DEFINITIONS AND SYMPTOMS

*Cognition* is the process of knowing and includes aspects such as reasoning, awareness, perception, knowledge, intuition, and judgment.

*Cognitive Skills* are the mental capabilities that a person has which allow them to process all the information they receive from their five senses. These skills are needed for a person to be able to think, talk, learn and read. They are what give a person the ability to recall things from memory. Cognitive skills also are needed to analyze images and sounds.

*Cognitive problems, also referred to as cognitive deficits or dysfunctions*, occur when a person has difficulties processing information, including mental tasks such as attention, thinking, language, emotional behavior and memory.

*Mild cognitive impairment* is the stage between normal forgetfulness due to aging and the development of dementia. In general, these symptoms do not interfere with everyday activities and include forgetting recent events or conversations, difficulty multi-tasking or solving problems and taking longer to perform more difficult mental activities.

*Dementia* is another type of cognitive dysfunction which involves the loss of cognitive functioning and intellectual reasoning due to changes in the brain.

**Who Gets Dementia?**
Most people with dementia are older, but it is important to remember that not all older people get dementia. It is not a normal part of ageing. Dementia can happen to anybody, but it is more common after the age of 65 years. People in their 40s and 50s can also have dementia.

**What Causes Dementia?**
There are many different forms of dementia and each has its own causes.

**Most Common Types of Dementia:**
- Alzheimer's disease
- Vascular dementia
- Parkinson's disease
- Dementia with Lewy bodies
- Fronto Temporal Lobar Degeneration (FTLD)
- Huntington's disease
- Alcohol related dementia (Korsakoff's syndrome)
- Creutzfeldt-Jacob disease.

**Symptoms of Dementia:**
- Tendency to repeat questions and story over and over again
- Becoming disoriented in familiar places
- Neglecting personal hygiene or nutrition
- Getting confused about people or time
- Language problems, such as trouble finding the name of familiar objects
• Misplacing items
• Personality changes and loss of social skills
• Losing interest in things once enjoyed
• A flat mood
• Difficulty performing tasks that take some thought, but that used to come easily
• Emotional unpredictability

CAUSES OF COGNITIVE PROBLEMS
Now let’s look at some of the causes that can lead to cognitive dysfunction. Not all cognitive impairment is a result of Alzheimer’s disease or other forms of dementia.

• Stress, anxiety, and fatigue have all been found to affect memory. Studies have shown that older men with elevated levels of the stress hormone epinephrine are more likely to suffer from mild cognitive impairment than those of their peers with normal levels. Another study showed that everyday stresses combined with major stressful events may exert cumulative effect over a lifetime that exacerbates cognitive decline.
• Elderly people who suffer from diseases associated with aging such as may end up with cognitive dysfunction as a result of treatments of these conditions.
• Cancer treatments are a common cause of cognitive problems. Cancer.net reports that approximately 20 percent of people who undergo chemotherapy will experience some cognitive problem side effects. Radiation treatment to the head or neck is also a known cause of cognitive problems.
• Other conditions or symptoms related to cancer or cancer treatments, including anemia, fatigue, stress, depression, insomnia, high blood calcium, and electrolyte imbalances can also result in cognitive dysfunction.

Other Causes of Cognitive Dysfunction:
• Brain cancer or other cancers that spread to the brain, or brain surgery
• Hormone therapy
• Medications, including those for anti-nausea, antibiotics, pain medications, antidepressants, heart medications, and those to treat sleep disorders
• Infections, especially those of the central nervous system and that cause a high fever
• Not having enough of specific vitamins and minerals, such as iron, Vitamin B, or folic acid
• Untreated vision problems
• Other brain or nervous system disorders such as multiple sclerosis

Dementia can be caused by many things, some of which are reversible – such as vitamin deficiencies and poor nutrition, to reactions to medications or problems with the thyroid. However, some forms of dementia are irreversible, such as that caused by mini strokes or Alzheimer’s disease.

Alzheimer’s disease is the leading form of dementia. Alzheimer’s disease occurs when the nerve cells deteriorate in the brain due to a build up of plagues and tangles, which actually results in the death of a large number of brain cells. Doctors are not sure why this occurs, but research is underway to determine causes and cures.

Developing Alzheimer’s disease is not a part of normal aging. In fact, the causes of Alzheimer’s disease are not entirely known, but are thought to include both genetic and environmental factors. A diagnosis of Alzheimer’s disease is made when certain symptoms are present, and by making sure other causes of dementia and cognitive dysfunction are not present. Regardless of the cause of cognitive dysfunction, the fact remains that dealing with the symptoms can be difficult and present many challenges.
Alzheimer's is the major cause of dementia. If a doctor determines that the patient has deficits in at least two of the following (memory, language, control of bodily movement, perception, loss of ability to make decisions), as well as worsening of cognitive function, no alteration in consciousness, onset between 50 and 90 years and absence of other possible causes, then the patient most likely has Alzheimer's. Recent studies have shown a relationship between elevated blood levels of homocysteine, a protein breakdown product, and memory dysfunction. Independently, low vitamin B12 and folate levels (folate is a vitamin found in liver, green vegetables and yeast) are associated with cognitive dysfunction. Folate deficiency, by itself, can make homocysteine levels rise and too much homocysteine can provoke atherosclerosis. It is, therefore, possible that hardening of the arteries may act as a trigger for Alzheimer's disease. Future studies may confirm the role of elevated homocysteine in Alzheimer's disease; in the meantime it would make good sense to give multivitamins to people with dementia.

**Symptoms of Alzheimer’s Disease:**
- Forgetting details about current events
- Forgetting events in one’s own life history and losing awareness of who you are
- Change in sleep patterns, often waking up at night
- Increased difficulty reading or writing
- Poor judgment and loss of the ability to recognize danger
- Using the wrong word, not pronouncing words correctly or speaking in confusing sentences
- Withdrawing from social contact
- Having hallucinations, arguments, striking out, and violent behavior
- Having delusions, depression, and agitation
- Becoming easily upset at home, at work, with friends or in places where they are out of their comfort zone
- Difficulty doing basic tasks, such as preparing meals, choosing proper clothing, or driving
- Incontinence
- Swallowing problems

Dementia is subtle. Family members fail to recognize it almost one-quarter of patients. A number of studies have shown that doctors are not much better.

The clinical features of the common dementias are outlined in the table below.

**The Different Types of Dementia**

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Features</th>
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| Alzheimer's Disease (AD)      | - Slow progressive onset<br>- Multiple cognitive deficits manifested by both:<br>  
<p>|                               |   - Memory impairment&lt;br&gt;   - One or more additional cognitive deficits such as aphasia, apraxia, agnosia, disturbance in executive functioning&lt;br&gt;- Associated significant functional decline&lt;br&gt;- Not explained by other neurologic or systemic disorders |
| Vascular Dementia (VaD)       | - A number of syndromes typically associated with cerebrovascular disease&lt;br&gt;- Look for abrupt onset, step-wise decline and a temporal relationship between the vascular insult and the cognitive change&lt;br&gt;- Impaired executive functioning and early development of a gait disturbance are added features&lt;br&gt;- Clinical and neuroimaging evidence supports the diagnosis&lt;br&gt;- Commonly see periventricular and deep white matter changes, however they |</p>
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<tr>
<th>Condition</th>
<th>Description</th>
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<tr>
<td>Mixed AD/VaD</td>
<td>The degenerative changes of AD and the vascular changes of VaD commonly co-exist. Presentation more commonly of AD pattern with significant vascular risk factors +/- small vascular events.</td>
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| Dementia With Lewy Bodies (DLB) | - Core features:  
  Fluctuating cognition with pronounced variation in attention and alertness (memory decline may not be an early feature)  
  Recurrent visual hallucinations that are well formed and detailed  
  Spontaneous motor features of Parkinsonism  
- Features supportive of diagnosis:  
  Repeated falls  
  Syncope or transient loss of consciousness  
  Hypersensitivity to antipsychotics (typical and atypical)  
  Systematized delusions; non-visual hallucinations  
- DLB has reduced prevalence of resting tremor and reduced response to L-dopa compared to idiopathic PDD  
- Presence of REM sleep disorder in the setting of a dementia suggests DLB & related conditions  
- DLB should occur before or concurrently with onset of Parkinsonism |
| Parkinson's Disease Dementia (PDD) | 1. The cognitive features may appear similar to DLB (deficits in attention and alertness)  
  2. Look for motor Parkinsonian symptoms that typically are present many years before the onset of the dementia for PDD |
| Fronto-Temporal Dementia (Pick’s) | 1. Insidious onset and gradual progression; tends to present in middle-aged patients  
  2. Character changes present early and include apathy, disinhibition, executive failure alone or in combination  
  3. Relatively preserved memory, perception, spatial skills and praxis  
  4. Behavioural disorder supportive of diagnosis: decline in hygiene, mental rigidity, distractibility, hyperorality, perseveration  
  5. Prominent language changes frequently occur with reduction in verbal output |

**Coping with Cognitive Problems**

Caring for an elderly with dementia can be a difficult responsibility. When you add in the symptoms of increasing forgetfulness and absent-minded behavior, the caregiving you’re providing can become a more daunting and challenging task. Of course consulting a doctor and other healthcare professionals to recommend a course of treatment is the obvious first step, but there are many things you can do to help:

- **Have them write down every new piece of information.** A small notebook that they can keep in a purse or pocket would be handy to have at doctor’s appointments or by the phone. Encourage them to use both words and pictures if it helps them understand or remember the concepts later on.
- **Let them know that it’s OKAY to ask someone to repeat something.** They may not ask people to repeat information because they don’t want to appear silly or inept.
- **Sticky notes are very helpful to leave small reminders.** For example, if they forget how to use the coffee machine, write the instructions down on a note and stick it right on the machine.
- **You can also help them improve their cognitive function through two forms of exercise – mental and physical.** Just like muscles, the more they exercise their brains, the more they’ll be able to better process and remember information.
Novelty and sensory stimulation are the foundation of brain exercise. If your patient has a regular route through the grocery store or to the mailbox, ask them to try a different route. If they can’t leave the house, suggest a variation in routine such wearing their watch on the opposite wrist.

Health experts also recommend daily physical activity in order to reduce the risk of developing cognitive problems. One of the great things about physical activity is that there are so many ways to encourage your patients to be active. Remind them that many physical activities – such as brisk walking or taking the stairs – count as exercise and can be done at any time.

If your patient is confined to a chair for much of the day, try to find ways to encourage movement in his or her daily life. Some examples include leg lifts, grasping a tennis ball or swirling scarves through the air to exercise arm muscles.

Since stress and anxiety can increase cognitive dysfunction, it’s important that you and your patient stay calm when memory fails. If your patient becomes nervous every time he or she can’t remember something, quietly assure them that some memory loss is normal and perhaps they’ll remember it later on. One thing that you and the family members and friends might ask is how to best communicate with a cognitively impaired person. The National Institute on Aging has developed a list of recommendations:

- Try to address the person directly and use simple, direct wording.
- Gain the person’s attention.
- Speak distinctly and at a natural rate of speed.
- Explain or re-explain who you are and why you are there.
- Support and re-assure a person. Acknowledge when responses are correct and if the person gropes for a word, gently provide assistance.
- Present one question, instruction, or statement at a time.
- Safety-proof the home. Caregivers often learn, through trial and error, the best ways to help them are to maintain routines for eating, hygiene and other activities at home. You may need special training in the use of assistive equipment and managing difficult behavior. It is also important to follow a safety checklist:

  Be aware of potential dangers from:
  - Fire hazards such as stoves, other appliances, cigarettes, lighters and matches;
  - Sharp objects such as knives, razors and sewing needles;
  - Poisons, medicines, hazardous household products;
  - Loose rugs, furniture and cluttered pathways;
  - Inadequate lighting;
  - Water heater temperature—adjust setting to avoid burns from hot water;
  - Cars—do not allow an impaired person to drive;
  - Items outside that may cause falls, such as hoses, tools, gates.

  Be sure to provide:
  - Emergency exits, locks to secure the house, and, if necessary, door alarms or an identification bracelet and a current photo in case your patient wanders;
  - Bathroom grab bars, non-slip rugs, paper cups rather than glass;
  - Supervision of food and alcohol consumption to ensure proper nutrition and to monitor intake of too much or too little food;
  - Emergency phone numbers and information;
  - Medication reminders and monitoring.

- Outline a care plan. Once your patient has received a diagnosis and completed a needs assessment, it will be easier for you, possibly with help from a professional like a nurse, to formulate a care plan—a
strategy to provide the best care for your patient and yourself. It’s a good idea to take some time to think about both short- and long-term needs.

This plan will always be a “work in progress,” as your patient’s needs will change over time. To start developing a plan, first list the things you are capable of doing yourself, have time for, and are independent PDA functions. Then list those things that you would like or need help with, now or in the future. Next, list all your “informal supports”—that is, family members, friends, neighbors—and think about how each person might be able to provide assistance. List any advantages and disadvantages that might be involved in asking these people to help. Write down ideas for overcoming the disadvantages. Repeat the list for “formal” support (e.g., community services, physical and occupational therapists, day programs). It is important to set a time frame for any action or activities planned.

Behavioral Problems: What Can You Do?
Patients with dementia often suffer from depression and a variety of behavior problems. Depression is particularly common in patients with vascular dementia but can also occur in those with Alzheimer's disease. Doctors use the Cornell Scale for Depression in Dementia to help identify depression in dementia sufferers. Thoughts of death or suicidal thinking occur in as many as one-third of dementia patients early in the course of the disease; and hallucinations, delusions and paranoid thoughts occur in approximately a quarter of patients. Anxiety is also common. Other behavior problems include agitation, irritability, wandering, restlessness, sleep disturbances, aggressiveness, screaming and inappropriate sexual behavior.

It should also be remembered that some of these behavioral problems, especially agitation, may be caused by delirium. Delirium is an extremely dangerous altered state of consciousness whose symptoms include confusion, distractability, disorientation, disordered thinking and memory, illusions and hallucinations, hyperactivity and overactivity. Demented patients are particularly vulnerable to developing delirium. When this occurs, the patient should be taken to an Emergency Room and treated as soon as possible (usually with the drug haloperidol).

Few studies have focused on anxiety and its treatment in Alzheimer's sufferers. Anxiety may result from a fear of becoming a burden to friends or family members, or from a fear of being left alone. It is often associated with suspiciousness. The best way to treat this problem is by providing the patient with reassurance and a consistent environment. If drug treatment is needed, short-acting benzodiazepines and buspiridone may be useful. Trazodone can help the anxious patient go to sleep.

Many of the behavioral symptoms seen in demented patients are related to disturbances of the internal biological clock ("phase shifting"). Patients with Alzheimer's are particularly vulnerable to phase shifting. For instance, their activity level may peak late in the day, typically around dinnertime. Use of high lux (2000 lux) lighting for two hours in the morning may reverse this problem. There have also been case reports that melatonin can help.

In the case of agitation, the best interventions are behavioral ones. These include:
• Career support and education. The ability to deal with agitation is often more important than treating the agitation itself.
• Psychotherapy. A variety of psychotherapeutic approaches have been utilized. These include Reality Orientation, Validation Therapy (accept the person's reality - better in late disease), Reminiscence and Music and other Creative Arts Therapies.
• Environmental Modification. These should include a safe and easy-to-manage environment in which no restraints are necessary.
• Special Care Units. Though heralded by their adherents, controlled studies have not demonstrated any benefit.
• A hearing amplifier. Some demented patients scream all the time. Giving them a hearing amplifier can often solve this problem.
When agitation first occurs, it is important to rule out an underlying medical cause. Delirium occurs, commonly, in persons with dementia. Pain is often a precipitant of disruptive behaviors and it needs to be carefully assessed in agitated patients.

**TAKING ACTION**

Caring for an elderly experiencing memory loss or dementia can be physically and emotionally wearing. By attending this in-service and other trainings, you’ve taken important steps to becoming informed and finding ways to help.

**Think about your next steps, and how you can create your action plan:**

1. My personal deadline for assessing the signs of cognitive changes is: __________________________.
2. Resources I need to search, talk to, or meet with to help me understand the symptoms and issues related to cognitive dysfunction are: __________________________.
3. The strategies I can try to help my patient with cognitive impairment are: __________________________.

**TIPS FOR KEEPING THE MEMORY SHARP**

As yet, there is no prevention or cure for dementia. However, here are a few tips for keeping the brain fit and memory sharp:

• Avoid harmful substances. Excessive drinking and drug abuse damages brain cells
• Challenge self. Reading widely, keeping mentally active and learning new skills strengthens brain connections and promotes new ones
• Trust yourself more. If people feel they have control over their lives, their brain chemistry actually improves
• Relax. Tension may prolong a memory loss
• Make sure you get regular and adequate sleep
• Eat a well balanced diet
• Pay attention. Concentrate on what you want to remember
• Minimize and resist distractions
• Use a notepad and carry a calendar. This may not keep your memory sharp, but does compensate for any memory lapses
• Take your time
• Organize belongings. Use a special place for unforgettable items such as car keys and glasses
• Repeat names of new acquaintances in conversation.