

Cognitive Impairment: Is This Dementia? Symptoms to Diagnosis

This guideline was developed by an Alberta Clinical Practice Guidelines Program working group to assist physicians in the assessment of cognitive impairment/decline. A companion guideline for the management of the cognitively impaired patient as well as a Capacity Assessment Tool accompanies this document.

ISSUES

- ◆ Aging population and increased prevalence of dementia in this population
- ◆ Time constraints and limited health-care resources
- ◆ Diagnosis of dementia requires unique clinical skills (including using collateral information)
- ◆ Hidden presentation - lack of insight and denial is common among affected patients
- ◆ Increased need for primary care practitioners to participate in the diagnosis of dementia

GOALS

- ◆ To improve confidence in the assessment of the patient with a decline in cognitive function
- ◆ To allow early recognition and appropriate management of patients with cognitive impairment
- ◆ To provide a clear assessment plan that respects the time constraints of primary care and leads to accurate diagnosis of the cause of the cognitive decline

Physicians may want to divide diagnostic work into phases that can be carried out in separate office visits

PRACTICE POINT

Physicians should remain vigilant for evidence of dementia in the early stages.

If suspicions are raised, the need for follow-up and corroboration is high.

The above recommendations are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. They should be used as an adjunct to sound clinical decision making.

Signals of Cognitive Impairment

Observations

- ◆ Some that may be reported by patient or caregiver include decline in:
 - Memory
 - Level of functioning (i.e., driving, finances, meal planning, cooking, taking medications)
 - Behaviour/mood (i.e., agitation, apathy, anxiety, disinhibition)
 - Other cognitive areas (i.e., language, orientation, difficulty in performing familiar tasks)

Clinical Presentations

- ◆ The patient or caregiver reports:
 - Difficulty managing finances and/or balancing a chequebook
 - Frequent repetition of stories and/or statements
 - Becoming lost while driving familiar routes
 - Frequently forgetting the name of a relative(s)
 - Exercising poor judgement

Differentiate: Depression, Delirium, Dementia

DEPRESSION

Features of Depression*

- Sad or depressed most of the time
- Reduced energy, interest, capacity to enjoy (i.e., anhedonia):
- Sleep disturbed
- Concentration poor
- Memory problems (same duration as other symptoms - weeks to months, not years)
- Psychomotor agitation and anxiety (can be prominent)
- Decreased appetite and weight loss (10% of body weight in 6 months)

Atypical Features Common in the Elderly

- psychotic features (paranoid delusions)
- Somatization
- The “dwindles”

Issues in Depressed Elderly Patients

- Suicide risk is high - assess suicide risk
- Depression is an unusual sole cause of cognitive impairment
- Depression often co-exists with dementia

DELIRIUM

Features of Delirium*

- Acute – onset
- Fluctuation – course
- Attention - ↓ concentration
- Consciousness - ↓ level
- Thoughts – disorganized

* *This is a medical emergency and should be dealt with immediately. Delirium is often a multifactorial syndrome.¹*

Risk Factors and Causes for Delirium²

- Advanced age
- Pre-existing cognitive impairment/psychiatric comorbidity, particularly dementia
- Sensory deprivation/over stimulation/environmental changes (hospitalization, new home)
- Medications (especially addition of 4+ medications, anticholinergics, opioids, sedative-hypnotics, drug withdrawal, and drug intoxication)
- Trauma/surgery
- Cardiopulmonary disorders (myocardial infarction, hypotension, hypoxia)
- Metabolic/dehydration/nutritional factors
- Central nervous system disease (dementia, stroke)
- Dehydration/electrolyte abnormalities
- Gastrointestinal disorders (ulcer, bleeding, constipation)
- Genitourinary disorders (urinary retention)
- Malnutrition/hypoalbuminemia
- Infections (urinary tract/respiratory)
- Greater illness severity
- Use of physical restraints
- Hypoxia (see cardiopulmonary, trauma/surgery, and infections as potential causes)

DEMENCIA

Features of Dementia

- Memory loss with at least one of:
 - aphasia
 - apraxia
 - agnosia
- Disturbance in executive function
- Decline from previous level of function
- Significant impact on the patient’s life
- Condition not explained by other causes (i.e., delirium, depression)

- ◆ If dementia is suspected:
 - be vigilant for imminent, serious potential risks to self or others
 - identify sources of collateral information
 - plan timely follow-up visit(s) for more complete assessment with collateral information sources (caregiver, partner/spouse)

Physicians may want to divide diagnostic work into phases that can be carried out in separate office visits

- ◆ Take history from the patient (supported with collateral information from the caregiver)

Note: Education, culture, language barriers, and sensory impairment can affect an individual's ability to perform certain tasks.

- ◆ Document decline that includes memory and at least one of:
 - Aphasia: language disturbance
 - Apraxia: difficulty in carrying out perviously learned motor activities despite intact motor function
 - Agnosia: difficulty recognizing people, places or objects that were previously familiar to the individual despite intact sensory function
 - Disturbance in executive function: difficulty sequencing, organizing, abstracting, planning
- ◆ Perform objective test of cognition (i.e., [MMSE*](#))

** Note: To obtain a copy of the MMSE, click on the link above*

- ◆ Document functional decline:
 - BADLs: basic activities of daily living
 - IADLs: instrumental activities of daily living

- ◆ Ask caregiver about concerns/problems
- ◆ Ask caregiver about feeling stressed by care responsibilities
- ◆ Re-explore safety issues (i.e., driving, stove, finances, falls, medications, nutrition)
- ◆ Basic laboratory testing includes:
 - Complete blood count
 - TSH
 - Serum electrolytes
 - Serum calcium
 - Serum glucose
- ◆ Additional laboratory studies are not recommended unless indicated by the results of the history, physical examination, and initial investigations
- ◆ Routine imaging is not indicated unless:
 - Patient less than 60
 - Abrupt onset, rapid decline, and/or short duration
 - Focal neurological symptoms and/or signs
 - Previous malignancy, recent head trauma, or bleeding disorder

Note: For more details related to neuro-imaging see Appendix 1

- ◆ Plan follow-up with patient/caregiver

PRACTICE POINT

Examples of BADL's

- Transfers
- Toileting
- Washing
- Dressing
- Feeding

Examples of IADL's

- Shopping for groceries
- Preparing meals
- Doing housework/ yardwork
- Doing laundry
- Taking medications properly
- Managing money
- Travel beyond walking distance

- ◆ Review laboratory test results
- ◆ Conduct physical examination (in particular, look for):
 - Focal or lateralizing neurological signs
 - Gait disturbances
 - Evidence of extra pyramidal symptoms (EPS) which are not seen in Alzheimer Disease (AD) until late in the course
- ◆ Review information:
 - Determine whether dementia is present or not
 - Formulate etiological diagnosis of dementia:
 - Gradual onset and progression over time with a normal CNS exam suggests AD
 - Abrupt onset and stepwise decline suggests vascular dementia
 - Early behavioural problems and decreased interpersonal skills with loss of social awareness suggests frontotemporal dementia
 - Fluctuating cognition with spontaneous motor features of Parkinsonism including falls and visual hallucinations suggest dementia with Lewy Bodies
 - Early gait disturbance with urinary incontinence in the context of mild cognitive impairment suggests the possibility of Normal Pressure Hydrocephalus
 - Many physicians find it useful to stage dementia (optional). See Appendix 2

Plan Follow-up

- ◆ If the diagnosis of dementia is not supported by information gathered, follow patient as indicated
- ◆ Mild cognitive impairment (subjective complaints of memory loss corroborated by an informant but no other domains of cognition involved and preservation of function i.e., failure to meet dementia criteria (see below)
 - Follow carefully every 3 to 6 months as the patient may progress to dementia, usually AD, within a short time (10-15% per year)
- ◆ Dementia
 - Plan for follow-up visit within 1 month with patient and caregiver for information exchange (Phase IV)

Disclosure

- ◆ Discuss diagnosis and general prognosis with the patient and caregiver
 - The average survival for AD is approximately 10 years with a range of 2 to 20 years from the onset of memory loss
- ◆ Determine stage (optional): Global Deterioration Scale (GDS) (see Appendix 2)

Relationship Building

- ◆ Develop or maintain an ongoing relationship with patient and caregiver
- ◆ Refer to the Alzheimer Society of Alberta: 1-866-950-5465 and/or the local Alzheimer Society chapter

Safety Planning

- ◆ Address safety issues with patient/caregiver including need for driving evaluation

Future Planning

- ◆ Discuss wills, enduring power of attorney, and personal directives with patient/caregiver
- ◆ Plan follow-up visit every three to six months
 - As with other chronic diseases, regular medical supervision is needed
- ◆ Optimize nutrition and sensory function (e.g., glasses, hearing aids)
- ◆ Treat systolic hypertension
- ◆ Encourage exercise routine and as much activity as possible
- ◆ Caution re: change in environment or elective hospitalization.

PRACTICE POINT

If at any point in the diagnostic process, the physician requires expert input, referral to a specialist is encouraged

BACKGROUND

Diagnosis of Dementia (DSM-IV)³

1. A syndrome characterized by:
 - a. Memory impairment (difficulty learning new information or recalling previously learned information)
 - b. One of the following:
 - i. Aphasia (language disturbance)
 - ii. Apraxia (difficulty in carrying out previously learned motor activities despite intact motor function)
 - iii. Agnosia (difficulty recognizing people, places or objects that were previously familiar to the individual despite intact sensory function)
 - iv. Disturbance in executive functioning (sequencing, organizing, abstracting, planning)
2. The cognitive deficits above cause significant impairment in functioning and represent a decline from previous functioning.
3. Symptoms do not occur exclusively during delirium and are not better accounted for by another mental illness.

Differential Diagnosis of Dementia

Dementia can be diagnosed when there are acquired cognitive deficits which are of sufficient severity to interfere with social or occupational functioning in a person without depression or a delirium. The condition is usually progressive when due to primary neurodegenerative causes. On occasion, it is reversible but this occurrence is unfortunately rare. Once the diagnosis has been made, the physician should try to determine the specific cause(s) of the dementia.

Alzheimer Disease is the most common type of dementia encountered in Canada. It is characterized by a gradual onset and progression over time. With AD, the dementia cannot be explained by another neurological or systemic disorder. It accounts for about 60% of cases of dementia in our country. AD begins insidiously and progresses very gradually in most cases. The gradual cognitive decline in memory as well as the order in which the other cognitive domains erode, accompanied by a normal neurological examination are

strongly suggestive of the diagnosis. A family history in first degree relatives is often obtainable. The arrival of drugs for symptomatic treatment provides the family physician with added therapeutic strategies but the traditional management approaches of frequent office visits to monitor and maintain health, providing caregiver support, and mobilizing community-based assistance must not be underestimated. Disclosure of diagnosis to patients and family members, reviewing future plans (i.e., wills, enduring power of attorney, and personal directives), and referral to the Alzheimer Society is strongly advocated.

Vascular dementia (VaD) exists as a number of types all associated with cerebrovascular disease. It is classically characterized by an abrupt onset, stepwise decline, focal neurological finding, early gait disorder and/or urinary incontinence, a history of TIA's/strokes/vascular risk factors, and neuroimaging evidence of cerebrovascular disease. A temporal relation between a vascular insult and cognitive change should be sought. Small vessel CNS disease can mimic AD without an abrupt onset, stepwise decline and very subtle CNS lateralization. VaD and AD frequently coexist in which case it is termed **mixed dementia**.

Frontotemporal dementia is characterized predominantly by behavioural changes. Disinhibition, loss of social awareness, and inflexibility with diminished insight are common in this disorder. Typically it has an insidious onset and slow progression and more commonly occurs in middle aged individuals. There is early emotional blunting and loss of empathy. Language changes frequently occur early with a reduction in verbal output.

Dementia with Lewy Bodies is marked by progressive cognitive decline. There are fluctuating symptoms, recurrent visual hallucinations, and spontaneous motor features of parkinsonism. The diagnosis is supported by repeated falls, syncope, transient LOC, hypersensitivity to neuroleptics, systematized delusions, and nonvisual hallucinations.

Numerous other disorders can be associated with dementia. Examples would include Parkinson's disease, Huntington's chorea, Progressive Supranuclear Palsy, Creutzfeld-Jakob disease, certain CNS infections, head trauma, intracerebral tumors, and subdural hematomas. Excessive alcohol intake can be missed in the elderly and in addition to dementia can cause delirium, depression, falls, and other medical complications.

Truly reversible dementias are rare. **Normal pressure hydrocephalus (NPH)** is an uncommon disorder presenting with a gait disturbance, urinary incontinence, and cognitive impairment. If diagnosed early, surgery to shunt cerebrospinal fluid may yield improvements. On neuroimaging there is ventricular enlargement out of proportion to the degree of cortical atrophy. Investigations for suspected NPH include neuroimaging with either CT or MRI to assess ventricular size.^a Any individual presenting with a dementia syndrome should be evaluated for depression, drug intoxication/adverse effects, metabolic disorders (e.g., hypothyroidism), and nutritional deficits.

Neuroimaging

While not recommended for every patient presenting with impaired cognition, neuroimaging (usually computerized axial tomography or CAT scanning) has a role in detecting certain causes of dementia like cerebrovascular disease, brain tumors, subdural hematomas, and normal pressure hydrocephalus. Consider obtaining neuroimaging for patients meeting the criteria outlined in Appendix 1.

Clinical Instruments for the Diagnosis and Monitoring of Dementia

A structured approach will help in establishing the diagnosis of dementia, distinguishing underlying cause(s), monitoring response to treatment, and monitoring for changes over time. Mental status testing remains one of the cornerstones of diagnosis. Serial observations on objective mental status testing at intervals of 3 to 6 months may be necessary to confirm the progressive nature of the cognitive concerns.

The Mini Mental State Examination (MMSE) is the most commonly used screening test for cognition. The MMSE is influenced by age and education level.^{4,5} Researchers have found an inverse relationship between MMSE scores and age, ranging from a median of 29 for those 18 to 24 years of age to 25 for individuals over the age of 80. The median MMSE score is 29 for individuals with at least 9 years of schooling, 26 for those with 5 to 8 years of schooling, and 22 for those with none to 4 years of schooling.

Staging the severity of AD can be useful in determining which problems might be anticipated, giving accurate information on prognosis to patients and families, and determining whether there are any incongruities in the

presentation which would raise questions about the diagnosis. A commonly used and feasible staging instrument is the Global Deterioration Scale (GDS)⁶, refer to Appendix 2.

Aphasia

Aphasia is one of the first manifestations of AD and usually presents as the inability to find the correct words for different objects (anomic aphasia, the inability to name objects), difficulty naming family members, or becoming less talkative or less conversational. Comprehension, repetition, reading, writing, and naming are all tested superficially with the MMSE.

Apraxia

Apraxia is the inability to perform learned purposeful movements for reasons other than impaired motor strength, sensation, coordination, or comprehension.

Apraxia is usually present in moderate AD but may be confined to activities the patient does not perform routinely. As the disease progresses, apraxia affects even daily activities, and the patient no longer can dress, feed, or wash even though there is no paralysis.

Tests for apraxia can include observing the patient's performance of putting on a shirt with one sleeve inside out, or asking the patient to wave goodbye. If unable to, ask the patient to imitate you doing these things. Finally, ask the patient to show you how they would do more complex actions like brushing teeth.

Agnosia

Agnosia, the inability to recognize people, places, or objects that were previously familiar to the patient, is often so subtle that it can go unnoticed. Agnosia may present as getting lost while walking or driving close to home.

Executive Functioning

The American Psychological Association defines executive function as a disturbance in the ability to plan, organize, sequence and abstract.³ Initiative may be lacking and/or the mental flexibility to cope with novel tasks or situations. Goal directed behaviour is impeded in specific activities such as self care, work performance and social interactions.^{7,8}

PRACTICE POINT

Many physicians may find the acronym **SOAP** useful in identifying components of executive function:

Sequencing
Organizing
Abstracting
Planning

General intelligence, education and social exposure will affect performance on tests of executive function.⁹ By way of further illustration the following suggestions are made for categorization of tests for executive function:

1. Manipulation of old knowledge; can be tested through digits backwards, recitation of months of the year backwards
2. Social awareness and practical judgement; can be tested with questions concerning environmental situations and how to deal with them effectively (e.g., why do people have lungs?; why are light-coloured clothes cooler in the summer than dark-coloured clothes?; what would you do if you saw smoke or fire in a grocery store?)
3. Abstract thinking. Tested by the use of proverbs (e.g., don't cry over spilled milk; Rome wasn't built in a day). Scored as either concrete, semiabstract, abstract. Tested by the verbal similarities test (e.g., Turnip-Cauliflower; Car-Airplane), the patient is told that they will be presented with pairs of objects and they must say how they are alike or different.
4. Sequencing/planning; can be tested by asking the patient to describe how they would go about planning and organizing an event from start to finish such as a dinner party or by the clock drawing test.

Collaborative data concerning the patient's social judgement in dealing with day-to-day events can be obtained from those who know the individual well and changes from past functional abilities must be noted. Specifically, one could ask if there have been any safety concerns with the person at home such as fires, wandering, inappropriate clothing etc. Also, is the person capable of planning a vacation, completing tax forms, planning and hosting a dinner party as they had in the past.

FREQUENTLY ASKED QUESTIONS

Is cognitive impairment hereditary?

First degree relatives of Alzheimer patients have a 2- to 4-fold increase in their personal risk of this disease. Almost all individuals with Down Syndrome develop the neuropathological hallmarks of AD after the age of 35. A small number of Alzheimer cases (less than 10%) have autosomal dominant inheritance. If there is a family history suggestive of autosomal dominant inheritance of AD, consider referral to a genetic clinic. There is a well-described susceptibility gene on chromosome 19. While it increases the risk of the development of AD by certain ages, it does not mean that all individuals who carry this susceptibility gene will develop the condition. One E4 allele increased the risk of subsequent AD by threefold while two of them increases this risk nine or ten times. Recent evidence has shown that the E4 allele does not predispose to the development of MCI but does favour conversion to AD in those who already have it. Screening people for the genetic risk factors is not currently indicated. It is expected that additional susceptibility genes will be found.

Will hormone replacement therapy help to prevent the onset of cognitive impairment?

The Canadian Consensus Conference on Dementia¹⁰ reviewed the data available on estrogen and concluded that:

“Physicians should provide counseling on the risks and benefits of estrogen therapy in peri- or post-menopausal women. Current evidence does not support the use of estrogen specifically for the prevention of Alzheimer disease. A reduced risk associated with long term estrogen use in epidemiological observational studies was **not** confirmed in the Womens Health Initiative cognitive substudy.” This research demonstrated an increased risk rather than a protective effect.

Is Ginkgo Biloba recommended for the prevention and treatment of cognitive impairment?

Regarding Ginkgo Biloba and the treatment for AD, the Canadian Consensus Conference on Dementia concluded that the studies of Ginkgo to date were felt to be inconclusive. “In our country there is great variability between different Ginkgo preparations such that the actual amount of drug is not standardized.”

While clinical trial results of Ginkgo Biloba are encouraging, they merit further investigation and study.

Is Vitamin E recommended for the prevention and treatment of cognitive impairment?

Regarding Vitamin E in the prevention and/or treatment of AD, the Canadian Consensus Conference on Dementia concluded:

“There is currently insufficient evidence to recommend the use of Vitamin E for the treatment or prevention of AD. At the doses evaluated in clinical trials, there were side effects in some patients. The benefits for the treatment or prevention of AD of low dose Vitamin E has not been evaluated.”

REFERRAL

A complete neuropsychological evaluation may be useful in the following situations:

1. When the patient/caregiver requests a second opinion.
2. If the practitioner is uncertain of the diagnosis.

NEUROIMAGING

For recommendations on who should have neuroimaging, refer to Appendix 1.

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TOWARD OPTIMIZED PRACTICE

(TOP) PROGRAM

The successor to the Alberta Clinical Practice Guideline (CPG) program, TOP is an initiative directed jointly by the Alberta Medical Association, Alberta Health and Wellness, the College of Physicians and Surgeons, and Alberta's Health Regions. The TOP Program promotes appropriate, effective and quality medical care in Alberta by supporting the use of evidence-based medicine.

TOP Leadership Committee

Alberta Health and Wellness
Alberta Medical Association
Regional Health Authorities
College of Physicians and Surgeons of Alberta

To Provide Feedback

The Alberta CPG Working Group for Cognitive Impairment is a multi-disciplinary team composed of family physicians, gerontologists, RNs, community pharmacists, and a representative from the Alzheimer Society of Alberta. The team encourages your feedback. If you have difficulty applying this guideline, if you find the recommendations problematic, or if you need more information on this guideline, please contact:

Clinical Practice Guidelines Manager
TOP Program
12230 - 106 Avenue NW
Edmonton AB T5N 3Z1
Phone: 780.482.0319
or toll free 1.866.505.3302
Fax: 780.482.5445
Email: cpg@topalbertadoctors.org
Website: www.topalbertadoctors.org

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Appendix 1: Criteria for Neuroimaging¹¹

A cranial CT scan is recommended if 1 or more of the following criteria are present:

- age less than 60 years
- rapid (e.g., over 1 to 2 months) unexplained decline in cognition or function
- “short” duration of dementia (less than 2 years)
- recent and significant head trauma
- unexplained neurologic symptoms (e.g., new onset of severe headache or seizures)
- history of cancer (especially in sites and types that metastasize to the brain)
- use of anticoagulants or history of a bleeding disorder
- history of urinary incontinence and gait disorder early in the course of dementia (as may be found in normal pressure hydrocephalus)
- any new localizing sign (e.g., hemiparesis or a Babinski reflex)
- unusual or atypical cognitive symptoms or presentation (e.g., progressive aphasia)
- gait disturbance

Appendix 2: Global Deterioration Scale (GDS)⁶

Level	Clinical Characteristics
1 - No cognitive decline	No subjective complaints of memory deficit. No memory deficit evident on clinical interview.
2 - Very mild cognitive decline (Forgetfulness)	Subjective complaints of memory deficit, most frequently in following areas: (1) forgetting where one has placed familiar objects; (b) forgetting names one formerly knew well. No objective evidence of memory deficit on clinical interview. No objective deficits in employment or social situations. Appropriate concern with respect to symptomatology.
3 - Mild cognitive decline (Early Confusional)	Earliest clear-cut deficits. Manifestations in more than one of the following areas: (a) patient may have gotten lost when traveling to an unfamiliar location; (b) co-workers become aware of patient's relatively poor performance; (c) word and name finding deficit becomes evident to intimates; (d) patient may read a passage or a book and retain relatively little material; (e) patient may demonstrate decreased facility in remembering names upon introduction to new people; (f) patient may have lost or misplaced an object of value; (g) concentration deficit may be evident on clinical testing. Objective evidence of memory deficit obtained only with an intensive interview. Decreased performance in demanding employment and social settings. Denial begins to become manifest in patient. Mild to moderate anxiety accompanies symptoms.
4 - Moderate cognitive decline (Late Confusional)	Clear-cut deficit on careful clinical interview. Deficit manifest in following areas: (a) decreased knowledge of current and recent events; (b) may exhibit some deficit in memory of one's personal history; (c) concentration deficit elicited on serial subtractions; (d) decreased ability to travel, handle finances, etc. Frequently no deficit in following areas: (a) orientation to time and person; (b) recognition of familiar persons and faces; (c) ability to travel to familiar locations. Inability to perform complex tasks. Denial is dominant defense mechanism. Flattening of affect and withdrawal from challenging situations occur.
5 - Moderately severe cognitive decline (Early Dementia)	Patient can no longer survive without some assistance. Patient is unable during interview to recall a major relevant aspect of their current lives, e.g., an address or telephone number of many years, the names of close family members (such as grandchildren), the name of the high school or college from which they graduated. Frequently some disorientation to time (date, day of week, season, etc.) or to place. An educated person may have difficulty counting back from 40 by 4s or from 20 by 2s. Persons at this stage retain knowledge of many major facts regarding themselves and others. They invariably know their own names and generally know their spouses' and children's names. They require no assistance with toileting and eating, but may have some difficulty choosing the proper clothing to wear.
6 - Severe cognitive decline (Middle Dementia)	May occasionally forget the name of the spouse upon whom they are entirely dependent for survival. Will be largely unaware of all recent events and experiences in their lives. Retain some knowledge of their past lives but this is very sketchy. Generally unaware of their surroundings, the year, the season, etc. May have difficulty counting from 10, both backward and, sometimes, forward. Will require some assistance with activities of daily living, e.g., may become incontinent, will require travel assistance but occasionally will display ability to familiar locations. Diurnal rhythm frequently disturbed. Almost always recall their own name. Frequently continue to be able to distinguish familiar from unfamiliar persons in their environment. Personality and emotional changes occur. These are quite variable and include: (a) delusional behavior, e.g., patients may accuse their spouse of being an impostor, may talk to imaginary figures in the environment, or to their own reflection in the mirror; (b) obsessive symptoms, e.g., person may continually repeat simple cleaning activities; (c) anxiety symptoms, agitation, and even previously nonexistent violent behavior may occur; (d) cognitive abulia, i.e., loss of willpower because an individual cannot carry a thought long enough to determine a purposeful course of action.
7 - Very severe cognitive decline (Late Dementia)	All verbal abilities are lost. Frequently there is no speech at all - only grunting. Incontinent of urine, requires assistance toileting and feeding. Lose basic psychomotor skills, e.g., ability to walk. The brain appears to no longer be able to tell the body what to do. Generalized and cortical neurologic signs and symptoms are frequently present.