





Supportive Pathways Education Program

Module 3

Normal Aging Changes
&
Disease Processes in Dementia


The slide has a purple header bar with the text 'Supportive Pathways Education Program'. Below this, 'Module 3' is underlined. The main title 'Normal Aging Changes & Disease Processes in Dementia' is centered. To the right is a black and white icon of a human head profile with three interlocking gears inside. The Carewest logo is in the bottom right corner.

Objectives

To increase knowledge of normal aging changes


To increase knowledge of the types of dementia

To discuss the stages of dementia


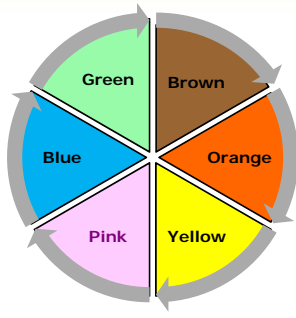
The slide has a purple header bar with the title 'Objectives'. Below the header, there are three horizontal lines, each followed by an objective. The Carewest logo is in the bottom right corner.

Normal Changes of Aging Challenge

- **Brown** – digestive and urinary system
- **Orange** – sleep/rest and sexuality
- **Yellow** – senses
- **Pink** – skin and temperature control
- **Blue** – respiratory and cardiovascular
- **Green** – mobility and safety

The slide has a purple header bar with the title 'Normal Changes of Aging Challenge'. Below the header is a bulleted list with six items, each with a colored dot and a system name. The Carewest logo is in the bottom right corner.


Normal Aging Changes Game

The slide has a purple header bar with the title 'Normal Aging Changes Game'. Below the header is a circular diagram divided into six equal segments, each with a color and a label: Green (top-left), Brown (top-right), Orange (right), Yellow (bottom-right), Pink (bottom-left), and Blue (left). Arrows indicate a clockwise flow between the segments. The Carewest logo is in the bottom right corner.

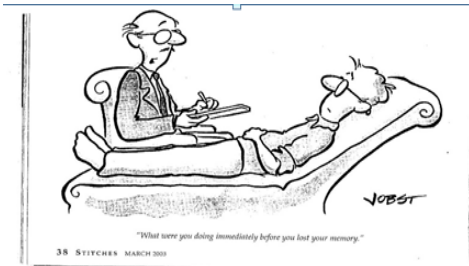
Dementia

Dementia is a disease process that affects memory and cognition

These changes impact normal daily routines

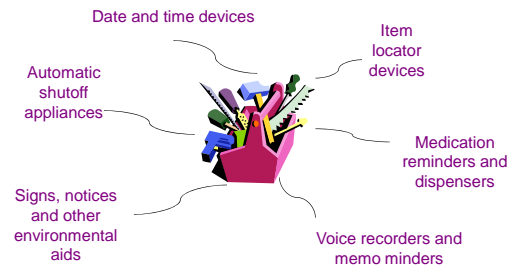
The slide has a purple header bar with the title 'Dementia'. Below the header, there are two lines of text. The Carewest logo is in the bottom right corner.

"What were you doing immediately before you lost your memory?"



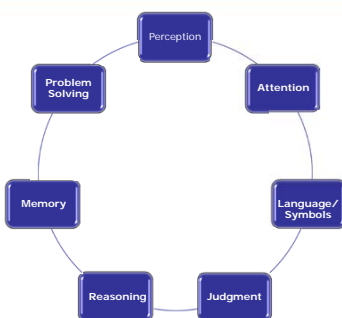
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Toolbox-Memory Loss

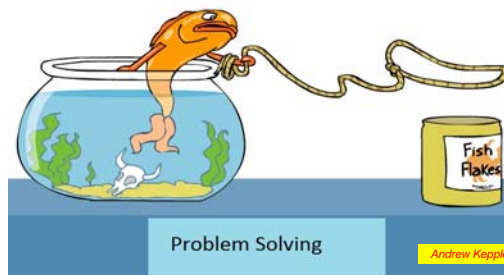


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What is Cognition?



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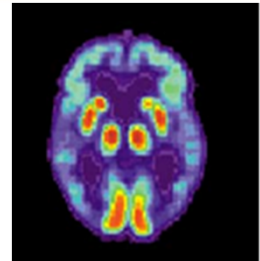
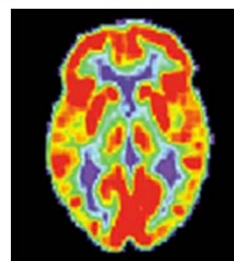
Medical Work-up for Cognitive Problems

- Not all memory loss is dementia
- Other possible causes include:
 - Low B12
 - Low thyroid
 - Brain tumours
 - Side-effects of medications
 - Alcohol abuse
 - Poor vision and/or difficulty with hearing
 - Delirium
- Correcting these conditions may result in improved memory/cognition

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Normal PET Scan

Alzheimer PET



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Mild Cognitive Impairment (MCI)

- Have problems with memory that are noticeable to themselves or others but do not interfere with daily life
- Not everyone diagnosed with MCI will develop Alzheimer's Disease but their risk is increased



Dementia/Delirium/Depression

- Often referred to as the 3 Ds
- It is important to know the differences as individuals may have one or a combination of two or three of these conditions
- They all can effect memory and cognition



Delirium

A temporary reversible or correctable state of confusion that is treatable.



Delirium and Dementia Quiz

1. Can delirium occur in people with dementia?
2. What could cause delirium? (give 4 examples)
3. Is it reversible? (How long could it last?)
4. What are the presenting signs that help us recognize it is delirium not just dementia? (How are they different than dementia?)



Signs and Symptoms of Delirium

- Starts **suddenly** and changes throughout the day (often worse at night)
- **Inattention:** can't focus on instructions
- **Disorganized thinking:** jumps from topic to topic
- **Change in awareness:**
 - hyper-alert (wide eyes, jumpy), OR
 - very withdrawn, sleepy (may have both)



Depression - a treatable condition

Symptoms may include:

- confusion
- depressed mood
- loss of interest or pleasure in life nearly everyday and for most of the day
- social isolation
- irritability
- physical complaints
- suicidal thoughts



Depression and Dementia

Depression is common in persons with dementia but what are the differences?

With depression:

- There is a change in their level of interest
- Treatment can be effective
- Likely to be concerned about their memory impairment
- Frequent physical complaints are common
- Sleep is often affected
(e.g. early waking or sleeping excessively)



Dementia Umbrella



Degenerative Dementias

- Alzheimer's Disease
- Vascular
- Lewy Body
- Frontotemporal
e.g. Pick's

Secondary Dementias

- Parkinson's
- Huntington's
- MS
- Down's Syndrome



Dementia Umbrella



Toxicity

- Alcohol-Korsakoff's
- Lead and Mercury
- Drug Abuse

Infectious

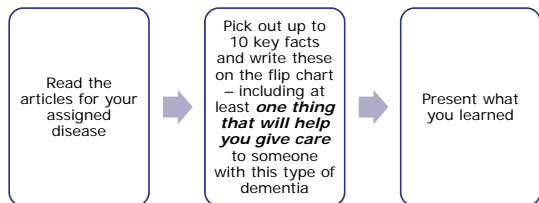
- Aids
- Creutzfeldt-Jacob
(Mad Cow)

Other

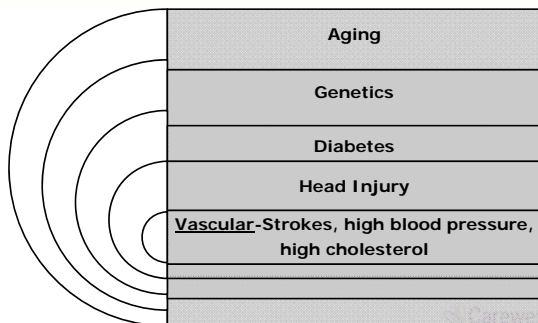
- Brain Tumor
- Head Injury
- Normal Pressure Hydrocephalus (NPH)



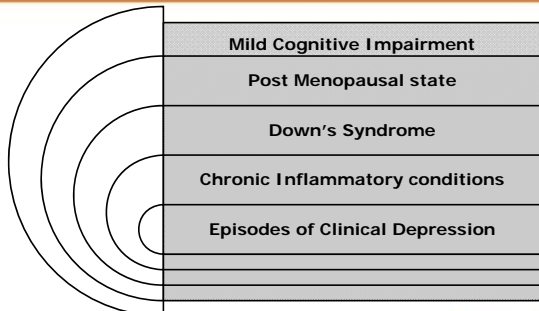
Learning About The Diseases



Risk Factors



Risk Factors




Reduce your Risk

- Being physically active
- Eating healthy foods
- Keeping your brain challenged
- Reducing stress
- Maintaining normal blood pressure, cholesterol, blood sugar
- Avoid brain injury-wear your helmet, reduce fall risk
- Keep socially active

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Alzheimer's Disease

"Death by a thousand subtractions"




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Answer these questions as you watch the video



The left side of the brain is responsible for:



The right side of the brain is responsible for:



The 6 major areas of the brain are:

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Stages of Alzheimer's Disease - Early

- Forgetfulness
- Communication difficulties
- Changes in mood and behaviour
- Diagnosis may occur or may not be confirmed until later stage
- Live in the community and need little help

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Personality Changes

"I can suddenly become anxious or angry for no apparent reason."

"I cry easily and often feel oversensitive when I have a day with too many tasks to do."

"Sometimes I feel frustrated."

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Stages of Alzheimer's Disease - Middle

- Thinking and memory continue to deteriorate but many are still somewhat aware of their condition
- Need help with many daily tasks - ADL and IADL
- Disorientation to time and place
- Sense of loss or insecurity E.g. Velcro stage

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Stages of Alzheimer's Disease - Late

- Severe memory loss. Lose recognition of family.
- Loss of communication abilities- words or phrases
- Incontinence
- Lose ability to walk without help
- Swallowing problems, weight loss
- Require total care so often are in a facility



FAST (Functional Assessment Scaling Tool)

- Another tool used to describe the progression of **Alzheimer's Disease**
- Developed by Dr. Barry Reisberg in 1982
- Includes Stages 1-7
- Based on the concept that people with Alzheimer's Disease lose their abilities to do things in the opposite order that we gained them
- This awareness helps us understand what types of assistance may be needed



FAST Stages

FAST Stage	Description
Stage 1,2,3	Normal Function Stage 1,2. Stage 3 Mild Cognitive Impairment
Stage 4	Mild Alzheimer Disease Decrease in memory apparent. Needs help for complex tasks.
Stage 5	Moderate Alzheimer Disease Remote memory loss starts. Unable to live alone.
Stage 6 (has 5 sub-stages)	Moderately Severe Alzheimer disease Incontinence. Fear of bathing. Increase in behavioural disturbances.
Stage 7 (6 sub stages)	Severe Alzheimer disease Speech limited. Physical rigidity. The client will die in this stage.

End of Life for Those with Dementia

- Dementia is a terminal disease
- No longer accept food or drink
 - tube feeds or IVs are not appropriate
- Can still experience pain and anxiety
- Can still hear what is being said around them
- Often feel cold – need warmth
- Require palliative care - comfort/kindness
- Families often need our care and support

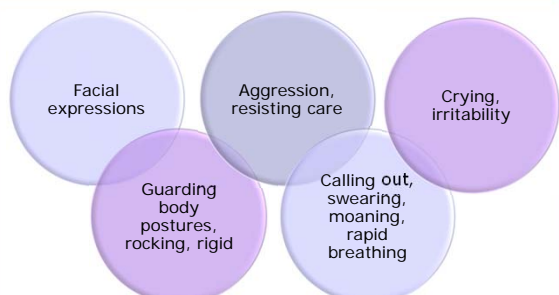


Pain

Myth:
People with Dementia do not feel pain.



Common Pain Behaviours



Dementia

"You wouldn't ask a person with COPD to 'just breathe better' would you?"

Of course not,

but we do catch ourselves expecting someone with dementia to 'behave better'

– this is a disease of the brain!



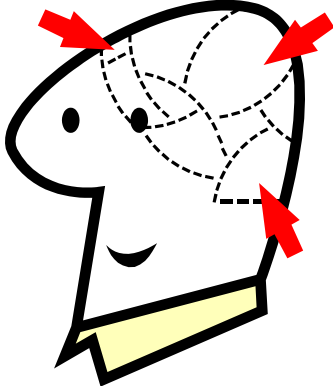
Questions?



Please refer to your handouts (references are included)



Video: *The Link Between Brain and Behaviour*



The left side of the brain is responsible for:

The right side of the brain is responsible for:

The major areas of the brain are:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Dementia	Delirium	Depression
<u>Onset</u> : Months to years, slow progression	<u>Onset</u> : Sudden, within hours or days	<u>Onset</u> : Weeks or months
<u>Memory</u> affected: Short and then long term	<u>Memory</u> : MAY be affected (may remember after!)	<u>Memory</u> : MAY be affected
<u>Cognition affected</u> : language; perception; motor abilities; judgement	<u>Cognition</u> : impaired +, Problems: inattention, disorganization of thoughts	<u>Cognition</u> : feelings of hopelessness often present
<u>Awareness</u> : Usually normal	<u>Awareness</u> : Affected & fluctuates! HYPER or HYPO alert	<u>Awareness</u> : May be impaired (agitated or ↓energy)
<u>Sleep</u> : May have fragmented sleep – more confused at bedtime	<u>Sleep</u> affected (Delirium worse at night)	<u>Sleep</u> : Disrupted often: sleep more, or very little with early waking

Types of Dementia

It is important to know what type of dementia the client has as it may help in planning care and knowing what symptoms are parts of the disease process. The following are just some of the causes of dementia. Refer to the slides “dementia umbrella” for other causes. Some clients may have more than one type of dementia as Alzheimer’s and Multi-infarct dementia often occur in the same person.

ALZHEIMER DISEASE – Alzheimer disease is believed to be caused by abnormal proteins collecting in the brain (plaques and tangles) that cause brain cells to die and interfere with the transmission of messages throughout the brain. Decline in function is generally described as a gradual loss of abilities over several years. (Genetically inherited Alzheimers Disease affects less than 10% of those diagnosed.)

DEMENTIA WITH LEWY BODIES – This is now thought to be a frequent cause of dementia. There is no test to diagnose Dementia with Lewy Bodies so diagnosis is based on clinical features. It usually progresses more rapidly than Alzheimer disease. Hallucinations (usually visual) and early gait disturbance and falls are a feature of this type of dementia. Abnormal cells called Lewy bodies are found in an area of the brain stem also affected in Parkinson’s disease (PD) as well as in the cerebral cortex. They may exhibit many of the features of Parkinson’s disease but are milder than classical PD. The person with this type of dementia may experience fluctuations in their mental status, level of alertness and syncopal spells. Because confusion is not always there, caregivers may think they are pretending or may ask too much from them thinking they are capable. Psychotic features such as delusions and sleep disturbance (excessive sleep or abnormal movements during sleep) are also features of the disease.

These clients may benefit from cholinesterase inhibitor agents such as Aricept. Neuroleptic drugs should not be used or used with extreme caution with this type of dementia as they may cause a dramatic worsening of the condition.

DOWN’S SYNDROME - Is attributed to triplication and over-expression of amyloid precursor protein (APP) – believed to be influenced by chromosome 21, earlier age onset. Decreased risk of Alzheimer’s associated with increased survival with partial, trisomies and atypical karyotypes. (1) Men with Down’s Syndrome are 3 times as likely to develop Alzheimers by age 65. More study is needed with larger sample sizes.

KORSAKOFF’S SYNDROME – This disorder is caused by a lack of thiamine (Vitamin B1), which affects the brain and nervous system, rather than by alcohol directly. Brain damage occurs in the mid part of the brain resulting in severe short term memory loss. Many other abilities may remain intact. They may have a lack of insight re: their memory loss.

FRONTOTEMPORAL DEMENTIA – Can be genetically inherited, differs from Alzheimer’s Disease in that there are no amyloid senile plaques or tangles.

PICK’S DISEASE – Pick’s disease is a rare disorder which has an early onset (age 40 to 60). Brain cells are found to be swollen and abnormal (Pick cells). This type of dementia affects mainly the frontal and temporal lobes. They have less memory loss and more personality change and socially inappropriate behaviour. There is a failure to recognize objects, changes in sexual behaviour and sometimes there is a craving for carbohydrates. There is early language loss and eventually mutism. There is no cure or treatment.

VASCULAR DEMENTIA (MULTI-INFARCT DEMENTIA) – Vascular dementia is caused by a single or multiple small infarcts (strokes) that interrupt blood flow causing the brain tissue to die.

It is often described as progressing in a step-wise manner. The person may have a sudden decline, level out or improve for awhile then decline again if a new infarct occurs. Deficits seen will depend on the areas of the brain affected. Some of these infarcts produce no obvious symptoms and a person may have several before noticing changes in function.

Sometimes it is difficult to distinguish multi-infarct dementia from Alzheimer disease as the symptoms are similar and it is possible for a person to have both diseases at the same time. A CT scan of the head may be ordered to detect small areas of infarct. More severe deficits, verbal sequencing and executive function than Alzheimer's Disease.

Functional Stages of Alzheimer Disease

Researchers have identified a pattern of decline for people with Alzheimer Disease. Some people describe this pattern of decline as mild, moderate or severe while others describe it as early, middle or late. Reisberg has developed a 7-stage tool called Functional Assessment Staging Tool (FAST) that can be used to assess what stage the person is in. These stages describe a loss of functional ability that seems to occur in a predictable pattern. This pattern also has been observed to be related to declining cognitive function. This loss of ability appears to researchers to be opposite to the order in which we gain abilities. For example, we learn to feed ourselves, walk and speak at a young age. These abilities are usually retained until late in the disease process.

We can use this information to assist us in caring for the resident with Alzheimer Disease. For example, using techniques required to communicate with us in our early developmental stages (when we had no language or early language skills) may help us understand how to communicate with a resident who is losing language ability. At that time, long explanations weren't appropriate. We were given simple instructions supplemented with non-verbal communication. We preserve our resident's dignity by changing our approach to meet their changing needs.

The functional stages are significant when we are looking at the resident's ability to perform ADL's. If a resident is in an earlier stage and is more disabled in function, we need to look for reasons for "excess disability". Have we made the person more dependent by helping too much or not assisting them to walk? Is there visual, hearing loss or a language barrier? Is there another disease process? Overmedication? Anxiety? Depression?

Although there is a predictable progression in the disease, care activities may compensate for the loss. For example, frequent toileting may maintain continence in an otherwise incontinent resident. Frequent cueing during feeding or providing one food item at a time may help retain self-feeding abilities longer. Understanding that behaviour may be their way to communicate things like hunger, thirst, discomfort and emotions will allow us to anticipate and provide for their needs. Helping the family understand that there is a "natural" course to this disease may help them cope with the progression they are seeing.

FUNCTIONAL ASSESSMENT SCALING (FAST)

FAST Stage	Description	Min-Mental Status Exam
Stage 1, 2, 3	Normal function in Stage 1, 2. Mild Cognitive impairment in Stage 3. Symptoms only apparent in performing complex job functions, new learning. Mild memory impairment.	24 - 28 in Stage 3
Stage 4	Mild Alzheimer Disease. Decrease in memory more apparent. Decreased capacity to manage finances. Needs assistance for complex tasks. May try to hide deficits by withdrawing from activities. This stage lasts about 2 years.	19 - 20
Stage 5	Moderate Alzheimer Disease. Requires assistance in choosing proper clothing for the season. May wear same clothing day after day if not reminded to change. Can no longer live on their own. Can't recall their current address, may not know correct year. Remote memory also starts to suffer. Unable to calculate even simple math problems. Lasts about 1 ½ years.	15
Stage 6 (has five sub-stages)	Moderately severe Alzheimer Disease. 6a – Difficulty putting on clothes without assistance. 6b – unable to bathe properly; may develop a fear of bathing. Needs help to adjust water temperature. Difficulty brushing teeth. 6c – Inability to handle mechanics of toileting (e.g. flushing, wiping) 6d – Urinary incontinence, occasional or more frequent. 6e – Fecal incontinence, occasional or more frequent. Increased difficulty identifying family members. Increase in behavioural disturbances. May fear being left alone. Decrease in ability to articulate speech. The sixth stage lasts about 2 ½ years.	1 - 9
Stage 7 (6 sub-stages)	Severe Alzheimer Disease. Speech becomes limited to about a half dozen words in a day and declines to a single word. Will require assistance to ambulate then will progress to being unable to sit up independently, unable to smile, unable to hold up their head. Physical rigidity is evident. This stage can last for several years. The resident will die during this stage.	0

Issues in Early / Moderate Stage Dementia

Driving – One of the most difficult things family caregivers may have to deal with is when the person with dementia is no longer safe to drive. A diagnosis of dementia does not automatically mean they cannot still drive safely. As a general rule, those with early or mild dementia who wish to continue driving should have their skills evaluated. A person often adjusts better if involved in the discussion and decisions re when to stop driving. Some will stop driving on their own as their abilities deteriorate but others will lack the insight to recognize a problem and will be resistant to stopping. Family members can ask the physician to instruct the person not to drive and send a letter to Motor Vehicles. Use simple explanations for loss of driving abilities such as “You have a memory problem and are no longer able to drive”, “The doctor has said that you can no longer drive” or “You cannot drive because you are on medication.” Sometimes having it written for a person to read will be helpful E.g. letter from the doctor’s office. If this fails to stop the person from driving, family members may, as a last resort, have to take further measure like hiding the keys, disabling the motor or parking the car out of sight. It is very important that alternate transportation methods be put in place so that the person does not feel severely restricted.

Compensating for Memory Deficits – Early in the disease process memory aids may be helpful to maintain the person’s independence.

- Some people use a calendar and mark off the days and note appointments and special events. Some use Post-it notes as reminders
- Develop a routine. A daily routine can be written out.
- Dressers and drawers can be labeled with their contents or pictures can be used to jog memory if the person is not able to read.
- Photographs of family and friends can be labeled to aid memory. Use a dispenser for medications.
- Set the timer when using the stove or oven. Use a sign reminding them to check if it is off.
- Have appliance like irons and kettles that shut off automatically.

(Alzheimer Disease: A handbook for Alberta Caregivers, 2002, p.30)

Personality Changes – The person with dementia often experiences changes to mood and behaviour. There can be mood swings, apathy, anxiety, depression, suspiciousness, misinterpretation of visual or auditory stimuli and irritability. There may be a decrease in emotion and a flattening of affect. One person with Alzheimer’s described the changes as “you don’t smile like you used to.” (Shared Experiences, p.21). Personality changes are difficult for family members to deal with. Some family and friends may stop visiting the person as they no longer see them as the same person. Family members may not understand the disease process and may attribute the person’s actions as being deliberate or against them (“She is just trying to make me feel guilty”). Family and caregiver education re: the disease process is very important.

Risk of Abuse – Staff working in the community need to be alert for risk factors for or signs of abuse or neglect. A 1999 study in Ontario found a 4% rate of abuse for community dwelling seniors (McNaught, 1999, p. 3). Being mentally impaired puts the person with dementia at risk. Abusers may choose victims they feel would be unable to report or who will be disbelieved. In Canada, adult children are the largest category of abusers for all forms of abuse (National Elder Abuse Incidence Study, 1996). Financial abuse is the most prevalent type of abuse. The best predictors of abuse were:

- Mental health issues or substance abuse
- Dependence on the elderly person for financial assistance, housing or other necessities and a
- History of violence or antisocial behaviour outside the family.

(Lachs and Pillemer, 1995)

Often the least capable family member is designated as the caregiver. Elder abuse may be a continuation of previous family violence. Efforts need to be made to prevent abuse when situations are felt to be high risk. Wolf (2000) found that: “some of the studies on the relationships between caregiver stress, Alzheimer Disease, and elder abuse suggest that the long-term or pre-abuse nature of the

relationship between the caregiver and care recipient may be the important factor in predicting instances of mistreatment” (p.3). A caregiver reacting to stress with violence may be indicative of how the person generally reacts to stress, and not be situational to care giving duties (Lukawiecki 1993, p.11).

Warning Signs:

- Suspicious injuries
- Poor physical appearance or signs of neglect (neglect may be a result of a lack of knowledge)
- Seeming fearful of the caregiver
- Discrepancy between known income and standard of living
- The older person is worrying about documents they have signed
- Caregiver is concerned more about the financial status of the person than their health status
- A new friend or caregiver is isolating the person from family or friends and promising care in exchange for deeding property

Caring For the Client with End Stage Dementia

Loss of ambulation, swallowing difficulties and severe communication deficits characterize the terminal stage of dementia. Although presenting symptoms may vary between dementias, there is not much difference clinically in the terminal stage. Our goal for care at this stage is comfort. Reisberg says; *“If we are going to keep people alive, we owe them a life of opposed to suffering. They need not suffer if we understand their condition.”* (Wagner, 2000). Some advocate that persons in end stage of dementia be treated with a palliative care approach. The word “palliative” is defined as “to ease without curing”.

LOSS OF MOBILITY – Loss of mobility will be progressive-loss of ability to walk, ability to stand, ability to sit unsupported and eventually loss of head and neck control. Maintaining the ability to ambulate for as long as possible is an important goal – prevents medical complications and outlet for physical energy. How do we achieve this – no restraints and staff keeping them walking as long as possible. Use hip protectors to increase safety. Use it or lose it!

INFECTIONS – An infection is an inevitable consequence of terminal dementia due to impairment of immune function, incontinence, inability to ambulate, and aspiration. Pneumonia is the most common cause of death in demented individuals. Infections are often recurrent and antibiotics become less effective. There are ethical issues that arise re treatment or non-treatment of infections. The main question we need to ask is if the treatment contributes to the comfort of the person.

CONTRACTURES – Contractures occur as the person becomes immobile and can be a source of pain. Contractures make it more difficult to provide care. Experience with people who are kept moving, even in the final stages of AD, has shown that contractures can be avoided for many years. (Wagner, 2000)

SWALLOWING DIFFICULTIES / REFUSAL TO EAT – Food refusal may be a result of decreased appetite, dislike of the food, inability to open the mouth or swallow. They may forget to chew and swallow or pouch food in their cheeks. They may eventually be unable to take even a modified diet. This may be a natural consequence of the dying process during which all body functions are gradually terminated. We need to educate the family re the disease progression and prepare them for the time when the client will no longer take food. It is much better to have these issues discussed before a crisis situation. The dying individual does not feel hunger or thirst and the only discomfort is dryness of the mouth (Volicer, 2001, p.383). As dementia is a terminal disease feeding tubes are not appropriate. Research has shown that aspiration pneumonia was found to increase among patients with feeding tubes. Use of tube feedings to prevent malnutrition, improve survival time, prevent or improve pressure ulcers, reduce infections or improve comfort is not supported by the literature (Head, 2003, Panke & Volicer, 2002).

PAIN – Clients often have severe communication deficits so are unable to verbalize pain. They may show as restlessness, repetitive calling out, and irritability that can escalate to aggression during care if the care is causing pain. Caregivers have to watch for non-verbal signs of pain.

For good pain management staff must:

- Report pain
- Be committed to pain management
- Communicate amongst shifts to establish clients pain baseline
- Administer medication in a timely fashion

Adapted from source: Monoly, et. al. (2005), p. 22

PRESSURE SORES – Immobility, incontinence, weight loss and decreasing nutritional status cause end stage residents to be extremely high risk for pressure sores.

COMMUNICATION – There is severe impairment in communication. Clients who cannot comprehend what is being said and are unable to express themselves are often frustrated. Those providing care may not attempt to understand their communication. In the late stages, we need to use different means to reach them – touch, massage, music.

ACTIVITIES – Although some individuals become mute and interact very little with the environment, they may never reach a stage that they cannot respond to stimulation. They have been found to respond to touch, music, pet therapy. We'll be discussing appropriate activities more in Day 2.

SLEEP DISTURBANCE – Sleep studies have shown that sleep patterns are changed in persons with dementia. An individual in the latter stages of a dementing illness has polyphasic sleep patterns similar to those of a newborn infant. There is an increase in day time drowsiness, waking at night. Avoid waking for routine changing. Change when they are awake. We would not use drugs to alter an infant's sleep pattern so should not try to "normalize" the sleep / wake pattern of those with dementia (Northwood, 2002).

FAMILY – Staff working with clients at the end of life need to embrace the mission of palliative care-comfort. We need to communicate this clearly to the family to assist them through the difficult decision making and grieving process associated with AD. The trust you build with the family throughout the client's stay will ease the struggle families feel when making difficult decisions in the end stage of the disease

References Module 3

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