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Purpose

The purpose of this course is to provide an overview of Alzheimer's disease, the brain and behavioral changes, management, stages and treatment of Alzheimer's disease, various support / resources that are available to the affected individual and family.

At the conclusion of the course the student will be able to:

- 1. Define the pathophysiology of Alzheimer's disease
- Discuss the theories of what causes Alzheimer's disease.
- 3. Describe characteristics of early to late onset Alzheimer's disease.
- 4. Describe the signs and symptoms associated with Alzheimer's disease.
- 5. Describe the 7 stages of Alzheimer's disease.
- 6. Explain changes that occur within the brain as Alzheimer's disease progress
- 7. Describe behavioral changes experienced by patients with Alzheimer's disease.
- 8. Describe some techniques used to manage behavioral symptoms.
- 9. Discuss diagnostic tests involved in the process of the disease
- 10. Discuss medication safety
- 11. Discuss services, support groups, research centers and publications that are available regarding Alzheimer's disease.



When providing care for the patients / residents with Alzheimer's disease and dementia, all personnel who are involved with or will be a part of the patient's care planning, should have training and be knowledgeable regarding appropriate behavior and medication management, safe environment for the patient / resident, assistance with activities of daily living, stress management for the caregiver, family issues, activities for the patient /resident, ethical issues as well the total well-being and medical management of the patient / resident.



When providing care for the patients / residents with Alzheimer's disease and dementia, the patient / resident may experience one or more of these signs and symptoms in different degrees.

Memory loss

Memory loss is one of the most common signs of Alzheimer's disease, especially forgetting information that was recently learned, frequently asking for the same information repeatedly.

When the individual starts requiring assistance from memory aids or family and friends for the things, he /she would normally handle on their own, this is an indication that there has been a change from normal behavior (Alz.org 2020).

This is especially important as safety will be a major concern and supervision will need to be implemented.

Sometimes individuals may experience changes in the ability to work with numbers or develop or follow a plan. The patient / resident may have trouble concentrating and take much longer time to do the things that they did before (Alz.org 2020).



The individual may experience problems completing familiar tasks at work, home, or at leisure. When the individual starts to have difficulty completing task at work, this indicates that something has changed. Also, as it becomes difficult for the individual to complete daily tasks; for example, may have trouble remembering the rules of their favorite game, this definitely signals that the memory has been affected.

Confusion

The individual may experience confusion regarding time or place. The individual may lose track of the seasons, or the dates, or time. Sometimes they may forget where they are. They may also forget how they got there (Alz.org 2020).

Visual images and spatial relationships

The individual may experience problems understanding visual images and spatial relationships. Some individuals may experience difficulty with reading, determining color and judging the distance (Alz.org 2020).

Problems with words

The individual may develop new problems with words in speaking and /or writing. He /she may experience problems following conversation. For example, may repeat conversation or stop in the middle of a conversation. They may also struggle with vocabulary such as, calling items the wrong name (Alz.org 2020).

Misplacing items

There are times the individual will misplace items and lose the ability to retrace steps to find them or remember where they left the items. Sometimes, the individual with Alzheimer's may accuse other persons of stealing because they cannot find the items that they have misplaced (Alz.org 2020).

Decrease or poor judgment

Individuals with Alzheimer's may experience changes in decision making or judgment. The individual may experience decrease or poor judgment. They may use poor judgment when spending money; may give away to telemarketers. They may also pay less attention to grooming themselves or keeping themselves clean (Alz.org 2020).

Therefore, assistance is often needed with activities of daily living to ensure that the individual is clean and well groomed.

Withdrawal

The individuals with Alzheimer's disease may withdrawal from social activities or from work. The individual with Alzheimer's disease may start to remove himself/ herself from hobbies, social activities, work, or sports, may experience trouble keeping up with his /her favorite sports team (Alz.org 2020).

Personality and mood Changes

The individuals with Alzheimer's disease may experience changes in their personality and mood. They may become suspicious, depressed, fearful, confused, anxious or easily upset (Alz.org 2020).



Alzheimer's disease is defined as a type of dementia that causes the individual to experience problems with memory, thinking and behavior. The symptoms usually develop slowly, and they become worse over time. The symptom become so severe that they interfere with the individual 's daily tasks. Alzheimer's is not a normal part of aging, although the greatest known risk factor is increasing age, and the majority of people with Alzheimer's are 65 and older (Alz.org 2020).

But Alzheimer's disease is not just a disease of old age. According to the Alzheimer's association, up to 5 percent of people with the disease have early onset Alzheimer's, which is also known as younger onset, which often appears when the individual is in their 40s or 50s (Alz.org 2020).

Alzheimer's disease is the most common form of dementia, which is a general term for memory loss and other intellectual abilities serious enough to cause an interference with daily life. Alzheimer's disease accounts for 60 to 80 percent of dementia cases (Alz.org 2020).



Alzheimer's is a progressive disease, and the dementia symptoms gradually become worse over a number of years. In the early stages, memory loss is mild, but within the late-stage Alzheimer's, the individual loses his / her ability to carry on a conversation and respond to the environment (Alz.org 2020).

Individuals with Alzheimer's disease live an average of eight years after the symptoms become noticeable to others, but survival can range from four to twenty years, depending on their age and other health conditions (Alz.org 2020).



There is no cure for Alzheimer's, but treatments for symptoms are available and research continues. Although the current Alzheimer's treatments cannot stop the Alzheimer's disease from progressing, they can temporarily slow the worsening of dementia symptoms and improve the quality of life for the individuals with Alzheimer's and their family and / or caregivers (Alz.org 2020).

Currently, scientist / research is in progress to find better ways to treat the disease, delay its onset, and prevent it from developing (Alz.org 2020).



People in general eventually notice some slowed thinking and occasional experiences problems with remembering certain things. However, serious memory loss, confusion and other major changes in the way the mind works may be a sign that the brain cells are failing (Alz.org 2020).

The most common early symptom of Alzheimer's disease is difficulty remembering newly learned information because Alzheimer's changes typically begin in the part of the brain that affects learning. As Alzheimer's disease advances through the brain it leads to severe symptoms, which includes disorientation, the individual experiences mood and behavior changes; increasing confusion about events, time and place; unfounded suspicions about family, friends and professional caregivers; more serious memory loss and behavior changes; difficulty speaking, swallowing and ambulating (Alz.org 2020).

Individuals with memory loss or other possible signs of Alzheimer's may find it hard to recognize that they have a problem. Signs of dementia may be more obvious to family members or friends. Whenever anyone is experiencing symptoms of dementia, they should be seen by a physician as soon as possible (Alz.org 2020).



As mentioned earlier, Alzheimer's disease is not just a disease of old age. Youngeronset (early-onset) Alzheimer's affects individuals that are younger than age 65.

Many people with early onset are in their 40s and 50s. They have families, careers or are even caregivers themselves when Alzheimer's disease strikes. In the United States, it is estimated that approximately 200,000 individuals have early onset (Alz.org 2020).



Obtaining an accurate diagnosis of early onset Alzheimer's can be a very long process because health care providers generally do not look for Alzheimer's disease in younger individuals. Their symptoms may be attributed to stress or there may be conflicting diagnoses from various health care providers. Individuals who experience early onset Alzheimer's may be in any stage of dementia, such as early stage, middle stage or late stage. Alzheimer's disease affects each person differently therefore symptoms will vary (Alz.org 2020).

If the individual is experiencing memory problems:

- 1. Have a comprehensive medical evaluation with a physician who specializes in Alzheimer's disease. Getting a diagnosis that involves a medical exam and possibly cognitive tests, a neurological exam and/or brain imaging. Call the local chapter of the Alzheimer's Association for a referral.
- 2. Write down the symptoms of memory loss or other cognitive difficulties to share with the health care professional.
- 3. Remember that there is no one test that confirms Alzheimer's disease. A diagnosis can only be made after a comprehensive medical evaluation (Alz.org 2020).

Physicians do not understand why most cases of early onset Alzheimer's appear at such a young age. However, in a few hundred families worldwide, scientists have identified several rare genes that directly cause Alzheimer's. Individuals who inherit these rare genes tend to develop symptoms in their 30s, 40s and 50s. When Alzheimer's disease is caused by deterministic genes, it is called "familial Alzheimer's disease," and many family members in multiple generations are affected (Alz.org 2020).



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Stages of Alzheimer's disease

Alzheimer's disease typically progresses slowly in three general stages: mild (earlystage), moderate (middle-stage), and severe (late-stage). Since Alzheimer's affects people in different ways, each person will experience symptoms or progress through Alzheimer's stages differently (Alz.org 2020).

Progression of Alzheimer's disease

The symptoms of Alzheimer's disease worsen over time, although the rate at which the disease progresses varies. On average, a person with Alzheimer's lives four to eight years after diagnosis, but can live as long as 20 years, depending on other factors (Alz.org 2020).

Changes in the brain related to Alzheimer's disease begin years before any signs of the disease. This time period, which can last for years, is referred to as preclinical Alzheimer's disease (Alz.org 2020).

It may be difficult to place an individual with Alzheimer's in a specific stage as stages may overlap (Alz.org 2020).

MILD Alzheimer's disease (early-stage)

In the early stages of Alzheimer's, the individual may function independently. He or she may still drive, work and be part of social activities. However, the person may feel as if he or she is having memory lapses, such as forgetting familiar words or the location of everyday objects. At this stage family, friends or neighbors begin to notice difficulties. During a detailed medical interview, physicians may be able to detect problems in concentration or memory (Alz.org 2020).

Mild Alzheimer's disease (early-stage) common difficulties may include:

- problems remembering names when introduced to new people
- problems coming up with the right word or name,
- experience increase difficulty performing tasks in work or social settings,
- losing valuable object,
- forgetting information that one has just read and
- Increase trouble with organizing or planning (Alz.org 2020).

Moderate Alzheimer's

Moderate Alzheimer's can last for many years and is typically the longest stage. As the disease progresses, the individual with Alzheimer's will need a greater level of care. It will be noticeable to observe the individual with Alzheimer's confusing words, becoming angry or frustrated, or acting in unexpected ways. Damage to the nerve cells within the brain can make it very difficult to perform routine tasks and express thoughts (Alz.org 2020).

Moderate Alzheimer's (middle-stage) symptoms will be observed by others and may include:

- Forgetfulness about one's own personal history
- Forgetfulness of events
- unable to remember their own telephone number or address
- Feeling withdrawn or moody, especially in socially or mentally challenging situations
- Problems controlling bowels and bladder in some individuals
- An increased risk of wandering and becoming lost
- Requires help to choose appropriate clothing for the season or for the occasion
- Confusion about what day it is or where they are
- Experiencing changes in sleep patterns, for example sleeping during the day and restless at night
- Behavioral and personality changes, such as suspiciousness, delusions, compulsive, repetitive behaviors (Alz.org 2020).

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Severe Alzheimer's disease

The Severe Alzheimer's disease (late-stage) final stage of the disease, individuals lose the ability to carry on a conversation, respond to their environment and eventually, to control movement. The individuals may still say some words or phrases, but very difficult for the individual to communicate pain. As memory and cognitive skills continue to decline or become worse, personality changes may take place and the individual needs extensive help with their activities of daily living (Alz.org 2020).

At this stage, the individuals may:

- Require full-time assistance/ around-the-clock help with daily personal care
- Experience severe decline in physical abilities, such as ability to ambulate, sit and eventually, to swallow food or drink.
- Lose awareness of their surroundings
- Lose awareness of recent experiences
- Having increase difficulty with communicating
- Becoming vulnerable to infections
- Require high levels of assistance with personal care and activities of daily living (Alz.org 2020).

The Global Deterioration Scale for Assessment of Primary Degenerative Dementia

Dr. Barry Reisberg developed the Global Deterioration Scale (GDS), which provides caregivers an overview of the stages of cognitive function for those suffering from a primary degenerative dementia such as Alzheimer's disease (www.fhca.org).

The GDS is broken down into 7 different stages.

Stages 1-3 (pre-dementia stages).

Stages 4-7 (the dementia stages).

Beginning in stage 5, an individual can no longer survive without assistance.

With the GDS caregivers can get an idea of where the individual is at in the disease process by observing behavioral characteristics and comparing them to the Global Deterioration Scale. For more specific assessments, the Brief Cognitive Rating Scale (BCRS) and Functional Assessment Staging (FAST) measures are also utilized. (www.fhca.org).

Remember that not everyone will progress in the same manner or exhibits the same symptoms.

Stage 1: Normal Behavior (No impairment/pre-clinical)

When the individual is in this early phase, he /she will not have any symptoms that you can observe. No impairment is evident. The individual is able to function normally and the cognitive functions appear to be intact. Slight changes may begin to develop within the brain 20 years or more before diagnosis (www.fhca.org).



Tangles and plaques may begin to form in the areas of the brain that involves memory, thinking, learning, and planning. A Positron Emission Tomography (PET) scan can reveal whether he / she has Alzheimer's. A PET scan is an imaging test of the brain. It uses a radioactive substance called a tracer to look for disease or injury in the brain (Alz.org 2020).

STAGE 2 Very Mild Changes

At this stage family and friends may still not notice anything amiss in the individual's behavior. The physician may not notice any changes on the medical examination. The individual is able to function within the normal limits but may experience mild cognitive decline which may include forgetting a word or misplacing objects. At this stage, the subtle symptoms of Alzheimer's do not interfere with the individual's ability to work or live independently (www.fhca.org).

Also remember that these symptoms may be Alzheimer's disease, or just normal changes from aging (www.fhca.org).

STAGE 3 Mild Decline

It is at this stage, that family and friends start to notice changes in the individual's thinking and reasoning. This is usually the first stage at which a diagnosis can be made. The areas of the brain that is involved in thinking, memory and planning develop increase numbers of plaques and tangles (www.fhca.org).

Some changes in the individual's thinking and reasoning may include:

- Forgetting something he /she just read
- Cannot remember names when meeting new people
- Asking the same question over and over
- Has increase trouble organizing or making plans

The family can help the individual by assisting him / her by making sure that he/she pays bills and gets to appointments on time. You can also suggest he ease stress by retiring from work and putting his legal and financial affairs in order (www.fhca.org).

STAGE 4 Moderate Decline

During this stage, the problems in reasoning and thinking that were observed in stage 3 become more obvious and new issues appear. Clinical testing more easily identifies the dementia. The individual is usually able to attend to personal care and the activities of daily living and is able to manage most of the simple personal affairs. The period of mild to moderate decline may continue for 2-10 years (www.fhca.org).

The individual may exhibit signs such as:

- Start forgetting details about himself / herself
- Decreased knowledge regarding current events
- Forgets what month it is
- Forgets what season it is
- Experience difficulty completing complex tasks or multi-tasking
- Experience difficulty putting the right amount on a check and the right date
- Have trouble cooking meals
- Have trouble ordering from a menu (www.fhca.org).

Family and friends can assist with everyday chores and ensuring that the individual is safe. Take steps to make sure that he/ she is not driving anymore (www.fhca.org).

Assist with the individual finances and make sure that no one is trying to take advantage of the individual financially (www.fhca.org).

STAGE 5 (Moderately-severe cognitive decline -Moderate/ mid-stage)

At this stage intervention is often needed. The individual may start to show obvious signs of cognitive impairment and confusion and assistance with daily activities is needed to insure that the individual will eat properly, maintain good hygiene, and are safe. The person may lose track of where he/she is and may lose track of what time it is, may have problems remembering his / her address, phone number, or where he/she attend school (www.fhca.org).

The individual could become confused about what kind of clothing or appropriate clothing to wear for the season or for the day. Family and friends can help by laying out clothing in the morning. This can help the individual to dress by himself / herself and maintain a sense of independence. If the individual repeats the same question, respond a reassuring voice (www.fhca.org).

The brain structures have begun to change with shrinkage of the cerebral cortex and the hippocampus and enlargement of the ventricles. Plaques and tangles within the brain increase in the areas controlling speech and spatial perception (www.fhca.org).

Other signs may include:

- Increase difficulty using and understanding speech
- Disorientation to date, place and time
- Forgets to eat or just eating a poor diet
- Increase difficulty with simple mental mathematics, for example counting backward from 20 by 2s.
- Losing perception of body in relation to objects (www.fhca.org).

STAGE 6 (Severe cognitive decline - Moderately severe, mid-stage)

As Alzheimer's disease progresses, profound changes often occur during this stage. The individual may recognize faces but forget names. He / she may also mistake a person for someone else, for example, thinking his mother is his sister. The individual often goes through personality changes, acting in ways that are different than their normal character (www.fhca.org).

Delusions might set in, such as thinking he /she is going to drive, even though he / she no longer drives or have a car or thinking he / she needs to go to work even though he/ she no longer has a job. He /she may experience personality and behavioral changes, sometimes with paranoia, delusions, and hallucinations. They may feel persecuted. The individuals experience obvious confusion and not able to care for themselves (www.fhca.org).

The individual may exhibit other signs such as:

- Not remembering most recent experiences
- Recognizing familiar faces but forgetting names or the relationship
- lacking awareness of surrounding
- Wander away and gets lost
- Experience disruption of waking-sleeping cycles and sundowner's syndrome
- Dressing inappropriately, for example, putting shoes on wrong feet or underwear over pants
- Pacing back and forth
- Doing compulsive, repetitive actions, for example, handwringing, tearing paper.
- Experience difficulties with toileting and experiences episodes of urinary and bowel incontinence.
- Recall their name but forget many aspects of their personal history

• Confusing reality and fiction for example, thinking what happening on the television is real (www.fhca.org).

This stage can be very prolonged, before the final stage and be difficult for caregivers, often family members, who may be often stressed, and desperate for some help. Others need to assist with all activities of daily living (www.fhca.org).

At this point, brain has shrunk as neurons have continued to die. The last two stages (6 and 7) may last for 1-5 years. It might be hard to talk to the individual, but family and friends can still connect with him /her through the senses. Many individuals with Alzheimer's disease love to hear music, looking over old pictures and love to be read to (www.fhca.org).

STAGE 7 (Very severe cognitive decline -Severe of late-stage)

This is the stage in which the individuals are completely dependent upon others to care for them. Many of their basic abilities such as walking, eating, and sitting up, fade during this stage and they are often wheelchair bound or bedridden (www.fhca.org).

Therefore, the individual needs assistance with all activities of daily living and frequently must be fed. Family and friends can involve by feeding the individual with soft foods; food that are easy-to-swallow because of increasing dysphagia. Also assist by helping him to use a spoon and making sure he / she is drinking. This is especially important because many individuals at this stage can no longer tell when they are thirsty (www.fhca.org).

The individual may exhibit other signs such as:

- Increase muscle weakness and muscle rigidity
- Bladder and bowel incontinence
- Lose most of the ability to speak but may say some words or phrases
- Choking easily
- Lose the ability to stand, walk or sit without support (www.fhca.org).

WARNING SIGNS

There are 10 warning signs and symptoms. Each individual may experience one or more of these signs and symptoms in different degrees. Always follow up with a physician if you observed any of these signs:

1. Memory loss is one of the most common signs of Alzheimer's disease, especially forgetting information that was recently learned, frequently asking for the same information over and over again; requiring assistance from memory aids or family and friends for the things he /she would normally handle on their own (Alz.org 2020).

2. Some individuals may experience changes in the ability to work with numbers or develop or follow a plan. He/ she may have trouble concentrating and take much longer time to do the things that they did before (Alz.org 2020).

3. Have problems completing familiar tasks at work, home, or at leisure. It becomes difficult to complete daily tasks; for example, may have difficulty remembering the rules of their favorite game (Alz.org 2020).

4. Experience confusion regarding time or place. The individual may lose track of seasons, dates, and time. They may forget where they are. They may also forget how they got there (Alz.org 2020).

5. May experience problems understanding visual images and spatial relationships. Some individuals may experience difficulty with reading, determining color and judging the distance (Alz.org 2020).

6. Develop new problems with words in speaking and /or writing. He /she may experience problems following conversation. For example, may repeat conversation or stop in the middle of a conversation. They may also struggle with vocabulary such as, calling items the wrong name (Alz.org 2020).



7. Misplacing items and lose the ability to retrace steps to find them. Sometimes, the individual with Alzheimer's may accuse other persons of stealing because they cannot find the items that they have misplaced (Alz.org 2020).

8. Experience decrease or poor judgment. Individuals with Alzheimer's may experience changes in decision making or judgment. They may use poor judgment when spending money; may give away to telemarketers. They may pay less attention to grooming themselves or keeping themselves clean (Alz.org 2020).

9. Withdrawal from social activities or from work. The individual with Alzheimer's disease may start to remove himself/ herself from hobbies, social activities, work, or sports, may experience trouble keeping up with his /her favorite sports team (Alz.org 2020).

10. Experience changes in their personality and mood. They may become suspicious, depressed, fearful, confused, anxious or easily upset (Alz.org 2020).

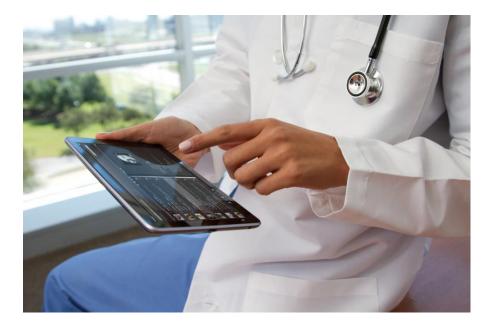
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The physician will evaluate the

individual's overall health and identify any conditions that could affect how well the mind is working. The physician may refer the individual to a specialist such as a:

- Neurologist specializes in diseases of the brain and nervous system
- Psychiatrist specializes in disorders that affect mood or the way the mind works
- **Psychologist** has special training in testing memory and other mental functions
- **Geriatrician** specializes in the care of older adults and Alzheimer's disease (Alz.org 2020).



The Brain & the Impact of Alzheimer's

Alzheimer's is not the only cause of memory loss. Many individuals have problems with memory; this does not mean that they have Alzheimer's disease. There are many different causes of memory loss. (Alz.org 2020).

According to the Alzheimer's Association, microscopic changes in the brain begin long before the first signs of memory loss. The brain has 100 billion nerve cells referred to as neurons. Each neuron connects with many others to form the communication networks. Groups of nerve cells have special functions / jobs. Some are involved in learning, thinking, and remembering. Others help us to hear see and smell (Alz.org 2020).

Scientists believe that Alzheimer's disease prevents parts of a cell's factory from working well. They are not sure where the trouble starts. But just like a real factory, backups and breakdowns in one system cause problems in other areas. As damage spreads, cells lose their ability to do their jobs and, eventually die, causing irreversible changes in the brain (Alz.org 2020).

Two abnormal structures called plaques and tangles are prime suspects in damaging and killing nerve cells.

- 1. **Plagues** are deposits of a protein fragment called beta-amyloid that builds up in the spaces between nerve cells.
- 2. **Tangles** are twisted fibers of another protein called tau that builds up inside cells.

Though most people develop some plagues and tangles as they age, those with Alzheimer's disease tend to develop more. They also tend to develop them in a predictable pattern, beginning in areas that are important for memory before spreading to other regions (Alz.org 2020).

Scientists do not know exactly what role plagues and tangles play in Alzheimer's disease. Most experts believe they somehow play a critical role in blocking communication among nerve cells and disrupting processes that cells need to survive (Alz.org 2020).

It is the destruction and death of nerve cells that causes memory failure, personality changes, problems carrying out daily activities and other symptoms of Alzheimer's disease (Alz.org 2020).

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Research in progress

Currently, Alzheimer's disease is at the forefront of biomedical research. Researchers are working to uncover as many aspects of Alzheimer's disease and related dementias as possible. Some of the most remarkable progress has spread some light on how Alzheimer's affects the brain. The hope is that better understanding will lead to new ways to treat the individuals who are affected by the Alzheimer's disease. Worldwide, there are many potential approaches that are currently under investigation (Alz.org 2020).

What is Dementia?

Dementia is a general term for a decline in mental ability severe enough to interfere with daily life for example memory loss. Alzheimer's disease is the most common type of dementia. Dementia is not a specific disease. It is an overall term that describes a wide range of symptoms that are associated with a decline in memory or other thinking skills severe enough to reduce a person's ability to perform everyday activities. Alzheimer's disease accounts for 60 to 80 percent of cases (Alz.org 2020).

Vascular dementia occurs after a stroke, and it is the second most common dementia type. However, there are many other conditions that can cause symptoms of dementia, including some that are reversible, such as those with thyroid problems and vitamin deficiencies (Alz.org 2020).

Dementia is often inaccurately referred to as senile dementia or senility which reflects the formerly widespread belief that serious mental decline is a normal part of aging, which is not accurate (Alz.org 2020).

While symptoms of dementia can vary greatly, at least two of the following core mental functions must be significantly impaired to be considered dementia:

- Memory
- Communication and language
- Ability to focus and pay attention
- Visual perception
- Reasoning and judgment (Alz.org 2020).

Individuals with dementia may have problems with short-term memory, keeping track of a purse or wallet, paying bills, planning, and preparing meals, remembering appointments or traveling out of the neighborhood (Alz.org 2020).

Many dementias are progressive, meaning that the symptoms start out slowly and gradually becomes worse. Professional evaluation by a physician may detect a treatable condition. However, if the symptoms suggest dementia, early diagnosis will allow the individual to get the maximum benefit from the available treatments. This will also provide an opportunity to volunteer for clinical studies or trials (Alz.org 2020).

CAUSES

Dementia is caused by damage to the brain cells. The different types of dementia are associated with particular types of brain cell damage in particular regions of the brain. Such as, in Alzheimer's disease, high levels of certain proteins inside and outside brain cells make it hard for brain cells to stay healthy and to communicate with each other. Within the brain region called the hippocampus - the center of learning and memory in the brain, the brain cells in this region are often the first to be damaged. That is why memory loss is often one of the earliest symptoms of Alzheimer's (Alz.org 2020).

While most of the changes in the brain that cause dementia are permanent and worsen over time, thinking and memory difficulty or problems caused by the following conditions may improve when the condition is treated or resolved:

- Side effects of Medications
- Excessive use of alcohol
- Depression
- Problems with the Thyroid
- Vitamin deficiencies (Alz.org 2020).

There is no one test to determine if an individual has dementia. The physician diagnose Alzheimer's disease and other types of dementia based on:

- Thorough medical history,
- Physical examination,
- laboratory tests, and
- The characteristic changes in thinking,
- day-to-day function and
- Behaviors associated with each type (Alz.org 2020).

Physicians can determine that an individual has dementia with a high level of certainty. But it is much more difficult to determine the exact type of dementia because the brain changes and symptoms of the different dementias can overlap (Alz.org 2020).

In some cases, the physician may diagnose dementia and not specify a type. If this occurs it may be necessary to follow up with a specialist such as a neurologist or gero-psychologist (Alz.org 2020).

Treatment of dementia will depend on its cause. In most progressive dementias, including Alzheimer's disease, there is no cure and no treatment that slows or stops its progression. However, there are drug treatments that may temporarily improve symptoms (Alz.org 2020).

The same medications used to treat Alzheimer's disease are among the drugs sometimes prescribed to help with the symptoms of other types of dementias. Non-drug therapies can also alleviate some symptoms of dementia (Alz.org 2020).

Ultimately, the path to effective new treatments for dementia is through increased research funding and increased participation in clinical studies (Alz.org 2020).

Some risk factors for dementia cannot be changed, such as age and genetics. But research continues to explore the impact of other risk factors on the brain health and prevention of dementia. Some of the most active areas of research in risk reduction and prevention include:

- Cardiovascular factors,
- Physical fitness, and
- Diet (Alz.org 2020).



Cardiovascular Factors

The brain is nourished by one of the body's richest networks of blood vessels. Anything that damages blood vessels anywhere in the body can damage the blood vessels in the brain and deprive the brain cells of vital oxygen and food. Blood vessel changes within the brain are linked to vascular dementia.

They are often present along with changes caused by other types of dementia, including Alzheimer's disease and dementia with Lewy bodies (Alz.org 2020).

These changes may interact to cause faster decline or make impairments more severe.

You can help protect the brain with some of the same strategies that protect the heart, such as:

- $\circ\,$ Take steps to keep your blood pressure within recommended range
- $\circ\,$ Take action to keep your cholesterol within recommended range
- o Take measures to keep your blood sugar within recommended limits; and
- Maintain a healthy weight
- Do not smoke (Alz.org 2020).



Regular physical exercise may help to lower the risk of some types of dementia. Evidence suggests exercise may directly benefit brain cells by increasing the blood flow and oxygen flow to the brain. Also, along with blood flow, nutrients are also involved (Alz.org 2020).

What you eat may influence or have an effect on the brain health. The best current evidence suggests that heart-healthy eating patterns also may help to protect the brain. Recommendations have been made to include healthy diet which has little red meat and places emphasis on whole grains, fruits vegetables, fish, shellfish, nuts, olive oil and other healthy fats (Alz.org 2020).



The individual with Alzheimer's disease and Dementia will need assistance to prepare meals or to ensure that there is an adequate intake of food, fluids, nutrients / nutrition that is sufficient for maximum health and to prevent dehydration as well as other complications that can arise from lack of proper nutrition or fluids.



If someone has been diagnosed with dementia, the Alzheimer's Association is one of the most trusted resources for information, education, referral, and support.

Call the 24/7 Helpline: 800.272.3900 (Alz.org 2020).

Visit the online Alzheimer's and Dementia Caregiver Center or locate a support group in your community and you can also visit the Alzheimer's Association virtual library at https://www.alz.org/help-support.

Some care giving tips which will assist the caregiver include:

- Educate yourself about the disease. Read literature /books, consult with the healthcare professional and attend workshops. (Alzfdn.org 2020).
- Learn how to avoid caregiver burnout by making time for you and join caregiver support groups (Alzfdn.org 2020).
- Discuss the situation with family and friends. Support systems are very important (Alzfdn.org 2020).
- Pursue interests beyond the care giving role, such as hobbies, exercise, and journaling (Alzfdn.org 2020).
- Do cognitive stimulation activities with him /her. For example, memory games, listening to music and word puzzles (Alzfdn.org 2020).

- Employ positive thinking. Focus on the individual's remaining strengths and enjoy the relationship while you still can (Alzfdn.org 2020).
- Smile and show kindness, humor and creativity are very important aspects of care giving. Hugs, Smiles, hand massage and other gentle physical contact will help your loved one feel connected and loved (Alzfdn.org 2020).
- Take care of the financial, legal and long-term care planning issues. Try to involve the individual in decision-making, if he /she is still able of providing input and include his/ her wishes related to any future care and / or end-of-life issues (Alzfdn.org 2020).
- Learn care giving techniques. The main areas include safety concerns, communication skills, managing behavioral changes /challenges and assisting with activities of daily living (Alzfdn.org 2020).
- Understanding the experience, be kind and patient with your loved one (Alzfdn.org 2020).
- Maintain your own mental and physical health. Get involved in activities to reduce stress such as: Exercise, respite, and hobbies (Alzfdn.org 2020).
- Ensure communication with the physicians. Become involved in the individual's medical care. Ask any questions you have regarding the progression of the disease, talk about the concerns, and discuss available treatment options (Alzfdn.org 2020).

Reach out for care. Call the Alzheimer's Foundation of America at https://www.alz.org/help-support, for information, counseling, and referrals to local resources nationwide (Alzfdn.org 2020).



TESTING

There is no single test that proves the individual has Alzheimer's disease. As mentioned earlier, the diagnosis is made through a complete assessment that will consider all the possible causes.

Medical history

During the medical workup, the physician / health care provider will review the medical history. Health care provider will need to know about current and past illnesses, medical conditions affecting other family members, and also information regarding family history of Alzheimer's disease or related dementias, and any medications and or supplements currently taking, therefore it is important to bring all containers of medicines or a list of all the medicines to the appointment (Alz.org 2020).

During the medical examination, the physician / health care provider will:

- Assess the vital signs: temperature, pulse, respiration, and Blood Pressure
- Listen and assess the heart and lungs,
- Review all current medications prescription and over-the-counter medication and supplements,
- Ask for information about nutrition, diet, and any use of alcohol
- Collect blood and /or urine specimen for laboratory testing and
- Perform various procedures to assess overall health status (Alz.org 2020).



The information from the physical examination and laboratory testing will help to identify health issues that may cause symptoms of dementia. Some conditions other than Alzheimer's that can cause memory problems, confused thinking, trouble focusing include:

- Infection,
- kidney disease,
- depression,
- diabetes,
- anemia,
- liver disease,
- thyroid abnormalities,

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- some vitamin deficiencies,
- problems with the heart,
- problems with the blood vessels and
- problems with the lungs (Alz.org 2020).

Researchers have identified certain genes that increase the risk of developing Alzheimer's and other rare "deterministic" genes that directly cause Alzheimer's disease. Although genetic tests are available for some of these genes, health professionals do not currently recommend routine genetic testing for Alzheimer's disease (Alz.org 2020).

Risk genes

There is a blood test for APOE-e4, the strongest risk gene for Alzheimer's, this test is mainly used in clinical trials to identify individuals at higher risk of developing Alzheimer's disease. Carrying this gene mutation only indicates a greater risk; it does not indicate whether an individual will develop Alzheimer's disease or whether the person has Alzheimer's disease (Alz.org 2020).

Genetic testing for APOE-e4 is controversial and should only be undertaken after discussion with a genetic counselor or the physician (Alz.org 2020).

Testing also is available for genes that cause autosomal dominant Alzheimer's disease (ADAD) or "familial Alzheimer's," a rare form of Alzheimer's that accounts for less than 5 percent of all cases. ADAD runs strongly in families and tends to begin earlier in life (Alz.org 2020).

Many people in these families do not wish to know their genetic status, but some get tested to learn whether they will eventually develop the disease. Some ADAD families have joined clinical studies to help researchers better understand Alzheimer's disease (Alz.org 2020).

During the neurological exam, the physician/ health care provider will rigorously evaluate the individual for problems that may signal brain disorders other than the Alzheimer's disease (Alz.org 2020).

4 Hr

The physician will look for signs of strokes, brain tumors, Parkinson's disease, fluid accumulation on the brain, and other disease or illness that can impair thinking or memory. The neurological examination may also include a brain imaging study (Alz.org 2020).

- Coordination
- muscle tone and strength
- Sensation
- Reflexes
- Speech
- Eye movement.

There are many dementia screenings tests that have been marketed directly to the consumers. The Alzheimer's Association believes that home screening tests <u>cannot and</u> <u>should not be used as</u> a substitute for a thorough examination by a skilled physician. The entire process of the assessment and diagnosis should be carried out within the context of an ongoing relationship with a responsible health care professional (Alz.org 2020).

Mental status testing evaluates memory, ability to solve simple problems and other thinking skills. Such tests give an overall sense of whether a person:

- Is aware of symptoms
- Knows the date, time, and where he or she is
- Can remember a short list of words, follow instructions, and do simple calculations (Alz.org 2020).

The mini-mental state exam and the mini-cog test are two commonly used tests.

Mini-mental state exam (MMSE)

During the MMSE, the health professional will ask the individual a series of questions designed to test a range of everyday mental skills. The maximum MMSE score is 30 points. A score of 20 to 24 suggests mild dementia, 13 to 20 suggest moderate dementia, and less than 12 indicates severe dementia. On average, the MMSE score of an individual with Alzheimer's declines about two to four points each year (Alz.org 2020).

Mini-cog

During the mini-cog, an individual is asked to complete two tasks:

Remember and a few minutes later repeat the names of three common objects

Draw a face of a clock showing all 12 numbers in the right places and a time specified by the examiner (Alz.org 2020).

The results of this test can help the physician to determine if further evaluation is required (Alz.org 2020).

In addition to assessing the mental status, the physician will evaluate the individual's sense of well-being to detect mood disorders; depression or other disorders that can cause memory problems, loss of interest in life, and various symptoms that may overlap with dementia (Alz.org 2020).

A standard medical workup for Alzheimer's disease often includes structural brain imaging with MRI or CT; these tests are primarily used to rule out other conditions that may cause symptoms similar to Alzheimer's but require different treatment. Structural imaging can reveal tumors, evidence of small or large strokes, and damage from severe head trauma or a buildup of fluid in the brain (Alz.org 2020).

Magnetic resonance imaging (MRI) is a noninvasive medical test that helps the physicians to diagnose and treat medical conditions. The MRI uses a powerful magnetic field, radio frequency pulses and a computer to produce detailed pictures of organs, soft tissues, bone and virtually all other internal body structures (Alz.org 2020).

Computed tomography, more commonly known as a CT or CAT scan, is a diagnostic medical test that, like traditional x-rays, produces multiple images or pictures of the inside of the body. The cross-sectional images generated during a CT scan can be reformatted in multiple planes and can even generate three-dimensional images (Alz.org 2020).

These images can be viewed on a computer monitor, printed on film or transferred to a CD or DVD. CT images of internal organs, bones, soft tissue and blood vessels typically provide greater detail than traditional x-rays, particularly of soft tissues and blood vessels (Alz.org 2020).

Imaging technologies have revolutionized the understanding of the structure and function of the living brain (Alz.org 2020).

MANAGING BEHAVIORAL ISSUES

Healthcare professionals, caregivers, friends and families need to understand appropriate strategies to use when they are caring for the individual with Alzheimer's disease. When the individuals become agitated, combative and uncooperative, this is often related to the feelings of confusion that the individual might be experiencing. They may also become very frightened and display these behaviors (Alz.org 2020).

Caregivers, friends or family may become impatient and not understand the effect that Alzheimer's disease has on the individual. Therefore, the caregivers must seek information and become educated about the disease and behavioral management. Seek information, education and support from the healthcare professional/ provider (Alz.org 2020).

Some behaviors may include:

- Agitation
- Combative / fighting
- Frequently calling out
- moving belongings frequently
- Going through belongings repeatedly
- Pacing back and forth
- Pulling out intravenous lines
- Pulling out catheters

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- Resisting baths or shower
- increase agitation and restlessness in the evening
- Trying to climb out of bed or chair (Alz.org 2020).

To assist when Confusion / agitation is noted:

- Modify the environment. For example, reduce clutter, reduce loud noises such as turning the radio or television volume down.
- Keep the individual on a regular schedule to avoid changes whenever possible. Changes in routines can be stressful and lead to more confusion.
- Remember to anticipate the needs of the individual with Alzheimer's disease. They may not be able to express hunger, pain or discomfort which might be adding to the confused or agitated behavior.
- If the individual can still read and understand, make signs and labels for example, labeling drawers, label pictures of family and friends with names to help keep the person oriented. Also place the individual's picture on the door to his/her room.
- If the individual is resisting bath or refusing to shower, wash part of the body in the morning and part at night or use disposable moistened washcloths does not require rinsing (Alz.org 2020).
- If he /she is pacing, do not try to prevent that unless there is potential for harm. Sometimes you can try to distract the individual with another activity such as, using games, songs, humor, or snacks. Sometimes this will help and at other times the individual will go back to the pacing activity.
- Participate in activities that the individual enjoys. For example, playing simple card games such as matching cards and other activities; looking at pictures, singing, coloring, going for a walk or watching television; favorite movie, sport, or musicals.
- Remove dangerous items, such as knives, scissors, and lighters.
- Give directions or explain information in simple language using only one or two steps and break up tasks.
- Provide simple clothing that does not have buttons or zippers. This will make it easier for the individual to dress (Alz.org 2020).

Make sure proper pain management is in progress as needed and meals and fluids are provided. Also assist with meals to ensure that he/ she is receiving adequate nutritional and fluid intake and is having an adequate amount.

PROVIDING SUPERVISION

The individual with Alzheimer disease will require supervision. The family members and / or caregivers may need to stay with him /her to ensure safety, prevent them from injuring themselves or just to reassure them (Alz.org 2020).

SLEEP ISSUES

Individuals with Alzheimer's and dementia may have difficulty sleeping or increases in behavioral problems that begin at dusk and last into the night; this is called sundowning. Scientists do not completely understand why persons with Alzheimer's disease and dementia experience sleep disturbances (Alz.org 2020).

As with changes in behavior and memory, sleep changes somehow result from the impact of Alzheimer's disease on the brain (Alz.org 2015).

Some studies indicate as many as 20% of individuals with Alzheimer's disease will experience increased anxiety, confusion and agitation beginning late in the day (Alz.org 2020).

Others may have more trouble or changes in their sleep schedule and develop restlessness during the night. This disruption in the sleep-wake cycle may lead to more behavioral problems (Alz.org 2020).

Some factors that can contribute to sundowning and sleep disturbances include:

- End-of-day physical and mental exhaustion
- An upset in the internal body clock that causes a biological mix-up between day and night,

- Less need for sleep, which is common among the older adults,
- Decreased lighting and increased shadows which causes the individual with Alzheimer's disease to misinterpret what they see, and become frightened and confused
- Disorientation because of the inability to separate the dreams from reality when sleeping,
- Reactions may arise from nonverbal cues of frustration they receive from caregivers who are exhausted from their day (Alz.org 2020).

COMMUNICATING WITH THE HEALTHCARE PRACTITIONER

Discuss sleep disturbances with the physician or health care professional, to assist in identifying the causes and the possible solutions. Some physical illness, for example problems with incontinence or urinary tract infections, sleep apnea; abnormal breathing pattern in which an individual briefly stop breathing sometimes at night, or restless leg syndrome can cause or worsen their sleep problems (Alz.org 2020).

For sleep issues due primarily to Alzheimer's disease, most experts encourage the use of non-drug measures, rather than medication. In cases where non-drug measures or approaches fail, medication may be prescribed for agitation during the late afternoon and evening hours. Discuss with the physician to learn both the benefits and risks of medications before making a decision (Alz.org 2020).



Some coping strategies for sleep issues and sundowning:

- Schedule more active days. The individual who rests most of the day is more likely to be awake and restless at night. Reduce afternoon naps and plan challenging activities that will keep him/ her awake through the day. For example, plan trips, activities he/ she enjoys, regular daily exercise, but no later than four hours before bedtime
- Ensure there is adequate lighting within the home in the evening. Adequate lighting may reduce the agitation that occurs when the surroundings are unfamiliar or dark.
- Encourage persons with dementia to stick to a regular routine of waking up, going to bed, mealtimes. This will allow for more restful sleep at night.
- Make the sleep environment safe and comfortable for the individual with Alzheimer's. Ensure that it is at a comfortable temperature, has nightlights and measures to keep the person safe. Ensure that the door and window have locks. Motion detectors and door sensors can be used to alert the caregiver and/ family members when the person is wandering, as well as safety systems such as Comfort Zone.

- The family and caregivers need to be mindful of their own physical and mental exhaustion. If the family or caregivers are feeling stressed by the late afternoon, the individual may pick up on it and become agitated or confused.
- Avoid nicotine and alcohol and restrict caffeine and sweets intake to the morning hours. Avoid large meal in the evenings but have the large meal at lunch and keep the evening meal simple.
- Identify and limit triggers. Limit / reduce environmental distraction especially during the evening hours; for example, chores, television, children visiting and loud noise or music.
- The caregiver / family may join ALZ Connected, the online support community and message boards, and share their experience with others, share what response strategies have worked and also get ideas from other caregivers (Alz.org 2020).

WANDERING

The Alzheimer's Association declares that 6 in 10 people with dementia will wander. The individuals with Alzheimer's may not remember their name or address, and may become disoriented, in strange and even in familiar environment. Wandering among individuals with dementia is dangerous (Alz.org 2020).

The Alzheimer's Association offers programs that is designed to assist in the monitoring and return of those who wander such as:

- MedicAlert[®] + Alzheimer's Association Safe Return[®] is a nationwide identification program designed to save lives by facilitating the safe return of those who wander.
- Comfort Zone[®] and Comfort Zone Check-In[®] allow families to monitor a person with dementia's whereabouts remotely by using Web-based location services (Alz.org 2020).



Any individual who is able to ambulate and has memory problems is at risk for wandering. This can occur at any stage of dementia, even the early stages. They may become confused or disoriented for a period of time. It is vital to plan ahead for this type of situation. Be aware of warning signs such as:

- Make statements such as "I want to go home" or tries to go home, even when at home
- Appears lost in a new environment or changed environment
- Comes back from a regular walk later than usual
- Returns from a drive later than usual
- Has trouble locating familiar places such as the bedroom or bathroom
- Restlessness and pacing
- Wants to fulfill former obligations, for example going to work
- Asking for location of friends or family (Alz.org 2020).

STEPS TO HELP LOWER THE CHANCE OF WANDERING



- Create a daily plan. Have a routine in place to carry out daily activities. This will provide structure.
- Always provide supervision. Do not leave the individual with dementia alone at home or leave him/ her in a car alone.
- Avoid busy places that can be confusing and may cause disorientation such as the grocery store or the shopping mall.
- Use devices that will signal when a window or door is opened. For example, place a bell above the door.
- Try to identify the most likely times of day the wandering can occur and plan the activities at that time. Exercise and activities can help to reduce restlessness, agitation and anxiety.
- Reassure the individual if he or she feels disoriented or lost. If he /she wants to leave to go to work or to go home, use effective communication that is focused on exploration and validation.
- Ensure that all the basic needs are met. Make sure that he/she has been to the bathroom or is not hungry or thirsty.

- Place the locks out of the sight. Install them either high or low on exterior doors, and place slide bolts at the top or bottom.
- Camouflage the doors and the knobs. Camouflage the doors by painting them the same color as the wall or cover them with removable curtains or screens. Cover the doorknobs with cloth the same color as the door. Childproof knobs may also be used.
- Keep the car keys out of their sight. The persons with dementia may be able to drive off and become lost or be at risk of harm to themselves or to others.
- If night wandering is a problem, limit fluids two hours before bedtime and make sure he/ she use the bathroom just before going to bed (Alz.org 2020).

MISSING

When someone with dementia is missing, immediately begin search and rescue efforts. 94% of people who wander are found within 1.5 miles of where they disappeared. Caregivers / families need to have a plan in place in the event that their love ones go missing. With a plan in place they will know what to do in case of an emergency (Alz.org 2020).

- Provide the person with ID jewelry. Enroll him/ her in MedicAlert[®]+ Alzheimer's Association Safe Return[®]
- Have a list of people to call on for help. Have their telephone numbers easily accessible.
- Keep a close-up, resent photograph, and updated medical information to give to the police.
- Keep a list of places where he/ she may wander such as former jobs, previous homes, church or a restaurant.
- Ask neighbors, families and friends to call if they see the person alone.
- Know your neighborhood. Locate dangerous areas near the home, for example lakes, pool, open stairwells, tunnels, dense foliage, bus stops etc.
- Note if the individual is right or left-handed. Wandering generally follows the direction of the dominant hand.

- Consider having the individual wear or carry an electronic tracking GPS device that helps manage location. Comfort Zone[®] and Comfort Zone Check-In[®] are two options.
- If the he/ she does wander, search the immediate area for no more than 15 minutes (Alz.org 2020).



Call "911" and report to the police that a person with Alzheimer's disease, a "vulnerable adult" is missing. A Missing Report should be filed and the police will begin to search for the individual. In addition, a report should be filed with MedicAlert+ Alzheimer's Association Safe Return at https://www.alz.org/help-support/caregiving/safety/medicalert-with-24-7-wandering-support (Alz.org 2020).

First responders are trained to check with MedicAlert+ Alzheimer's Association Safe Return when they locate a missing person with dementia (Alz.org 2020).



Medication Safety

The individual with Alzheimer's disease or other dementia may be prescribed multiple medications; they might also be taking medications for other conditions at the same time. Extreme caution should be taken (Alz.org 2020).

Some safety tips to help prevent medication problems include:

- Coordinating medication management with all involved in the person's care. The individual with Alzheimer's may be under the care of several physicians / Health care professionals. Ensure that all the physicians / Health care professionals know about all prescriptions and over-the-counter vitamins, herbal supplements and other medications. Teach the family and caregivers to always take a list of current medications and dosages to every appointment (Alz.org 2020).
- If the person with Alzheimer's has difficulty swallowing, ask if the medication is available in another form. The liquid version may be available. Sometimes the medication can be crushed and mixed with food but ask the physician or pharmacist before doing so because crushing some medications may cause them to be unsafe or ineffective (Alz.org 2020).



Fig. liquid medications

- Ask the physician or the pharmacist to check for any possible drug interactions. every time that a new medication is ordered or prescribed, find out if it is okay to take it with the other medications that he/ she is also taking and tell the physicians / Health care professionals and all involved in the team, of any allergies or side effects to medications (Alz.org 2020).
- Teach the families and/ or caregivers to take all medications as directed. Never make changes to dosage without talking the physician who prescribed the medications. Also encourage them to update the physician / Health care professionals if side effects or the cost of the medications are an issue. There may be solutions or other option available (Alz.org 2020).
- Teach the families and/ or caregivers to educate themselves about every medication, including the name, dosage, purpose, frequency, when to give the medicine, how to administer and if there are any possible side effects. Remind them that if side effects occur, to report them to the physician / Health care professionals right away (Alz.org 2020).
- Teach the families and/ or caregivers to always keep medication records. Keep a written record of all current medications, including the name, dosage and starting date. Consider signing up for an online personal health record so that the information can be available / accessed at any time or carry a medication list in the purse or wallet. This medication record will be vital if the individual is experiencing a medical emergency, a serious drug overdose or interaction (Alz.org 2020).

Methods for administering medications to the individuals with Alzheimer's

In the early stages of Alzheimer's disease, the individual with dementia will possibly need help in remembering to take medications. The family / caregiver may use the following approach:

Utilize a pill box organizer.
Using a pill box will help to make sure that the medications are taken as ordered / prescribed. There are various types and sizes of pill boxes. Some will have weekly organizers, monthly, three times and so on (Alz.org 2020).



- Develop a daily routine for giving the medications. Create a daily ritual. Find out from the pharmacist if medications should be taken at a certain time of day or with or without food. Therefore, the medications may be given with breakfast, with lunch or just before bedtime, as applicable (Alz.org 2020).
- Keep a daily list or calendar can help ensure medication is taken as prescribed; check off each medication as it is taken (Alz.org 2020).

As the Alzheimer's disease progresses, the family / caregiver will need to provide a greater level of care. Some additional tips include:

- If the patient refuses to take the medication, stop and try again later.
- Use clear instructions / simple language when assisting with the mediations
- Make safety changes, for example
 - Store medications in a locked cabinet or drawer to avoid accidental overdose,
 - Throw out medications that are no longer being used
 - Throw out medications that have expired.
- Always have emergency numbers in easy reach. Keep the number of the local poison control center
- If you suspect a medication overdose, call poison control center or 911 before taking any action (Alz.org 2020).

MEDICATION INTERACTIONS

Some medications may interact with other medications, various herbs, foods, supplements and drink for example, alcohol. Medication interactions can cause the medication that the patient is taking, to be less effective, or cause unexpected side effects, or cause an increase action of a particular medication. Some drugs interaction can be very harmful to the patient. Always read the medication label for every prescription and nonprescription medications.

Take the time to learn about the medication interactions. You will reduce the risk of potentially harmful medication interactions and / or side effects.

Medication interactions fall into three categories:



Drug to drug interaction occur whenever two or more medications react with each other. This drug-drug interaction may cause the patient to experience an undesired side effect / reaction, for example, patient who takes a blood thinner e.g. Coumadin and then takes aspirin for a headache will increase the risk of bleeding.



Drug to food / beverage interactions result from medications reacting with the food or drink. For example, having alcohol with some medications may cause the patient to feel sleepy or slow his/ her reaction.



Drug to condition interactions may occur when the patient has an existing medical condition / disease that makes some medications potentially harmful. For example, patients with high blood pressure may experience an undesired reaction if he/she takes a cough or decongestant medication.



SIDE EFFECTS

A side effect is also known as an adverse effect, adverse event, or undesirable secondary effect when a medication or treatment goes beyond the desired effect and causes or leads to a problem (an undesirable secondary effect). Some side effects are not life threatening but others can be life threatening.

Side effects vary for each patient/ individual, and depend on different factors such as;

- the patient's general health,
- age,
- the stage of their disease,
- weight and
- Gender.

Adverse drug reactions

Adverse drug reactions are serious, and they can also lead to death. Some medications also have toxic effects. Learn about the possible adverse drug reactions, side effects and the toxic effects of all the medications that the patient is taking so that you can report them.

MEDICATION DOSE / DOSAGE

All medications have prescribed amount or dosage ranges for the adults and for children. Older patients are at greater risk for adverse drug events because of the metabolic changes and decreased medication clearance that is associated with the aging process. Some adult dosages may be lowered for the older patient because they are more susceptible to adverse medication reactions, side effects, overdose and even toxicity.

Toxicity

Toxicity is the degree to which a substance "a toxin" can cause harm to humans or animals. Acute toxicity involves the harmful effects in an individual or organism through short-term exposure. Subchronic toxicity is the ability of a toxic substance to cause effects for more than one year but less than the lifetime of the exposed organism. Chronic toxicity is the ability of a mixture of substances or a substance to cause harmful effects over an extended time period, usually upon continuous or repeated exposure, that can sometimes last for the entire lifetime of the exposed organism/ individual.

DRIVING

An individual with Alzheimer's disease will eventually become unable to drive. Driving requires fast decision making and quick reaction time.

HOME SAFETY

- Within the home, ensure safety measures are in place. As Alzheimer's disease progresses, the person's abilities also change therefore teach families / caregivers to adapt the home environment to support the changes. Assess the home. Look for objects that could injure the individual. Identify areas that may be potential for danger. Lock and disguise areas that are hazardous. As mentioned before, cover doors and locks or camouflage the doors by painting them the same color as the wall or cover them with removable curtains or screens; reduce incident of wandering. Install locks out of sight. Place deadbolts high or low on exterior doors to make it difficult for the individual to wander out of the house. Remove locks in bedrooms or bathrooms so he/ she cannot get locked inside (Alz.org 2020).
- Make sure there is adequate light in walkways. Add extra lights to doorways, areas between rooms, stairways, and bathrooms. Utilize night lights in hallways, bathrooms and bedrooms to reduce disorientation and prevent accidents (Alz.org 2020).
- Make sure the environment is clutter free. Keep the floors and other surfaces clutter-free. Be careful of rugs and mats that may cause fall with injuries. Remove other objects such as coffee tables, excessive foot stools (Alz.org 2020).
- Always place medicines in a locked drawer or cabinet (Alz.org 2020).
- Monitor the water temperature and the temperature of meals. The individual with Alzheimer's disease may have difficulty and unable to tell the difference between cold and hot. Set the water temperature at 39 degrees Celsius (102F) or less to prevent burns /scalding. Bath water temperature should be just a degree or two higher than normal body temperature (Alz.org 2020).
- Make sure that safety devices are working properly. Check smoke detectors, fire extinguishers and carbon monoxide detectors (Alz.org 2020).
- Remove guns and other weapons. The presence of a weapon in the home of an individual with dementia may lead to unexpected danger / injury. Dementia may cause the person to believe that a family or caregiver is an intruder, and he /she may react (Alz.org 2020).

RISK FOR ABUSE

Individuals with Alzheimer's disease are at risk for abuse because they often are unable to speak for themselves or too confused or frightened. The healthcare provider should report any abuse that is suspected. Abuse may be emotional, physical, verbal, financial and sexual abuse (Alz.org 2020).

The Florida Department of Elder Affairs is dedicated to ensuring that the safety and well-being of the elders in Florida is maintained.

The Department works with the Department of Children and Families (DCF), Adult Protective Services and the Aging Network to protect elderly persons or disabled adults from further occurrences of abuse, exploitation, or neglect. Services that are provided may include protective supervision, placement, and in-home and community-based services.

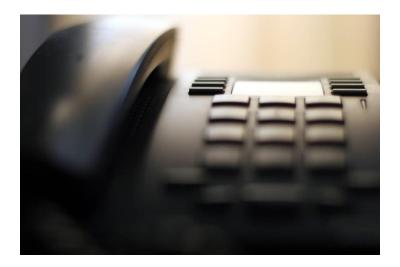


REPORTING ABUSE

HOW TO REPORT ELDER ABUSE, NEGLECT AND EXPLOITATION

By Phone: Call Florida Abuse Hotline at 1-800-96-ABUSE (1-800-962-2873). Press 1 to report suspected abuse, neglect or exploitation of the elderly or a vulnerable adult. This toll-free number is available 24/7.

TDD (Telephone Device for the Deaf): 1-800-453-5145 **By Fax:** To make a report via fax, please send a detailed written report with your name and contact telephone to 1-800-914-0004.



Various settings for different levels of care

There are several types of care ranging from skilled nursing care to senior living. They vary depending on the level of assistance that is required by the patient /resident. The individual with Alzheimer's and Dementia will require a setting that ensures supervision, and assistance with activities of daily living.

Various settings include:

- □ Senior Communities
- □ Continuing Care
- □ Home Health Care
- □ Board and Care/ group home
- □ Skilled Nursing facility.

Senior Communities

□ Senior housing is designed for the elderly who are high functioning, which refers to those who do not require assistance with ADLs.

□ Senior communities are often neighborhoods that are limited to elderly of a certain age group.

□ They are developed for active seniors and they often provide a variety of social clubs for example arts and crafts, bingo, golf, cards, and other social activities.

Some senior communities also offer additional levels of care; many are not equipped for the elderly individuals who require assistance with ADLs. At times, the individual may require some assistance through home health care for a short period of time.

Continuing Care

□ Continuing care communities are sometimes called progressive care facilities.

□ They frequently offer a broad range of options; from independent living to special care.

□ The residents are often admitted when they live independently but as their need changes or increases, they are guaranteed vacancies in another level of care.

Home Health Care

There has been an increase in the number of patients who require continuing

professional medical services when they return home. Professional home health care

services include a variety of care and support services for patients;

- \Box Who are disabled,
- □ who are recovering from a hospital stay,
- $\hfill\square$ who are chronically ill and
- □ who are terminally ill.

These patients need medical, nursing, social, or therapeutic treatment and assistance with their day to day activities of daily living.

Home health care services are usually provided by home Health care

agencies /organizations.

There are many home health care organizations, such as:

- □ Medicare certified home health care agencies,
- □ Medicare and Medicaid certified home health care agencies,
- □ Hospices,
- □ Homemaker agencies,
- □ Staffing and private duty nursing agencies.

There are also many other companies that the home health care organizations may use to deliver specialized services and products including but not limited to:

- □ Medical equipment (DME) and supplies,
- \Box pharmaceuticals, and
- □ Drug infusion / IV therapy.

Home health care agencies provide care for patients of all ages, from infants to the elderly population. Often times they offer comprehensive services;

These services may include, but are not limited to the following:

□ Skilled nursing

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□ Rehabilitation therapies: physical therapy, occupational therapy & speech language

- □ Medical social services
- □ counseling
- □ Case management
- \Box Home health aide services.

Home health care agencies may also offer specialized care such as:

- □ Infusion therapy
- □ Hospice and palliative care
- □ Parental and enteral nutritional therapy
- □ Home safety instructions
- □ Telemedicine
- □ Vaccination
- □ Behavioral and mental health counseling
- □ Educational advice
- □ Wound care
- □ Home medical equipment
- □ Pain management.

Board and Care/ group home

□ Board and care / group home setting is similar to assisted living in terms of care.

□ This is often a single-family dwelling which has been converted into a residence for elderly and/ or disabled residents.

□ The monthly rent commonly includes room, meals, laundry services, 24-hour staffing and some transportation.

□ Basic medical care can be attended to, however residents who have more serious medical conditions will be expected to move into a more appropriate facility to meet their needs.

Skilled Nursing facility (SNF)

□ Skilled nursing facility (SNF) is a level of care that is licensed to administer medical treatment with nurses Licensed Practical Nurses (LPN), Registered Nurses (RN) and Certified Nurses Assistants (CNA).

□ Skilled nursing facility (SNF) offers extensive nursing services for the residents.

Admission must be initiated by the individuals' physician, who recommends that the patient needs either rehabilitation care or a special care facility.

□ Rehabilitation care programs are located in hospitals or long-term care, skilled nursing facilities/ nursing homes.

□ Rehabilitation care programs provide intensive medical care for patients who are expected to regain functional capacity and return home in a short time.

Special care facility

□ There are different types of special care facilities: some are involved with special medical issues and others manage behavioral problems that may arise from dementia/ Alzheimer's.

The patients are often admitted to a skilled nursing facility to address an acute condition for example, rehabilitating a fractured hip, or for treating an infection with intravenous (IV) antibiotics.

Many skilled nursing facilities have a portion of their residents who are long- term care patients. These are patients who require the treatment capabilities of a Skilled Nursing facility (SNF), but their status /condition requires that level of care permanently.

Long-term care includes nursing supervision and is focused on maintenance as opposed to curative care. The condition is not expected to improve, the nursing activities are focused on keeping the individual healthy, safe and function at the most optimal level within that person limits.

It is especially important to ensure that the individual with Alzheimer's and Dementia is in the appropriate setting.

CONCLUSION

When providing care for the patients / residents with Alzheimer's disease and dementia, all personnel who are involved with or will be apart of the patient's care planning, should have training and be knowledgeable regarding appropriate behavior and medication management, safe environment for the patient / resident, assistance with activities of daily living, stress management for the caregiver, family issues, activities for the patient /resident, ethical issues as well the total well-being and medical management of the patient / resident.

Alzheimer's disease is a type of dementia that causes the individual to experience problems with memory, thinking and behavior. The symptoms usually develop slowly, and they become worse over time. The symptom become so severe that they interfere with the individual 's daily tasks. Alzheimer's is not a normal part of aging, although the greatest known risk factor is increasing age, and the majority of people with Alzheimer's are 65 and older. But Alzheimer's disease is not just a disease of old age (Alz.org 2020).

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