with AD take a bath or shower can be one of the hardest things you do. Planning can help make the person’s bath time better for both of you. The person with AD may be afraid. To reduce these fears, follow the person’s lifelong bathing habits, such as doing the bath or shower in the morning or before going to bed. Here are other tips for bathing:
- **Safety tips:**
  - Never leave a confused or frail person alone in the tub or shower.
  - Always check the water temperature before he or she gets in the tub or shower.
  - Use plastic containers for shampoo or soap to prevent them from breaking.
  - Look for ways to prevent an accident such as slipping in the tub, and make sure safety bars are installed in the tub.
  - Use a sturdy shower chair in the tub or shower. This will support a person who is unsteady, and it could prevent falls.
- **Before a bath or shower:**
  - Get the soap, washcloth, towels and shampoo ready.
  - Make sure the bathroom is warm and well lighted. Play soft music if it helps to relax the person.
  - Be matter-of-fact about bathing. Say, “It’s time for a bath now.” Don’t argue about the need for a bath or shower.
  - Be gentle and respectful. Tell the person what you are going to do, step-by-step.
  - Make sure the water temperature in the bath or shower is comfortable.
  - Don’t use bath oil. It can make the tub slippery and may cause urinary tract infections.
- **During a bath or shower:**
  - Allow the person with AD to do as much as possible. This protects his or her dignity and helps the person feel more in control.
  - Put a towel over the person’s shoulders or lap. This helps him or her feel less exposed. Then use a sponge or washcloth to clean under the towel.
  - Distract the person by talking about something else if he or she becomes upset.
  - Give him or her a washcloth to hold. This makes it less likely that the person will try to hit you.
- **After a bath or shower:**
  - If the person with AD has trouble getting in and out of the bathtub, do a sponge bath instead.
- **Other bathing tips:**
  - If possible, give the person a full bath two or three times a week. For most people, a sponge bath to clean the face, hands, feet, underarms and genital or “private” area is all you need to do every day.

Grooming
For the most part, when people feel good about how they look, they feel better. Helping people with AD brush their teeth, shave, or put on makeup often means they can feel more like themselves.
- **Mouth care.**
  - Good mouth care helps prevent dental problems such as cavities and gum disease.
  - Show the person how to brush his or her teeth. Go step-by-step. For example, pick up the toothpaste, take the top off, put the toothpaste on the toothbrush, and then brush. Remember to let the person do as much as possible.
  - Help the person clean his or her dentures. Make sure he or she uses the denture cleaning material the right way.
  - Ask the person to rinse his or her mouth with water after each meal and use mouthwash once a day.
  - Try a long-handled, angled or electric toothbrush if you need to brush the person’s teeth.
- **Dressing.**
  - People with AD often need more time to dress. It can be hard for them to choose their clothes. They might wear the wrong clothing for the season. They also might wear colors that don’t go together or forget to put on a piece of clothing. Allow the person to dress on his or her own for as long as possible.
  - Lay out clothes in the order the person should put them on, such as underwear first, then pants, then a shirt and then a sweater.
  - Hand the person one thing at a time or give step-by-step dressing instructions.

Adapting activities for people with AD
Caring for a Person with AD

Doing things we enjoy gives us pleasure and adds meaning to our lives. People with AD need to be active and do things they enjoy. However, don’t expect too much. It’s not easy for them to plan their days and do different tasks.

Here are two reasons:
1. They may have trouble deciding what to do each day. This could make them fearful and worried, or quiet and withdrawn.
2. They may have trouble starting tasks. Remember, the person is not being lazy. He or she might need help organizing the day or doing an activity.

Daily activities
Plan activities that the person with AD enjoys. He or she can be a part of the activity or just watch.

Here are things you can do to help the person enjoy an activity:
- Match the activity with what the person with AD can do.
- Choose activities that can be fun for everyone.
Help the person get started.
 Decide if he or she can do the activity alone or needs help.
 Watch to see if the person gets frustrated.
 Make sure he or she feels successful and has fun.
 Let him or her watch, if that is more enjoyable.

The medical side of AD
People with AD may take medications to treat:
- The disease itself.
- Mood or other behavior changes.
- Other medical conditions they may have.

Evaluating the drugs used to treat Alzheimer's disease
The medicines used to slow mental decline in people with Alzheimer's disease are not particularly effective, with only 10 to 20 percent of people taking an Alzheimer's drug that benefits them. To date, there is little to predict who will respond and who will benefit from one of the drugs approved to treat Alzheimer's disease. The decision to begin a drug is largely based on whether the treatment is worth the cost and the risk of side effects.

- Considering the cost – Averaging $148 to $195 a month, the Alzheimer's drugs are costly and may not be worth the added cost if the patient must take many other medicines. This is true even if insurance or Medicare coverage helps pay, because out-of-pocket payments can still be quite steep.

- Considering the side effects – While the long-term adverse effects of the Alzheimer's drugs have not been fully evaluated, short-term side effects are either mild or reversible when a person stops taking the medicine. On this basis, many people with Alzheimer's disease may opt to try one of the drugs for six months to one year to see if it helps.

Medicines to treat AD
Both caregivers and doctors need to remember that no two people with AD are alike. This means that medications may work differently in different people.

- Many factors may play a role in the disease, such as:
  - Genes.
  - Lifestyle.
  - Earlier treatments.
  - Other illnesses or problems.
  - The person's surroundings.
  - Stage of AD.

At the time of this writing, four medicines (listed later in this chapter) were approved to treat AD. Other promising new medicines are being tested.

It's important to understand that none of the medicines can cure or stop the disease. What they can do, for some people, is help them improve for a while from where they started. However, most of the time, these medicines work to slow down certain problems, such as memory loss. Slowing down memory loss can allow many people with AD to be more comfortable and independent for a longer time.

Medicines for mild to moderate AD
Three of the four medicines to treat AD are similar. They are used to treat mild to moderate stages of the disease. They may help delay or slow down some symptoms. One of the medicines, Aricept®, also may help people with severe AD.

The brand names for these three medicines are:
- 1. Aricept® (Air-uh-sept).
- 2. Exelon® (EKS-uh-lawn).

A medicine for moderate to severe AD
Namenda®, the fourth medicine, is used to treat moderate to severe AD. For some patients, Namenda® (nul-MEN-duh) may slow the symptoms of AD. This may allow some people to do more things for themselves, such as using the toilet. Sometimes doctors use a combination of medicines to treat moderate to severe AD. For example, they might use Aricept® and Namenda®. These two medicines work in different ways, so it is safe to take them together.

Medicines to treat behavior problems related to AD
Examples of behavior problems that can occur in AD are restlessness, anxiety, depression, trouble sleeping and aggression. Experts agree that medicines to treat these behavior problems should be used only after other strategies that don't use medicine have been tried.

If they don't work and the person with AD continues to be upset, restless, depressed or aggressive, he or she may need medicine. Talk with the doctor about which medicines are safest and most effective to help with these problems.

Remember the following tips about medicines:
- Use the lowest dose possible.
- Watch for side effects. Be prepared to stop the medicine if they occur.
- Allow the medicine a few weeks to take effect.

Below is a list of medicines used to help with depression, aggression, restlessness, and anxiety.

- Antidepressants are drugs used to treat depression and worry (also called anxiety).
  - Examples of these medicines include:
    - Celexa® (Sa-LEKS-a).
    - Remeron® (REM-er-on).
    - Zoloft® (ZO-lof).

- Anticonvulsants are drugs sometimes used to treat severe aggression.
  - Examples of these medicines include:
    - Depakote® (DEP-uh-cote).
    - Trileptal® (tri-LEP-tall).

Medicines to be used with caution
There are some medicines, such as sleep aids, anti-anxiety drugs and antipsychotics, that the person with AD should take only:
- After the doctor has explained all the risks and side effects of the medicine.
- After other, safer medicines have not helped treat the problem. You will need to watch closely for side effects from these medications.

- Sleep aids are used to help people get to sleep and stay asleep. People with AD should NOT use these drugs on a regular basis because they make the person more confused and more likely to fall.
  - Examples of these medicines include:
    - Ambien® (AM-bee-un).
    - Lunesta® (lu-NES-ta).
    - Sonata® (SO-nah-ta).

- Anti-anxiety drugs are used to treat agitation. These drugs can cause sleepiness, falls and confusion. Therefore, doctors recommend using them only for short periods of time.
  - Examples of these medicines include:
    - Ativan® (AT-eh-van).
    - Klonapin® (KLON-uh-pin).

- Antipsychotics are drugs used to treat paranoia, hallucinations, sleeplessness, agitation, and aggression. Side effects of using these drugs can be serious. They should ONLY be given to people with AD when the doctor agrees that the symptoms are severe.
  - Examples of these medicines include:
    - Risperdal® (RISS-per-doll).
    - Seroquel® (SAIR-oh-kwell).
    - Zyprexa® (zye-PREKS-uh).

Medicines that people with AD should not take
- Anticholinergic drugs are used to treat many medical problems such as stomach cramps, incontinence, asthma, motion sickness and muscle spasms. Side effects, such as confusion, can be serious for a person with AD. These drugs should NOT be given to a person with AD.
  - Examples of these drugs include:
    - Atrovent® (AT-row-vent).
    - Combivent® (COM-bi-vent).
    - Duoneb® (DO-oh-neb).
    - Spiriva® (SPY-ree-vah).

- Medicines to treat other medical conditions: Many people with AD also have other medical problems such as diabetes, high blood pressure or heart disease. They may take different medicines for these problems.

Common medical problems in people with AD
A person with AD may have other medical problems over time, as we all do. These problems can cause more confusion and behavior changes. The person may not be able to tell you what is wrong. You need to watch for signs of illness and tell the doctor about what you see.

The most common medical problems
- Flu and pneumonia
  These diseases spread quickly from one person to another, and people with AD are more likely to get them. Make sure that the person gets a flu shot each year and a pneumonia vaccine shot every 5 years. The shots lower the chances that the person will
Dehydration

Flu and pneumonia may cause:
- Fever.
- Chills.
- Aches.
- Pains.
- Vomiting.
- Coughing.
- Breathing trouble.
- Note that not everyone with pneumonia has a fever.

- Fever
  - Having a fever means that the person’s temperature is 2 degrees above his or her normal temperature. A fever may be a sign of:
    - Infection, caused by germs.
    - Dehydration, caused by a lack of fluids.
    - Heat stroke.
    - Constipation.
  - Don’t use a glass thermometer to check the temperature of a person with AD, because the person might bite down on the glass.
  - Use a digital thermometer.

- Falls
  - As AD gets worse, the person may have trouble walking and keeping his or her balance. He or she also may have changes in depth perception, which is the ability to understand distances.
  - For example, someone with AD may try to step down when walking from a carpeted to a tile floor. This puts him or her at risk for falls.
  - To reduce the chance of a fall:
    - Clean up clutter.
    - Remove throw rugs.
    - Use chairs with arms.
    - Put grab bars in the bathroom.
    - Use good lighting.
    - Make sure the person wears sturdy shoes with good traction.

- Dehydration
  - Our bodies must have a certain amount of water to work well. If a person is sick or doesn’t drink enough fluid, he or she may become dehydrated.
  - Signs of dehydration to look for include:
    - Dry mouth.
    - Dizziness.
    - Hallucinations (Don’t forget that hallucinations may be caused by the AD itself).
  - Rapid heart rate.
  - Be aware of how much fluid the person is drinking. This is even more important during hot weather or in homes without air conditioning. Also, look for signs of dehydration during the winter months when heat in a home can create a lot of dry air.

- Constipation
  - People can have constipation – trouble having a bowel movement – when they:

Examples of things that can be treated

- Urinary tract infection.
- Enlarged prostate gland.
- Too little fluid in the body (dehydration).
- Diabetes that isn’t being treated.
- Taking too many water pills.
- Drinking too much caffeine.
- Taking medicines that make it hard to hold urine.

Dental, skin, foot and body jerking problems

Dental, skin, foot and body jerking problems may take place in early and moderate stage AD, but most often happen during late stage AD.

Other medical problems

People with AD can have the same medical problems as many older adults. Research suggests that some of these medical problems may be related to AD. For example, some heart and blood circulation problems, stroke, and diabetes are more common in people who have AD than in the general population. Diseases caused by infections also are common.

How to make someone with AD more comfortable

Here are some ways to make the person with AD more comfortable:
- Use special mattresses and wedge-shaped seat cushions that reduce pressure sores.
- Change what they eat.
- Take certain medicines, including Namenda®.
- Get less exercise than usual.
- Drink less fluid than usual.
- Try to get the person to drink at least 6 glasses of liquid a day.
- Besides water, other good sources of liquid include:
  - Juice, especially prune juice.
  - Gelatin, such as Jell-O®.
  - Soup.
  - Melted ice cream.
  - Decaffeinated coffee and tea.
  - Liquid cereal, such as Cream of Wheat®.
  - Foods high in fiber, such as dried apricots, raisins, or prunes; some dry cereals; or soybeans help ease constipation.
- If possible, make sure that the person gets some exercise each day, such as walking.

Diarrhea

Some medicines, such as Aricept®, Razadyne® and Exelon®, may cause diarrhea – loose bowel movements. Certain medical problems also may cause diarrhea. Make sure the person takes in lots of fluids when he or she has diarrhea.

Incontinence

Incontinence means a person can’t control his or her bladder and/or bowels. This may happen at any stage of AD, but it is more often a problem in the later stages. Signs of this problem are leaking urine, problems emptying the bladder, and soiled underwear and bed sheets.

Looking toward the future

In the future, the prevalence of Alzheimer’s disease is expected to increase to 11.3-16 million cases in America by 2050. It is helpful to keep these additional statistics in mind.
- 19 million people have had a family member with Alzheimer’s in the U.S.
- Nearly 50 percent of people over 85 years in the U.S. have Alzheimer’s.
- AD was the eighth leading cause of death in 1999 and 2000.
- There were 31,145 deaths from AD in women in the U.S. in 1999.
- $80 to $100 billion is spent each year in health care expenses and lost wages of both patients and their caregivers.
- The average lifetime cost of care for an AD diagnosed individual is $170,000.
- 7,900 patients were hospitalized with Alzheimer’s as a primary diagnosis in the United States in 2000.
- The U.S. government spent an estimated $640 million for research of the disease in America 2003.

Conclusion

The cause of Alzheimer’s disease continues to remain somewhat of a mystery. There is no single factor that leads to an Alzheimer’s diagnosis. Some experts say that the most reliable way to diagnose the disease is after a patient has died by means of an autopsy of the brain. An autopsy can show the plaques and tangles that are considered characteristic of Alzheimer’s disease. In recent years, advances in technology and medical research are helping us to identify more and more factors that are associated with the progression of the disease. In moving toward a diagnosis, doctors can now consider many of the following:
- Typical brain changes.
- Risk factors.
- Genes or heredity.
- Diagnostic markers.
- Cognitive deficits and behavioral changes.

Professional now believe they can diagnose Alzheimer’s with a greater degree of certainty by applying a number of tests and measures, even very early in the course of the disease. A hands-on physical exam and in-depth interviewing of patient and family are part of the process, along with various medical and psychological tests.

When other causes of symptoms have been ruled out, the diagnosis is “probable” or “possible” Alzheimer’s disease, even though the certainty is in the 90 percent range. If there is any significant doubt about the diagnosis, a doctor will ask
for a re-evaluation in six months to check for a progression of symptoms.

Doctors cannot diagnose AD in living people from any single lab test, scan, or exam; they can only definitively identify the disease from brain-tissue samples after death. Instead, health care providers compile results from a variety of sources to reach a diagnosis. With current methods, health care providers can diagnose AD with 90 percent accuracy.

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Final Examination Questions
Choose the best answer for questions 1 through 10 and complete your test online at www.elitecme.com.

1. There is a significant difference between men and women in survival after diagnosis of the disease.
   True   False

2. Alzheimer’s disease begins to damage the brain after symptoms appear.
   True   False

3. Age is the most important known risk factor for Alzheimer’s disease.
   True   False

4. The two basic types of Alzheimer’s disease are familial and sporadic.
   True   False

5. A person with early-stage disease who scores a minimum of 40 on the Mini-Mental State Examination (MMSE) can be cared for at home by family.
   True   False

6. MRSI is a test that allows the doctor to observe certain substances throughout the brain with the use of radioactive materials.
   True   False

7. During a bath or shower, allow the person with AD to do as much as possible.
   True   False

8. There are medications to stop the progression of Alzheimer’s disease.
   True   False

9. Namenda is used to treat mild stages of Alzheimer’s disease.
   True   False

10. Some heart and blood circulation problems, stroke, and diabetes are more common in people who have AD than in the general population.
    True   False