

# *When the Mind Falters: Cognitive Losses in Dementia*

*by*

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The **goal** of this module is to teach direct staff about the syndrome of dementia and its clinical effects on residents. It focuses on the ways that the symptoms of dementia affect persons' functional ability and behavior.

We begin with an **overview of the symptoms** of cognitive impairment.

We continue with a description of the **causes, epidemiology, and clinical course (stages)** of dementia.

We then turn to a closer look at the specific **areas of cognitive impairment**, and examine how deficits in different areas of cognitive function can interfere with the person's daily functioning, causing disability.

The accompanying *videotape* illustrates these principles, using the example of a nursing home resident whose cognitive impairment interferes in various ways with her eating behavior and ability to feed herself.

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# Objectives

At the end of this module you should be able to:

- Describe the stages of dementia
- Distinguish among specific cognitive impairments from dementia
- Link specific cognitive impairments with the disabilities they cause
- Give examples of cognitive impairments and disabilities
- Describe what to do when there is an acute change in cognitive or functional status



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At the end of this module you should be able to

- Describe the stages of dementia.

These are early, middle and late, and we discuss them in more detail.

- Distinguish among specific cognitive impairments from dementia.

These are things like memory loss or ability to recognize objects.

- Link specific cognitive impairments with the disabilities they cause.

Losing cognitive skills means losing the ability to do the things that depend on them, like using a comb or knowing what clothes to put on.

- Give examples of cognitive impairments and disabilities.

- Describe what to do when there is an acute change in cognitive or functional status.

Those who care most directly for residents may be the first to notice a change in cognitive skill that requires a change in the care plan to maintain the well-being of the individual.

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# What is dementia? What do we see in these persons?

**Memory loss or *amnesia***, together with  
**decline in** these other cognitive functions:

- Use of language, or ***aphasia***
- Visual-spatial function, or ***perceptual confusion***
- Recognition, or ***agnosia***
- Motor coordination, or ***apraxia***
- Performing sequential tasks, or ***executive dysfunction***

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Dementia interferes with daily functioning and behavior in many ways.

The hallmark of dementia is **loss of memory function**, or *amnesia*. The person experiences forgetfulness, inability to remember old information or learn new content. Several other areas of mental function may be impaired in dementia.

- 1. Impaired use of language and speech** or *aphasia*. Aphasia leads to difficulty in both understanding speech and/or expressing oneself in words. People with *aphasia* may have difficulty following verbal directions and may seem bewildered. They typically have trouble finding words to express themselves. In some cases, persons know what they want to say, but can't get the words out. They may use the wrong word, or substitute a nonsense word.
- 2. Visual-spatial function** may also be affected, leading to *perceptual confusion*. Affected persons may have problems with depth perception; or they may lose their sense of direction, getting lost frequently.
- 3. Loss of ability to recognize familiar objects** or *agnosia*. Persons with agnosia may see an object, but cannot recognize what it is or what it is used for.
- 4. Loss of ability to carry out motor tasks** or *apraxia*. This includes manual apraxia (e.g., inability to button a button, zip a zipper, remove the lid of a jar), oral apraxia (e.g., inability to chew efficiently), or gait apraxia (difficulty coordinating walking movements).
- 5. Executive dysfunction** results in impaired ability to **perform a sequence of motor tasks** (such as those involved in cooking a meal or brushing one's

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# What causes dementia?

- ❑ Alzheimer's disease (AD) is the most common cause; AD causes degeneration and death of brain cells.
- ❑ Many other medical or neurologic conditions can cause dementia.



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Dementia is a syndrome, characterized by worsening cognitive impairment. It can be caused by a wide variety of underlying medical and neurological conditions that affect how the brain functions. When a resident develops dementia, we need to identify the underlying cause.

*By far the most common cause of dementia is **Alzheimer's Disease**, an illness that results in progressive degeneration and death of brain cells.*

Although we don't know what causes Alzheimer's Disease, we do know that it affects areas of the brain that deal with memory and other cognitive functions.

Other medical and neurological conditions that can cause dementia are listed on the next slide. Although different diseases can cause dementia, the symptoms of cognitive impairment may appear quite similar. Regardless of the cause, the resulting dementia includes loss of memory, as well as impairment in other mental functions such as recognition and speech.

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# What causes dementia?

## Irreversible conditions:

- Stroke
- Parkinson's disease
- Chronic alcohol abuse

## Treatable conditions:

- Infectious diseases
- Thyroid disease
- Depression



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## Irreversible conditions:

In addition to Alzheimer's Disease, dementia can be caused by neurological conditions such as *stroke* and *Parkinson's Disease*.

Other examples of neurodegenerative diseases that cause dementia are *Huntington's Disease* and *Cruetzfeld-Jacob Disease*, also known as Mad Cow Disease. *Chronic alcohol abuse* can also lead to dementia. Dementia due to these conditions cannot be cured.

## Treatable conditions:

Because dementia caused by other illnesses may be reversed if treated, it is important to do a careful medical evaluation of all persons who develop dementia, searching for the underlying cause.

Dementia resulting from *thyroid disease* or *certain infectious diseases* can be reversed if treated early.

Of note, *depression* in older adults can be associated with cognitive deficits that mimic dementia. The dementia of depression is often reversible if recognized and treated.

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## How long may people live once they have AD?

- ❑ Up to 15 years after the onset of the disease.
- ❑ Other medical illnesses, accidents or injuries (e.g., heart disease, stroke, infections, falls with injuries) may cause death before AD runs its course.
- ❑ Dementia may be recognized or diagnosed in the early, middle or late stages.



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From the time that the clinical illness is first detectable, Alzheimer's disease runs a progressive course that can continue for *as long as 15 years* before resulting in death due to degeneration of the brain.

However, many Alzheimer residents die from other medical conditions before the Alzheimer's disease runs its full course since most cases of Alzheimer's occur in older adults, and older adults are vulnerable to many other common illnesses of late-life,.

Elderly individuals with Alzheimer's disease commonly die instead from cardiac disease, strokes, pneumonia or other serious infections, and injuries related to falls-- before they experience end-stage degenerative brain changes due Alzheimer's.

A typical case of Alzheimer's disease still runs a course lasting several years. *Symptoms and functional status change considerably* across the early, middle, and late stages of the illness.

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## How are persons impaired at the early stages of AD?

- ❑ Show signs of forgetfulness, confusion, word-finding difficulty, repetition, poor problem-solving
- ❑ Need supervision for instrumental activities of daily living (IADLs) e.g., household management



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At early stages, concentration is usually impaired, and memory for recent events is limited. Memory of details of personal history may also be lessened. Affected persons can no longer perform complex tasks accurately and efficiently.

Difficulty performing instrumental activities of daily living (IADLs) may become apparent. [Examples of IADLs include management of household tasks such as grocery shopping, cooking, cleaning, doing laundry, paying bills or handling personal finances.] Individuals may show little emotion and withdraw from challenging situations. Some persons do not recognize their deficits.

However, persons at the early stage remain well aware of time and place. They readily distinguish familiar persons and faces from strangers and can still travel to familiar locations without getting lost. As the early stage progresses, people begin to require some assistance. They may become unable to recall important information related to their current life situation, such as home address, telephone number, or names of grandchildren; though they still know the names of their spouses and children. They may have difficulty recalling important information from their past, such as the name of the high school or college they attended, military service, or occupation. Persons become disoriented to time, sometimes to place. A well-educated person may have difficulty counting backward from 40 by fours or from 20 by twos. Toward the end of this stage, they may have difficulty choosing proper clothing, but do not require assistance with personal care, such as eating or toileting (basic ADLs).

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## How are persons impaired at the middle stages of AD?

- Show signs of poor recent and remote memory, disorientation, difficulty speaking full sentences, inability to recognize familiar people, difficulty manipulating objects
- Need assistance to perform basic activities of daily living (BADLs) e.g., personal care
- Behavioral problems are common



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Persons in the middle stages lose awareness of most recent events and experiences in their lives. They retain some memory of their past, but this is vague and limited. They are disoriented to time and place and so may get lost in familiar places. They may not remember the name of their spouse (even when they depend on the spouse daily for survival). They are unable to count backwards from 10, and may not be able to count forward from 1 to 10.

Persons at the middle stages have significant *apraxias* (no longer able to do IADLs or household management tasks such as cooking, shopping, banking), and require substantial assistance; they become highly dependent on caregivers for help with many basic ADLs (personal care tasks such as dressing, grooming, hygiene, and toileting). They may become incontinent.

*Aphasia* progresses, and speech becomes vague with word substitutions: e.g., saying “rope” for a necktie, circumlocutions (describing an object instead of stating its name: e.g., “the thing that tells time” for wristwatch); excessive use of indefinite terms such as “thing” or “it”; or neologisms (made-up words) such as “thing-a-ma-gig”. Comprehension of spoken and written language is impaired.

*Behavioral changes* are common. They may repeat words and phrases, or gestures and mannerisms. Wandering and rummaging may pose safety risks. Delusional thoughts may develop, such as accusations of spousal infidelity, that the spouse is an imposter, that the house is not one’s home, or that someone is stealing personal belongings. This may lead to anxiety or agitated



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## How are persons impaired at the late stages of AD?

- ❑ Show signs of difficulty speaking, walking, sitting up, eating
- ❑ Need assistance in all ADLs; progression to total care



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Persons at the late stages become totally dependent on caregivers for assistance with basic ADLs.

They are incontinent of bladder and bowel.

Speech deteriorates, with loss of ability to speak in complete sentences or intelligible phrases. Speech becomes restricted to single words, often with repeating what they have just heard or repeating what they have just spoken. Ultimately affected people become mute.

Ambulatory ability is lost. In those who survive to this point, the ability to sit up, smile, and hold up one's head are lost in that order (usually in the reverse order that infants reach these developmental landmarks).

This is the terminal stage of the illness.

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# At each stage of dementia, look for *disability* and *residual ability*

Recognize areas of:

- ***impaired*** function (disability)
- versus
- ***preserved*** function (residual ability)



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At each stage of dementia, people have different areas of impaired function (disability) and areas of preserved function (residual abilities).

Most functions are not lost suddenly and completely, but gradually and partially as dementia progresses. Therefore, it is important to ***conduct periodic assessments*** to identify impaired and preserved functions.

The **goals** are 1) to *determine the level of supervision or assistance* required in areas of disability; and 2) to *support and encourage* the resident to continue *functioning independently* in those areas where their abilities are still intact.

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# At each stage of dementia, look for *disability* and *residual ability*

- Help compensate for disability
- Support residual abilities



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Individuals may require different levels of support for different functions. For example, a person may still be able to walk to the bathroom--and therefore does not have to be pushed in a wheelchair; but may be unable to undress--and so does requires staff assistance to pull down underwear before toileting.

Residents are more likely achieve the highest possible functional level and quality of life if

- We encourage them to do whatever they can for themselves as independently as they can (i.e., in areas of **residual ability**); and
- We provide the appropriate level (sufficient, but not excessive) of supervision or assistance in those areas where they have functional deficits (i.e., **disability**).

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## What to do when there is an acute change in cognitive or functional status

- Initial assessment for medical conditions, psychiatric disorders, medication effects, environmental factors, unmet needs; refer to the RAPs
- Get help from the interdisciplinary team: PT, OT, Speech, Social Work, Pharmacy
- Request consultation from Gerontological Nursing, Geriatric Psychiatry

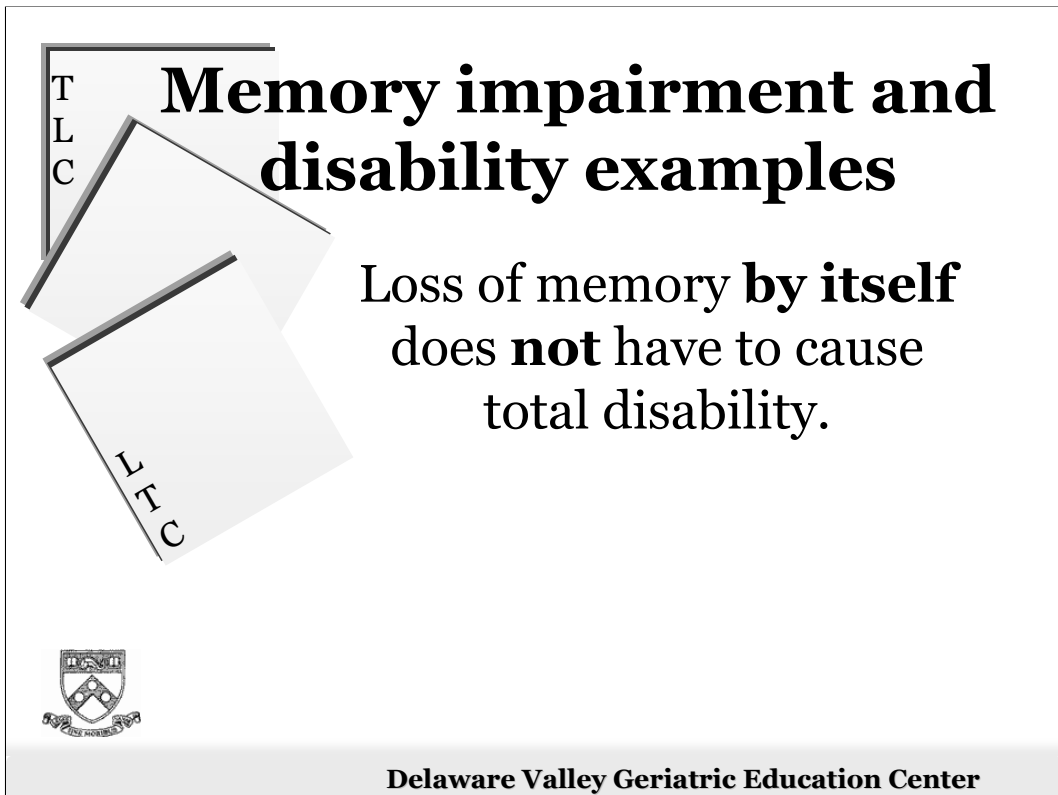


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**Decline is gradual but expected.** For those with dementia due to Alzheimer's disease, cognitive status and functional abilities decline gradually.

**Sudden changes may not be due to dementia.** Sudden changes in cognitive or functional status are usually explained by factors other than the dementing illness itself.

**Any sudden change should prompt an evaluation for illnesses and conditions that may be complicating the course of dementia.** Medical conditions, psychiatric disorders, medication effects, environmental factors, and unmet needs can lead to a sudden decline in function. Because these are usually due to treatable and reversible conditions, it is important to perform a thorough assessment to identify those factors that cause or contribute to the decline. Assessment should include coordinated input from multiple disciplines, including PT, OT, Speech, Social Work, Psychology, and Pharmacy. Where available, request consultation from Gerontological Nursing and Geriatric Psychiatry. These health professionals can be a valuable resource for identifying the complex causes of functional impairment and behavioral change, and can assist in planning effective treatment interventions.



**Memory impairment and disability examples**

Loss of memory **by itself** does **not** have to cause total disability.

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*Instructor Note:*

*Show the **video segment** for this module for demonstration of the various impairments and approaches to compensating for them. This overhead and the next 10 below provide additional case examples for each of the areas of disability, to be used at instructor discretion.*

*The “Objectives Review” overhead, which follows the examples, should be reviewed before concluding the training.*

Memory impairment can interfere with the a person’s ability to function, but loss of memory by itself doesn’t have to cause total disability.

When other mental functions like

- recognition,
- visual-spatial function, and
- ability to perform motor tasks (praxis)

are even partially intact, the ability to perform some ADLs remains. To maintain these functions, caregivers need to provide appropriate assistance to compensate for the memory deficits.

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# Memory impairment and disability examples

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If left without any assistance when he wakes up, Mr. Ames never gets himself dressed.



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## Example: Mr. Ames

Staff may assume he is too demented to dress himself, and they put his shirt and pants on for him. However, Mr. Ames cannot *remember* where his clothes are kept. The closet is hidden by the bathroom door, so there is no visible reminder of where to find his clothes.

Mr. Ames is capable of dressing himself, but can't remember where his clothes are kept

If staff lay his clothes out on a chair so he can see them when he wakes up, he dresses himself. Although he has poor memory, he is still able to *recognize* a shirt and pants and knows which body parts they cover, can orient them in space (lining up the sleeves and leg holes), and can put them on and manipulate the zippers and buttons independently.

Mr. A can still get dressed despite his amnesia, because agnosia, visual-spatial deficits, and apraxia do not yet interfere with his ADL function.

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# Memory impairment and disability

- Mrs. Bosc can't remember where the bathroom is.
- She wets herself daily.
- Her caregivers keep her in diapers.
- Is Mrs. Bosc incontinent?



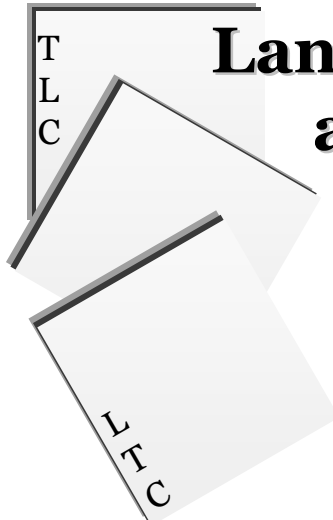
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## **Example Mrs. Bosc.**

Mrs. B has normal bladder tone and sphincter control, recognizes what a toilet is, and uses it appropriately when escorted to the bathroom.


**Mrs. B could remain continent, but can't remember where the bathroom is.**

When a large sign is placed on her bathroom door and staff point her toward the bathroom every two hours, she remains continent, and uses the toilet appropriately.



# Language problems and disability

Loss of language function  
*by itself* does not have to  
cause total disability.



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A person with dementia may have difficulty with understanding what is said or with speaking (*aphasia*). Aphasia can interfere with the resident's ability to function.

The performance of activities of daily living (ADLs) relies on more than just language comprehension and speech. When other mental functions such as

- memory,
- recognition,
- visual-spatial function, and
- ability to perform motor tasks (praxis)

are even partially intact one may retain mobility and may still be able to perform some ADLs. They depend on caregivers to provide appropriate assistance to compensate for their language deficits.



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# Language problems and disability examples

Mrs. Donne has had hip surgery.

She cannot understand the physical therapist's instructions about using the walker.

Can Mrs. Donne become ambulatory again?



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## **Example: Ms. Dunne:**

Ms. Donne has surgery to repair a hip fracture, and is referred for physical therapy (PT). She does not have problems with agnosia (she is able to recognize what a walker is used for) or apraxia (she can still perform movements required for walking).

However, she is unable to understand the physical therapist's verbal instructions for using a walker safely. The frustrated physical therapist discharges Ms. Donne from PT, indicating that she is unsafe to ambulate with a walker.

However, because Mrs.. Donne does not have a gait apraxia, she is able to ambulate with assistance of a caregiver. With the use of simplified words, complemented by hand gestures to demonstrate the correct use of the walker, Ms. Donne successfully learns how to stand and turn safely.

Although the aphasia prevents Ms. Donne from comprehending complex verbal instructions, she is still capable of understanding a visual demonstration. In addition, she has sufficient sparing of memory, recognition, visual-spatial function and praxis to use the walker to ambulate.

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# Language problems and disability: example

Mrs. Edgar remembers she likes ice cream, but can't find the words to express her preference for chocolate.

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## **Example: Mrs. Edgar.**

Mrs. Edgar, a nursing home resident with dementia is offered ice cream for dessert. Mrs. E understands the words “ice cream”, and her memory is sufficiently intact for her to recall that she likes ice cream.

However, her aphasia prevents her from saying the word “vanilla” to express her preference. When the staff serve Mrs. Edgar vanilla, she pushes the bowl away, and it falls off the edge of the table. Next time, when staff present her with two bowls to choose from, she is able to remember the color of the flavor she likes, and points to the chocolate.

Mrs. Edgar successfully makes her preference known by relying on memory and recognition and motor function (gesturing), compensating for her language deficits.

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# Impaired Recognition and Disability

A person with dementia may  
have *difficulty*  
*recognizing objects*, or  
*agnosia*

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Agnosia can interfere with the resident's ability to function, even when other cognitive functions-- such as memory, language, visual-spatial function, and praxis (ability to perform motor tasks)-- are spared.

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# Impaired Recognition and Disability

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- Mr. Gruen can maneuver to unzip his pants.
- He cannot recognize that a toilet is a receptacle for urine.

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## Example: Mr. Gruen

Mr. Gruen has dementia. He is still able to respond to the sensation of urinary urgency, and is able to coordinate motor movements to unzip his pants (i.e., he does not have apraxia).

However, Mr. Gruen has agnosia, and is unable to recognize a toilet or its function. That is, he does not recognize it as a receptacle for urine. Therefore, when Mr. G feels an urge to urinate, he unzips his pants and urinates on the floor, or in a trash container. Staff may document this as “urinary incontinence”; others call it “uncooperative behavior.”

However, Mr. Gruen is still capable of controlling his bladder, and is not belligerent when he urinates in inappropriate places.

Sometimes the correct use of tools, instruments, or other objects (in this case, a toilet or a urinal) can be demonstrated to help residents compensate for their impaired recognition. In some cases, deficits are severe and are accompanied by anxiety, e.g., when staff try to coax the person to sit on a cold white porcelain bowl filled with liquid, he becomes fearful or agitated.

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# Impaired Recognition and Disability

- Mrs. Adams has dementia but does not have manual or oral apraxia.
- She is still able to pick up a cup, and still able to sip and swallow.
- Can she drink from a cup?



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## **Example: Mrs. Adams (seen in video)**

Mrs. Adams is unable to recognize a cup or its function, or to recognize the fluid it contains as a beverage for drinking.

Therefore, instead of picking up the cup and drinking from it, Mrs. H turns the cup upside down, and becomes upset when the liquid spills in her lap.

In this case, demonstrating its use or guiding her to bring the cup to her lips may help her to use residual cognitive skills to drink from the cup.

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# Apraxia and Disability Examples

- Mr. Jones is continent, but cannot unzip or unbutton his own pants to pull them down.
- Ms. Kay is able to recognize and name a comb, but cannot use it to comb her hair.



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## Example Mr. Jones

1. Mr. Jones is still able to remember where the bathroom is, and can recognize a toilet and what it's used for, but he has apraxia that prevents him from unbuttoning and unzipping and pulling down his pants. He has normal bladder tone and function, but frequently wets his pants and has been labeled "incontinent".

When staff assist promptly with undressing in the bathroom, Mr. J remains continent.

## Example Ms. Kay

2. Ms. K who is able to recognize and name a comb always appears disheveled. She no longer combs her hair, and staff have labeled her "unmotivated". They wonder if she's depressed, stubborn, or just lazy. However, evaluation by an occupational therapist reveals apraxia, including inability to unscrew the lid from a jar and inability to button her blouse.

Based on this clinical finding, the occupational therapist recommends that the staff assist her with the tasks, as well as with combing her hair.

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# Apraxia and Disability in Terminal Stages of Dementia Examples

- Mr. Noble no longer holds or manipulates objects (**manual apraxia**)
- Mr. Ott sits all day; has difficulty bearing weight and ambulating, even with assistance (**gait apraxia**)
- Mrs. Paul can swallow, but cannot chew effectively (**oral apraxia**)



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In the terminal stage of dementia, a person eventually loses the ability to perform basic functions, including those required to sustain life. Much of this disability is due to apraxia, the inability to perform motor tasks. Apraxia can interfere with the resident's ability to use mouth and tongue to coordinate chewing and swallowing (oral apraxia), to coordinate hand movements to manipulate objects (manual apraxia), or to coordinate legs movements for walking (gait apraxia).

Examples:

1. Mr. Noble with manual apraxia no longer reaches for objects. Objects placed in his hand are no longer handled or manipulated.
2. Mr. Ott, with gait apraxia may be able to stand, but cannot take steps. As the apraxia becomes worse, the resident becomes unable to plant both feet on the ground, lock both knees, center body weight along the axial skeleton, and stand up. The resident spends most of the day sitting in a chair.
3. Mrs. Paul with oral apraxia can no longer perform effective chewing movements, and becomes unable to use the tongue to sweep food out of buccal recesses (e.g., the space between the teeth and cheek), form food into a bolus, or propel it to the back of the pharynx

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# Objectives Review

Can you now:

- Describe the stages of dementia?
- Distinguish among specific cognitive impairments from dementia?
- Link specific cognitive impairments with the disabilities they cause?
- Give examples of cognitive impairments and disabilities?
- Describe what to do when there is an acute change in cognitive or functional status?



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Now at the end of this module are you able to

- **Describe the stages of dementia.**

These are early, middle and late, and we discuss them in more detail.

- **Distinguish among specific cognitive impairments from dementia.**

These are things like memory loss or ability to recognize objects.

- **Link specific cognitive impairments with the disabilities they cause.**

Losing cognitive skills means losing the ability to do the things that depend on them, like using a comb or knowing what clothes to put on.

- **Give examples of cognitive impairments and disabilities.**

- **Describe what to do when there is an acute change in cognitive or functional status.**



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Thank you for your attention!

The End.



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