MOBILITY AND MENTATION:

The Intertwined Pathways to Health and Well-being in Older Adults

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Why This Topic Matters

One in **six** people in the world will be over **60** by **2030** (WHO)

Declines in cognition and mobility are major predictors of adverse outcomes.

Important to older adults (and orgnizations and payors).

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No Conflict of Interest

Describe the 4Ms framework and its relevance to age-friendly, patient and family-centered approaches across settings of care.

Identify strategies for promoting safe mobility across diverse functional levels.

LEARNING OBJECTIVES

Describe evidence-based approaches to support positive mentation in the older adult.

[illegible] the importance of integrating "What Matters" into mobility and mentation plans.

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Overview

4Ms

What **M**atters	Aligns care with the older adults specific health outcome goals and care preferences, including, but not limited to end-of-life care
Medication	Deprescribe or avoid high-risk medications and if necessary, use age-friendly medications that do not interfere with What Matters to the older adult, mobility, or mentation
Mentation	Prevent, identify, treat and manage dementia, depression, and delirium
Mobility	Ensure that older adults move safely every day in order to maintain function and do What Matters

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The Bidirectional Relationship between Mobility and Mentation

WHAT DO WE SEE:

- Cognitive function influences gait and balance
- Physical activity improves brain function
- Declines often occur in tandem

Prefrontal cortex: dual role in executive function & motor planning

Hippocampus: involved in navigation and memory

Dopamine, acetylcholine pathways impact both systems

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Mentation Encompasses Mental Processing, Mood, and Memory Within The 4Ms Framework

Mentation refers to **how the brain functions**, including mood, cognition (memory, orientation, executive function, attention, visuospatial abilities, language), and behavior

It requires reliable assessment and action on:

DELIRIUM: acute, fluctuating brain dysfunction

DEMENTIA: chronic, progressive cognitive decline

DEPRESSION: mood disorder affecting function and quality of life

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Why Focus on Mentation?

Depression is common but often underdiagnosed in older adults

- **One in three hospitalized older adults** experience delirium.
- **Over 7 million** Americans are living with dementia.
  - Persons living with dementia are 2-3 times more likely to he hospitalized

Cognitive issues can negatively impact:

Risk of falls | Hospital readmissions | Functional decline

- Alzheimer's Association. *Alzheimer's Dement.* 2025;21(5)
- Shepherd H. et al. Hospitalisation rates and predictors in people with dementia: A systematic review and meta-analysis. *BMC Med*. 2019 15;17(1):130.
- Wilson JE, Mart MF, Cunningham C, et al. Delirium. *Nat Rev Dis Primers.* 2020;6:90.

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Depression is Not Normal Aging

Also, not a normal reaction to an acute illness or admission to a nursing home

Consequences include:

- Amplification of pain and disability
- Delayed recovery
- Worsening of drug side effects
- Poor nutrition

Major depression:

- **12-20% in nursing home residents,** 6-10% in primary care clinics,
- Recognition is hindered by medical illness, cognitive decline, social, and economic problems.

American Geriatrics Society, 2022

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In Older Adults, Depression:

Tends to be long lasting and recurrent (whether it's major or minor)

Is typically associated with somatic symptoms and agitation (more prominent than a depressed mood) and often co-presents with anxiety

Warrants immediate attention (if recognized treatment response is good).

Is found in high-risk groups, those with:

- Vascular disease
- General health factors (pain, chronic insomnia, prior depression, history of suicide attempt, concomitant substance abuse)
- Dementia
- Other chronic or disabling conditions (diabetes, Parkinson's, COPD, low vision, arthritis)
- Personality attributes (personality disorder, low self-efficacy)
- Life stressors (trauma, low income, impaired function, disability)
- Social stressors (bereavement, loneliness, impaired social support, caregiving)

One of the primary risk factors for dementia, as well as being a harbinger for dementia in later life

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(McKenzie & Harvath, 2016)

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Focused Depression Assessment (within 4Ms framework)

Note number of symptoms, onset, frequency/patterns, duration and changes from normal mood, behavior, and functioning. (Major Depressive Disorder = 5 or more* symptoms in last two weeks)

What Matters:
- Loss of interest or pleasure
- Recent losses or crisis

Mind:
- History of depression
- Changes in cognition
- Depressive symptoms, frequent crying
- Diminished concentration*
- Feelings of worthlessness/guilt*
- Suicidal thoughts or attempts, hopelessness*
- Psychosis (delusional,/paranoid thoughts, hallucinations)*

Mobility: Decreased level of functioning, Fatigue/loss of energy,* Psychomotor slowing/agitation,* Sleep problems* Weight loss or gain*

Medications: Depressionogenic meds

Common offending drugs:

- Steroids
- Narcotics
- Sedative/hypnotics
- Benzodiazepines
- Antihypertensives
- H2 antagonists
- Beta blockers
- Antipsychotics
- Immunosuppress /cytotoxic agents

(McKenzie & Harvath, 2016)

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Indications to Start Anti-depressant Medications

(American Geriatrics Society, 2022)

Resident _____ Identifier _____ Date _____

Section D Mood

D0100. Should Resident Mood Interview be Conducted? - Attempt to conduct interview with all residents

Enter Code ☐
0. **No** (resident is rarely/never understood) → Skip to and complete D0500-D0600, Staff Assessment of Resident Mood (PHQ-9-OV)
1. **Yes** → Continue to D0200, Resident Mood Interview (PHQ-9o)

D0200. Resident Mood Interview (PHQ-9o)

Say to resident: *"Over the last 2 weeks, have you been bothered by any of the following problems?"*

If symptom is present, enter 1 (yes) in column 1, Symptom Presence.
If yes in column 1, then ask the resident: *"About **how often** have you been bothered by this?"*
Read and show the resident a card with the symptom frequency choices. Indicate response in column 2, Symptom Frequency.

1. Symptom Presence
0. **No** (enter 0 in column 2)
1. **Yes** (enter 0-3 in column 2)
9. **No response** (leave column 2 blank)

2. Symptom Frequency
0. **Never or 1 day**
1. **2-6 days** (several days)
2. **7-11 days** (half or more of the days)
3. **12-14 days** (nearly every day)

	1. Symptom Presence	2. Symptom Frequency
	↓ Enter Scores in Boxes ↓	
A. *Little interest or pleasure in doing things*	☐	☐
B. *Feeling down, depressed, or hopeless*	☐	☐
C. *Trouble falling or staying asleep, or sleeping too much*	☐	☐
D. *Feeling tired or having little energy*	☐	☐
E. *Poor appetite or overeating*	☐	☐
F. *Feeling bad about yourself - or that you are a failure or have let yourself or your family down*	☐	☐
G. *Trouble concentrating on things, such as reading the newspaper or watching television*	☐	☐
H. *Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual*	☐	☐
I. *Thoughts that you would be better off dead, or of hurting yourself in some way*	☐	☐

D0300. Total Severity Score

Enter Score ☐☐ **Add scores for all frequency responses in Column 2,** Symptom Frequency. Total score must be between 00 and 27. Enter 99 if unable to complete interview (i.e., Symptom Frequency is blank for 3 or more items).

PHQ-9 Score	Depression Severity	Clinician Response
1–4	None	None
5–9	Mild to moderate	If not currently treated, rescreen in 2 weeks. If currently treated, optimize antidepressant and rescreen in 2 weeks.
10–14	Major depressive disorder	Start antidepressant therapy.
≥15	Major depressive disorder	Start antidepressant therapy; obtain psychiatric consultation if suicidality or psychosis suspected.

For additional information, see http://phqscreeners.com.

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Assessing Depression in the Person Living with Dementia

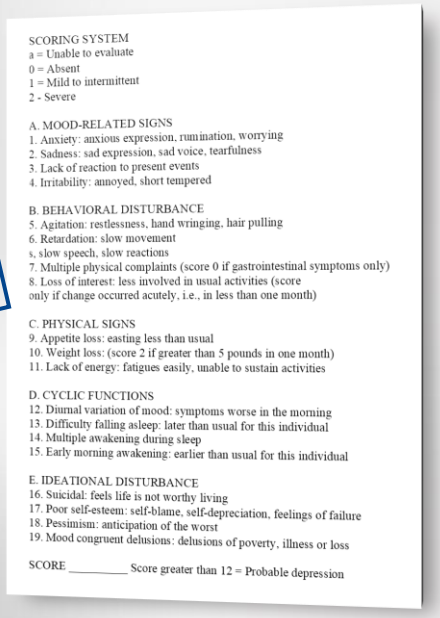
Prevalence estimated as high as 68%.

Not due to the usual changes in brain chemistry that one sees in an otherwise functional brain

Can be caused by actual neuropathology that accompanies the plaques, tangles, and cerebral atrophy.

Can manifest itself differently:
We may see increased behaviors instead of verbalized sadness.

Cornell Scale for Depression in Dementia (CSDD)



SCORING SYSTEM
a = Unable to evaluate
0 = Absent
1 = Mild to intermittent
2 - Severe

A. MOOD-RELATED SIGNS
1. Anxiety: anxious expression, rumination, worrying
2. Sadness: sad expression, sad voice, tearfulness
3. Lack of reaction to present events
4. Irritability: annoyed, short tempered

B. BEHAVIORAL DISTURBANCE
5. Agitation: restlessness, hand wringing, hair pulling
6. Retardation: slow movement
s, slow speech, slow reactions
7. Multiple physical complaints (score 0 if gastrointestinal symptoms only)
8. Loss of interest: less involved in usual activities (score
only if change occurred acutely, i.e., in less than one month)

C. PHYSICAL SIGNS
9. Appetite loss: easting less than usual
10. Weight loss: (score 2 if greater than 5 pounds in one month)
11. Lack of energy: fatigues easily, unable to sustain activities

D. CYCLIC FUNCTIONS
12. Diurnal variation of mood: symptoms worse in the morning
13. Difficulty falling asleep: later than usual for this individual
14. Multiple awakening during sleep
15. Early morning awakening: earlier than usual for this individual

E. IDEATIONAL DISTURBANCE
16. Suicidal: feels life is not worthy living
17. Poor self-esteem: self-blame, self-depreciation, feelings of failure
18. Pessimism: anticipation of the worst
19. Mood congruent delusions: delusions of poverty, illness or loss

SCORE _____ Score greater than 12 = Probable depression

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Management of Depression in the Older Adult

Pharmacologic along with counseling/behavioral intervention

- SSRIs preferred over Tricyclic anti-depressants (TCAs) due to anticholinergic effects of TCAs
- May require up to 12 weeks to achieve therapeutic effects

If executive cognitive dysfunction exists - more resistant to medication, suggests need for psychotherapy

Exercise reduces depressive symptoms – should be included in plan.

Attend to nutrition, elimination, sleep/rest patterns, physical comfort, & pain control – include in plan

Help patient set goals to resume social & physical activity.

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Case Study: Ms. P.

- 80 years old
- CC: generalized achiness and fatigue
- *"I Hurt all over"*

Presents with her daughter after missing her appointment 2 weeks before

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Case Study 1: Ms. P.

SH: Was a caregiver to her husband who died of complications of dementia three months ago. Daughter lives close by. Has not met with friends for over a year. She has help come in to clean.

PMH: HTN, Hyperlipidemia, Hypercholesterolemia mild CHF, Stress/urge, hearing loss, incontinence, DJD, anxiety s/p bilateral cataract surgery, wears corrective lenses

Medications: Altace 5 mg qd, Lasix 20 mg qd, Lipitor 30 mg daily, Detrol XL 10mg qd, Tylenol Arthritis strength BID. She also takes Xanax 0.25 mg as need and Tylenol PM as needed.

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Case Study 1: Ms. P.

REVIEW OF SYSTEMS

- Wears depends at night due to stress/urge incontinence problems
- Decreased social contact , watches TV, naps a lot , eating cookies and snacks
- Per daughter: irritable, mentally slow, flat ,'forgetful' daughter recently made POA to help keep up on bills

PHYSICAL EXAM

- BP 158/94 HR- 78
- Unkempt
- Walks independently, although she tends to cling to walls and has some difficulty getting out of a chair
- 10lb weight gain in 6 months, pedal edema
- hgbA1c=9

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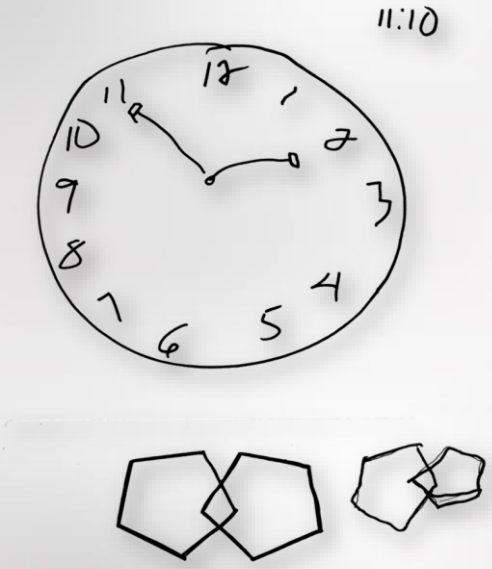
Case 1: Ms. P's Results

MoCA=28
PHQ9=22



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Case 1: What Are the Possibilities

- What else do you want to know?
- What is the plan of care?

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Plan of Care (within 4Ms framework)

What Matters:

- Her family, church, physical independence, nature

Mentation/Mind:

- Engage with others (senior center)
- Monitor PH-Q9, ADL/IADL, safety, glucose status

Mobility:

- Exercise at senior center
- Walking buddies
- Explore new hobbies that promote physical activity

Medications:

- Eliminate depressionogenic meds
- Control diabetes
- Trial of SSRI

(McKenzie & Harvath, 2016)

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Ms. P. 2 Years Later

CC: “none really, here because my daughter insisted “

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Case Study 2: Ms. P.

- **HPI:** She still lives in her home; daughter, Susan reports that she often has to clean out the refrigerator of spoiled and half eaten food items. Daughter shares that Ms. P recently got lost driving to the hair dressers. Ms. P. that was only because of the roads being blocked for construction. She traveled 15 miles out of the way before stopping for help. Susan is maintaining her bills and managing her calendar ‘’full time”
- **ROS:** *a little” knee pain off and on*.” States appetite is fine.
  Per daughter, she has had a cane for 18 months, but usually forgets to use it.
- **Physical exam:**
  - **BP:** 130/80. **HR:** 76 Dressed in clothes that are too large for her, wearing heavy sweater in mid-July. smells of urine, noticeably anxious and easily agitated. 25 lbs weight loss over the past 18 months. Red excoriated areas under breast and upper thighs.

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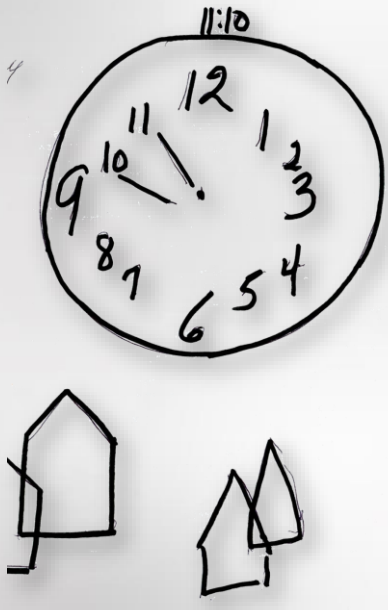
Ms. P's Test Results

MoCA=16



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Case Study: Ms. P.

- What testing should be done?
- What else might you want to know?
- What about her meds?
- Plan of care?

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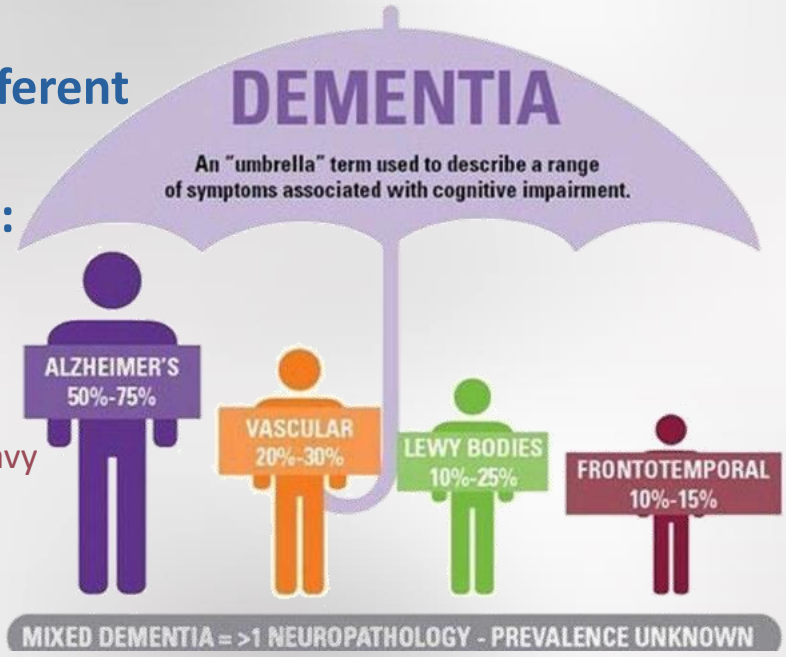
Brain Cells in Different Regions of Brain Are Damaged by:

- Buildup of proteins
- Lack of circulation
- Other toxic insult (ex. Agent Orange, heavy alcohol use, traumatic brain injury)



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MEDICATIONS

Cholinesterase Inhibitors

- Donepezil (Aricept) - Mild to severe cognitive impairment
- Rivastigmine (Exelon) - Mild to moderate cognitive impairment
- Galantamine (Razadyne) - Mild to severe cognitive impairment

N-methyl-D-aspartate receptor antagonists

- Memantine (Namenda) - Moderate to severe cognitive impairment

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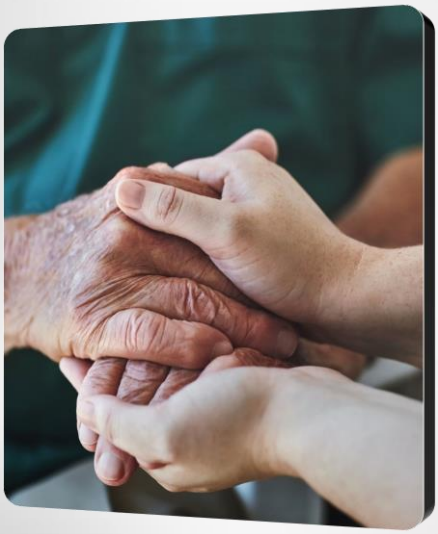
Evidence-based Dementia Care

- Includes early detection of dementia
- Prevents, detects, manages complications while managing co-morbidity
  - Promote mobility/physical activity, cognitive stimulation, socialization.
- Focuses on patient function and quality of life.
- Is family-centered- addresses patient and family needs

Supporting the patient without due consideration of the family can result in increased carer distress and poorer overall outcomes for both patient and carer.



Burns R et al. Primary Care Interventions for Dementia Caregivers: 2-Year Outcomes From the REACH Study. Gerontologist.43(4):547–555

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EARLY DETECTION:

Gerontological Society of America (GSA)
KAER (Kickstart, Assess, Evaluate, Refer) Toolkit

STEP 1: Kickstart the Brain Health:
Conversation: Discuss brain health, observe for signs and symptoms of cognitive impairment, and listen for patient and family concerns

STEP 2: Assess for Cognitive Impairment:
A brief cognitive test and other structured assessments (including family report)
"Are you worried about your memory?" "Have you noticed any changes in your memory that concern you?" "During the past few months, have you had increasing problems with your memory?

STEP 3: Evaluate for Dementia:
If cognitive impairment is detected, conduct or refer for a diagnostic evaluation.
Tools: Mini-Cog, MoCA, Slums

STEP 4: Refer for Community Resources:
If dementia is diagnosed, refer the patient and family for community services and other resources.

KAER also describes ways to get paid (CPT codes)

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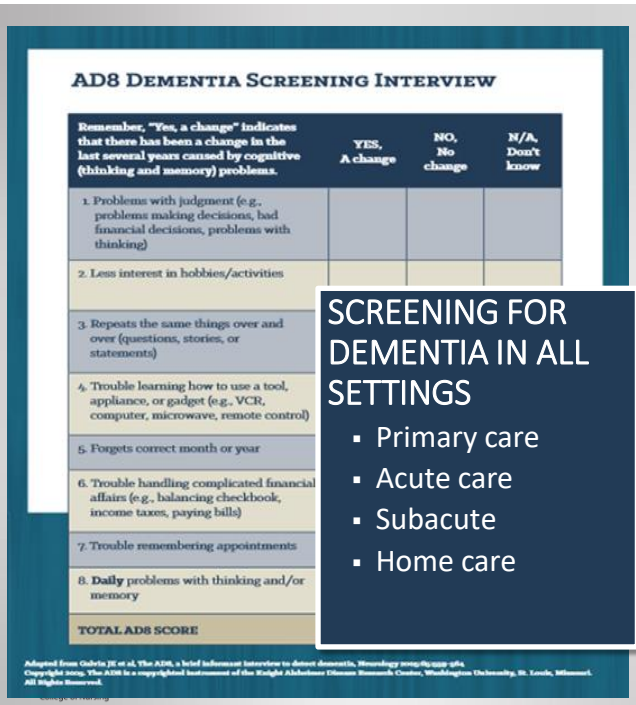

Engaging Family Care Partners in Assessment

BLESSED DEMENTIA-SCALE

Patient Name: _____
Rater Name: _____
Date: _____

Instruction
One point for each correct answer unless otherwise indicated. Score

CHANGES IN PERFORMANCE OF EVERYDAY ACTIVITIES

A Inability to perform household tasks ____
A Inability to cope with small sums of money ____
A Inability to remember shortlist of items; for example, in shopping list ____
A Inability to find way about indoors ____
A Inability to find way about familiar streets ____
A Inability to interpret surroundings; for example, to recognize whether in hospital or at home; to discriminate between patients, doctors, nurse, relatives, other hospital staff, etc. ____
A Inability to recall recent events; for example, recent outings, visits of relatives or friends to hospital, etc. ____
* Tendency to dwell in the past ____

CHANGES IN HABITS

D Eating ____
(0) = cleanly, with proper utensils
(1) = messily, with spoon only
(2) = simple solids (for example, biscuits)
(3) = has to be fed

D Dressing ____
(0) = unaided
(1) = occasionally misplaced buttons, etc.
(2) = wrong sequence, commonly forgetting items
(3) = unable to dress

D Sphincter control ____
(0) = complete control
(1) = occasional wet bed
(2) = frequent wet bed
(3) = doubly incontinent

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Engaging Family in Ongoing Care

Patients should be seen regularly, every 3-6 months, with caregiver

- Counseling regarding physical activity, good nutritiohn, sleep hygiene, cognitive stimulation, socialization, and resources to maximize function and health.
- Advance planning for both health care decisios and financial matters, is ideally addressed in the early stages of dementia

The Healthy Aging Brain Care Monitor (HAB-C Monitor)

- Allows the clinician to monitor the progression of cognitive and functional impairment, the response to mediation, signs of acute problems, and caregiver coping.

Monahan, Clinical Interventions in Aging. 2014

Over the past **two weeks**, how often did **your loved one** have problems with: (Use √ to indicate your answer.)	Not at all (0-1 day) 0 points	Several Days (2-6 days) 1 point	More than half the days (7-11 days) 2 points	Almost daily (12-14 days) 3 points
Judgment or decision-making				
Repeating the same things over and over such as questions or stories				
Forgetting the correct month or year				
Handling complicated financial affairs such as balancing checkbook, income taxes & paying bills				
Remembering appointments				
Thinking or memory				
Learning how to use a tool, appliance, or gadget				
Planning, preparing, or serving meals				
Taking medications in the right dose at the right time				
Walking or physical ambulation				
Bathing				
Shopping for personal items like groceries				
Housework or household chores				
Leaving her/him alone				
Her/his safety				
Her/his quality of life				
Falling or tripping				
Less interest or pleasure in doing things, hobbies or activities				
Feeling down, depressed, or hopeless				
Being stubborn, agitated, aggressive or resistive to help from others				
Feeling anxious, nervous, tense, fearful or panic				
Believing others are stealing from them or planning to harm them				
Hearing voices, seeing things or talking to people who are not there				
Poor appetite or overeating				
Falling asleep, staying asleep, or sleeping too much				
Acting impulsively, without thinking through the consequences of her/his actions				
Wandering, pacing, or doing things repeatedly				
Over the past **two weeks**, how often did **you** have problems with: (Use √ to indicate your answer.)	Not at all (0-1 day) 0 points	Several Days (2-6 days) 1 point	More than half the days (7-11 days) 2 points	Almost daily (12-14 days) 3 points
Your quality of life				
Your financial future				
Your mental health				
Your physical health				
Place Sticker Here	COGNITIVE SUBSCALE			
	FUNCTIONAL SUBSCALE			
	BEHAVIORAL AND MOOD SUBSCALE			
	CAREGIVER STRESS SUBSCALE			
	TOTAL SCORE			

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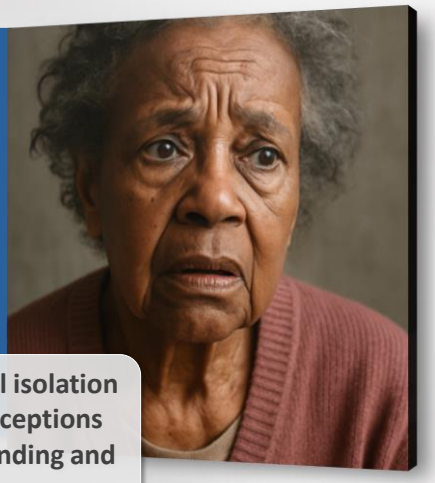
See The "Me" in Dementia: WORDS MATTER!

Words currently used to describe people who are living with dementia are frequently derogatory and discriminatory: "**demented**", "**victim**", and "**sufferer**," and the condition described as a "**dementing illness**" or an "**affliction.**"



Individuals face social isolation because negative perceptions can fuel misunderstanding and distrust

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Nonpharmacologic Strategies to Use for BPSD

DICE Model (Kales, Gitlin & Lykestos, 2015)

Describe the behavior: **Who, What, Where, When**.

Investigate cause(s): precipitating factors, unmet needs.

Create intervention that addresses cause(s).

Evaluate effectiveness.

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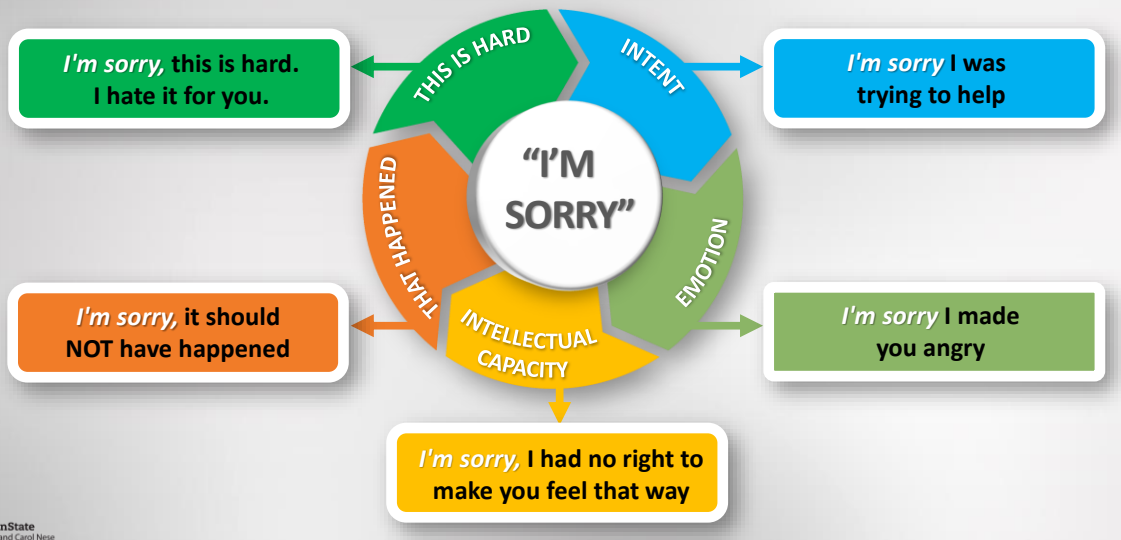
SKILL: Master 5 Ways to Say *"I'm Sorry"*



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Case 3:
Ms. P Another Year Later

- CC: more “confused” per daughter
- Daughter states she is in the hospital

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Case 3: Ms. P. Hospital Discharge Summary

- ER: presented “aggressive and agitated, +urine, elevated WBCs, cultures of urine and blood. Foley catheter inserted. Restraints: physical and chemical (Ativan IV).
- Admitted to ICU with urinary sepsis (36 hours) followed by 3 days on medical unit. IV ABT hydration. Gluc. 150-180. CAM positive.

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Case 3: Hospital Stay

- **During the first two days:**
  - Waxing and waning agitation
  - Visual hallucinations
  - IV Ativan and Haldol
- **Mostly bedrest:**
  - OOB the evening before discharge
  - Restraints d/c'ed late day 3
  - Poor oral intake - improved day 3-4 when daughter helped with meal.

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Case 3 Ms. P: Two-days after Hospital Discharge

- HPI per daughter (Ms. P says "I'm all right") prior to admission Ms. P was experiencing falls and increased confusion at the Assisted Living facility where she moved three months ago. She was on no new meds, continued on Namenda. During hospitalization Ms. P was restless, unaware of where she was and called out for her daughter frequently. Since discharge back to the Assisted Living, Ms. P has been in bed except for meals.
- **Meds:** Altace 5 mg qd, Lasix 20 mg qd, Lipitor 30 mg daily, Namenda 10 mg BID, Seroquel 50 mg bid, Glucotrol 5 mg daily
- **Physical exam:** -BP- 110/76 HR- 80. chair rise with one person assist, walks 10 feet with walker and one person assist. No focal deficits. Ext- no edema.

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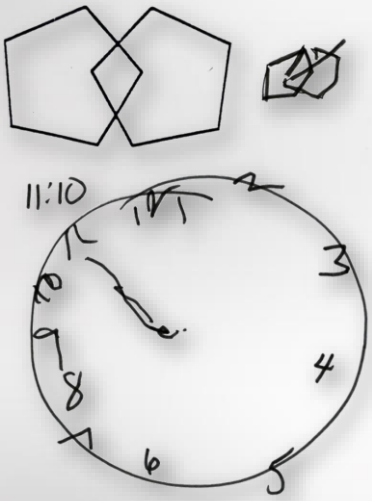
Ms. P's Results

MoCA=10



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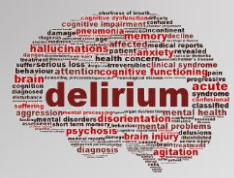

A medical Condition Characterized by a Disturbance in Attention and Awareness. It Develops Acutely and Can Fluctuate in Severity (American Delirium Society)

- Often **preventable** AND **underrecognized**
- After adjusting for confounders…
  - Short term: ↑death, ↑complications, ↑hospital LOS, ↓discharge to home
  - Long term: ↑death, ↑NH placement, ↑dementia
  - Costs of delirium: $60K over 1 year after episode.
  - Translates to $164 billion annually in U.S

(Witlox et. al., JAMA, 2010; Marcantonio et. al., Ann Int Med 2011; Leslie et. al. Arch Int Med, 2008, JAGS, 2011)

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Symptoms of Delirium

Impaired cognition: Delirium involves a decline in cognitive function, including difficulties with memory, orientation, and perception

Altered attention: **Patients may have difficulty maintaining focus**

Altered arousal: Patients may be somnolent or restless, or alternate between states (mixed)

Fluctuating symptoms: Delirium symptoms can vary in type and severity throughout the day, evening, and night.

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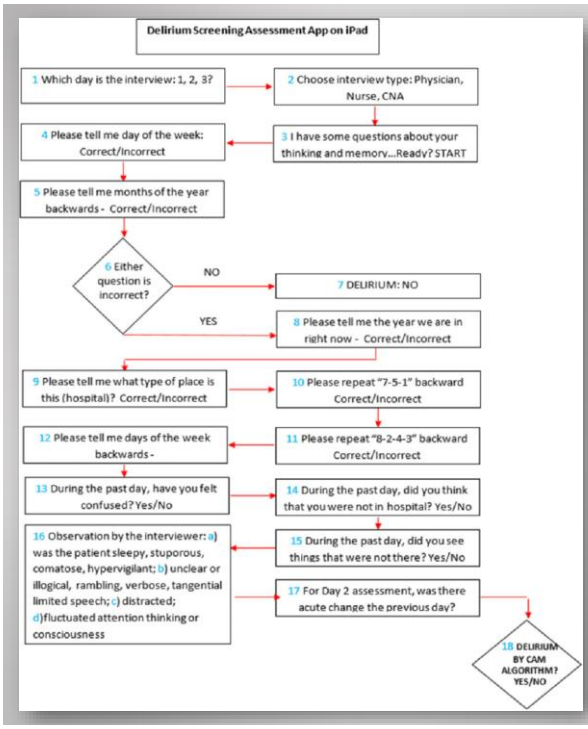

Diagnosis of Delirium:

Requires presence of Features 1 and 2 and *either* 3 or 4

1. Acute onset and fluctuating course
2. Inattention
3. Disorganized thinking
4. Altered level of consciousness

Diagnosis requires (1), (2), and either (3 or 4)

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Delirium Management

1. Identify delirium (early)
2. Assess/treat contributing factors
3. Prevent complications
4. Restore/maintain function: mobility, hydration/nutrition, sleep hygiene

FOUR KEY STEPS

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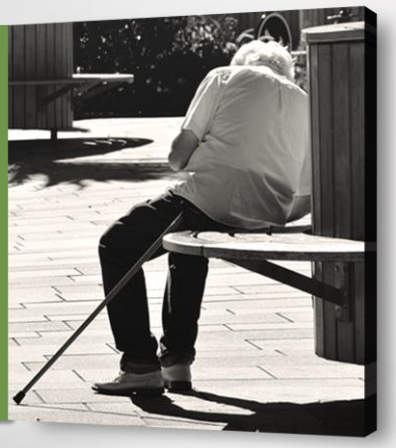
Mobility: The Ability to Move Oneself

(e.g., by walking, by using assistive devices, or by using transportation)

- **An essential part of activities of daily living (ADL) – necessary for:**
  - Basic ADL: eating, dressing, grooming, toileting
  - IADL: medication administration, cooking, shopping, transportation, recreational pursuits
- **Valued by older adult- integral to quality of life**
- **Critical marker of health**



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Assessing Mobility in Primary Care

- Recognize that older adults may be embarrassed or worried about having their mobility screened.
- Underscore that a mobility screen allows the care team to know the strengths of the older adult.
  - And maximize those strengths

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Assessing Mobility in Primary Care

Screen for mobility limitations at each clinical encounter

SUBJECTIVE EVALUATION

TWO QUESTIONs:

1. *For health or physical reasons, do you have difficulty climbing up 10 steps or walking one-quarter of a mile?*
2. *Because of underlying health or physical reasons, have you modified the way you climb 10 steps or walk a quarter of a mile?*

Self-report of ADL and IADL

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Track Overall Function (all settings)

ADL

ACTIVITIES POINTS (1 OR 0)	INDEPENDENCE: (1 POINT) NO supervision, direction or personal assistance	DEPENDENCE: (0 POINTS) WITH supervision, direction, personal assistance or total care
BATHING POINTS:_____	(1 POINT) Bathes self completely or needs help in bathing only a single part of the body such as the back, genital area or disabled extremity.	(0 POINTS) Needs help with bathing more than one part of the body, getting in or out of the tub or shower. Requires total bathing.
DRESSING POINTS:_____	(1 POINT) Gets clothes from closets and drawers and puts on clothes and outer garments complete with fasteners. May have help tying shoes.	(0 POINTS) Needs help with dressing self or needs to be completely dressed.
TOILETING POINTS:_____	(1 POINT) Goes to toilet, gets on and off, arranges clothes, cleans genital area without help.	(0 POINTS) Needs help transferring to the toilet, cleaning self or uses bedpan or commode.
TRANSFERRING POINTS:_____	(1 POINT) Moves in and out of bed or chair unassisted. Mechanical transferring aides are acceptable.	(0 POINTS) Needs help in moving from bed to chair or requires a complete transfer.
CONTINENCE POINTS:_____	(1 POINT) Exercises complete self control over urination and defecation.	(0 POINTS) Is partially or totally incontinent of bowel or bladder.
FEEDING POINTS:_____	(1 POINT) Gets food from plate into mouth without help. Preparation of food may be done by another person.	(0 POINTS) Needs partial or total help with feeding or requires parenteral feeding.

TOTAL POINTS = _____ *6 = High (patient independent) 0 = Low (patient very dependent)*

IADL

A. Ability to Use Telephone
1. Operates telephone on own initiative; looks up and dials numbers 1
2. Dials a few well-known numbers 1
3. Answers telephone, but does not dial 1
4. Does not use telephone at all 0

B. Shopping
1. Takes care of all shopping needs independently 1
2. Shops independently for small purchases 0
3. Needs to be accompanied on any shopping trip 0
4. Completely unable to shop 0

C. Food Preparation
1. Plans, prepares, and serves adequate meals independently 1
2. Prepares adequate meals if supplied with ingredients 0
3. Heats and serves prepared meals or prepares meals but does not maintain adequate diet 0
4. Needs to have meals prepared and served 0

D. Housekeeping
1. Maintains house alone with occasion assistance (heavy work) 1
2. Performs light daily tasks such as dishwashing, bed making 1
3. Performs light daily tasks, but cannot maintain acceptable level of cleanliness 1
4. Needs help with all home maintenance tasks 1
5. Does not participate in any housekeeping tasks 0

E. Laundry
1. Does personal laundry completely 1
2. Launders small items, rinses socks, stockings, etc 1
3. All laundry must be done by others 0

F. Mode of Transportation
1. Travels independently on public transportation or drives own car 1
2. Arranges own travel via taxi, but does not otherwise use public transportation 1
3. Travels on public transportation when assisted or accompanied by another 1
4. Travel limited to taxi or automobile with assistance of another 0
5. Does not travel at all 0

G. Responsibility for Own Medications
1. Is responsible for taking medication in correct dosages at correct time 1
2. Takes responsibility if medication is prepared in advance in separate dosages 0
3. Is not capable of dispensing own medication 0

H. Ability to Handle Finances
1. Manages financial matters independently (budgets, writes checks, pays rent and bills, goes to bank); collects and keeps track of income 1
2. Manages day-to-day purchases, but needs help with banking, major purchases, etc 1
3. Incapable of handling money 0

Scoring: For each category, circle the item description that most closely resembles the client's highest functional level (either 0 or 1).

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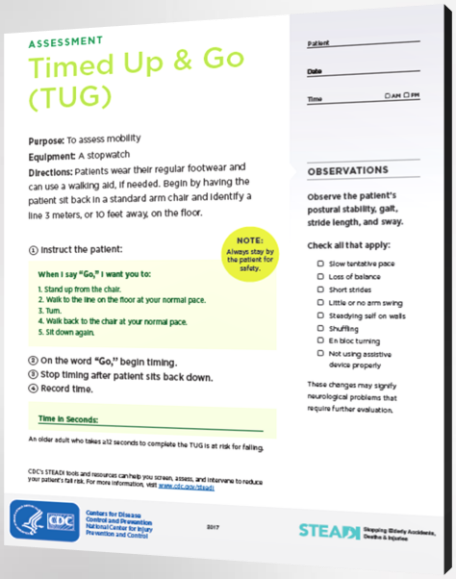
Objective Measure of Mobility Performance (all settings)

TUG Evaluates:

- Gait
- Balance
- Strength
- Need for/use of assistive device
- Fall risk
- Need for further evaluation/PT

Other tests

- Gait Speed Test
- Timed Up and Go (TUG)
- 6-Minute Walk Test
- Chair Stand Test
- Interpret results to track decline, fall risk, frailty



ASSESSMENT

Timed Up & Go (TUG)

Patient

Date

Time ☐AM ☐PM

Purpose: To assess mobility

Equipment: A stopwatch

Directions: Patients wear their regular footwear and can use a walking aid, if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters, or 10 feet away, on the floor.

① Instruct the patient:

When I say "Go," I want you to:
1. Stand up from the chair.
2. Walk to the line on the floor at your normal pace.
3. Turn.
4. Walk back to the chair at your normal pace.
5. Sit down again.

NOTE: Always stay by the patient for safety.

② On the word "Go," begin timing.
③ Stop timing after patient sits back down.
④ Record time.

Time in Seconds:

An older adult who takes ≥12 seconds to complete the TUG is at risk for falling.

CDC's STEADI tools and resources can help you screen, assess, and intervene to reduce your patient's fall risk. For more information, visit www.cdc.gov/steadi

OBSERVATIONS

Observe the patient's postural stability, gait, stride length, and sway.

Check all that apply:
- ☐ Slow tentative pace
- ☐ Loss of balance
- ☐ Short strides
- ☐ Little or no arm swing
- ☐ Steadying self on walls
- ☐ Shuffling
- ☐ En bloc turning
- ☐ Not using assistive device properly

These changes may signify neurological problems that require further evaluation.

CDC Centers for Disease Control and Prevention National Center for Injury Prevention and Control

2017

STEADI Stopping Elderly Accidents, Deaths & Injuries

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Assess Medications: for Causing Mobility Problems or Posing a Risk

CNS medication use is associated with mobility limitations secondary to decreased physical activity

- Benzodiazepines
- Antipsychotic drug use
- Antidepressants
- Opioids

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Ensure Early, Frequent, and Safe Mobility (IHI)

SETTING MOBILITY GOALS

- **Focus on *what matters*** to the person **to set goals** - walking to bathroom, walking outside…..
- ***What matters*** **guides plan** to meet goals
- ***What matters*** provides **motivation to meet the goals** – going on a trip, grandchild's soccer, attending church, game,….

- **Manage Impairments That Reduce Mobility**

(e.g., pain, neuromuscular conditions, diabetic neuropathy)

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Everyone Can Benefit from, and Deserves a Function-focused Approach to Care

Benefits of Physical Activity

- Lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, colon cancer and breast cancer, a higher level of cardiorespiratory and muscular fitness, healthier body mass and composition; and bone health
- Higher levels of functional health, a lower risk of falling, and better cognitive function and mood, and less pain

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Best Exercises for Older Adults

- **Brisk walking**: Aerobic
- **Stationary cycling**: Aerobic
- **Swimming**: Aerobic
- **Squats**: Balance
- **Tai Chi**: Balance, flexibility
- **Arm weights**: Strength-training
- **Regular** stretching

One-minute movement videos by Kay Vannorman from Brilliant Aging

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Preferences Matter
Other ways to incorporate PA
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Chair Activity
B•I•N•G•O
In the long-term care setting: activities that promote physical, cognitive, and social function

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The Hospital Experience: Hospitalization-associated Disability

Occurs when immobility creates a loss of muscle mass and significant functional decline; culprits: bedrest and lack of physical activity

Occurs in 30%-70% of patients 70 years and older

Often begins prior to admission

One year following discharge, fewer than half of older adults have recovered to their pre-illness levels of function

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(Boyd et al., 2008; Covinsky et al., 2011; Boltz et al., 2015)

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Interventions to Optimize Mobility

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The Johns Hopkins Activity and Mobility Promotion Program (JH-AMP)

JH-AMP is a systematic approach that includes 8 steps

1. Organizational prioritization
2. Systematic measurement and daily mobility goal
3. Barrier mitigation
4. Local interdisciplinary roles
5. Sustainable education and training
6. Workflow integration
7. Data feedback; and
8. Promotion and awareness

McLaughlin, K. H., et al. & JH-AMP Group (2023). The Johns Hopkins Activity and Mobility Promotion Program: A Framework to Increase Activity and Mobility Among Hospitalized Patients. *Journal of nursing care quality*, *38*(2), 164–170. https://doi.org/10.1097/NCQ.0000000000000678.

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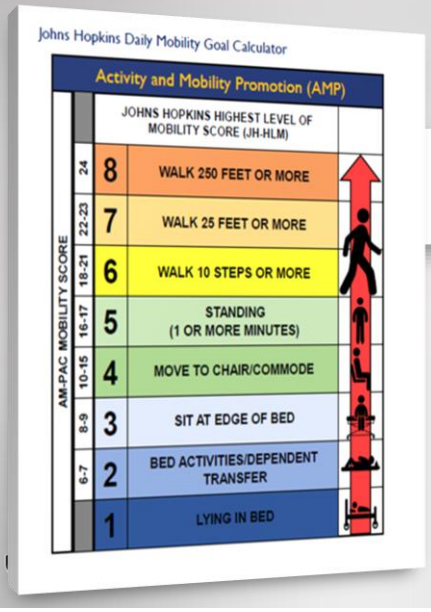
Setting Goals Using the JH_HLM Score



Align goals with assessment with plan to progress (on a continuum of range of motion to independent ambulation)

Encourage physical activity based on capability (eating, bathing etc.)

- **Level 8:** Add walking to dining area, bathroom
- **Level 6, 7:** Add walking short distances, including to bathroom
- **Level 5:** Add sit to stand; chair exercises
- **Level 4:** Assist out of bed; chair exercises
- **Level 3:** Add sitting at edge of bed
- **Level 2:** Add out of bed with help
- **Level 1:** Promote bed mobility, Range of Motion, participation in bathing/ grooming, self-feeding

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Structured Exercise Programs

- Feasibility problems
- High attrition
- Inconclusive results

- May not lead to any difference in function or harms.
- May slightly reduce the length of stay in hospital, may slightly increase the number of patients who go home instead of to a nursing home or another hospital.
- May slightly reduce the cost of care to the health system.

de Morton N, Keating JL, Jeffs K. Exercise for acutely hospitalised older medical patients. Cochrane Database of Systematic Reviews. Issue 1. Art. No.: CD005955

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Nurse-Led Mobility Protocols for Hospitalized Older Adults: A Systematic Review

Caba LW, Goldin D, Marenus MW. Promoting Nurse-Led Mobility Protocols for Hospitalized Older Adults: A Systematic Review. *J Gerontol Nurs*. 2022;48

- One study was a randomized controlled trial, four were quasi-experimental and two were prospective studies
- Findings revealed that older adult patients who participated in mobility protocols or early mobility programs were mobilized significantly more and were more mobile after discharge. Several studies also showed reduced hospital length of stay (LOS)

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Effects of Unstructured Mobility Programs in Older Hospitalized General Medicine Patients: A Systematic Review and Meta-Analysis

Reynolds et al. Journal of the American Medical Directors Association, *22*(10), 2063–2073.e6

- Three RCTs and 10 quasi-experimental studies
- Unstructured mobility interventions in general medicine units improve older hospitalized patients':
  - physical activity
  - physical function
- *More RCTs are needed to evaluate the effectiveness of mobility interventions, particularly on length of stay and quality of life*

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Mobility in Critical Care

Built into ACDEF Protocol

- **A**ssess, Prevent, and Manage Pain
- **B**oth Spontaneous Awakening Trials (SAT) and Spontaneous Breathing Trials (SBT)
- **C**hoice of analgesia and sedation
- **D**elirium: Assess, Prevent, and Manage
- **E**arly mobility and Exercise
- **F**amily engagement and empowerment.

Early exercise and progressive mobility has demonstrated:

- Decreased duration of delirium
- Less ventilator days.

Marra, A. at al. (2017). The ABCDEF Bundle in Critical Care. *Critical care clinics*, *33*(2), 225–243. https://doi.org/10.1016/j.ccc.2016.12.005

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Function-focused Care: Integrating Physical Activity into All Care Interactions

FOUR COMPONENTS:

Environmental and policy assessments | Goal setting | Education | Mentoring

- 13 studies assessing physical function found significant improvements in effectiveness in aspects such as movement, balance, and activities of daily living. (Lee, S. J. et al.(2019). The Effectiveness of Function-Focused Care Interventions in nursing Homes: A Systematic Review. *JNR*, *27*(1), 1–13).
- 85 assisted livings (N = 794 residents) showed a **decrease in fall rates** (from 26 % to 20 % in treatment vs an increase in control), and a **lower rate of nursing facility transfers at 4 and 12 months**; no differences were found in ER or hospital transfers Resnick, B., Boltz, M., Galik, E., & Zhu, S. (2021). The Impact of a Randomized Controlled Trial Testing the Implementation of Function-Focused Care in Assisted Living on Resident Falls, Hospitalizations, and Nursing Home Transfers. *Journal of aging and physical activity*, *29*(6), 922–930.

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Family-centered Intervention Focused on Function (Fam-FFC):

Multi-component Intervention

R01AG054425

- Environment and Policy Assessment
- Education and Training for Nursing Staff
- Development of FamPath with family and patient
  - Family/patient education
  - Jointly developed goals and treatment plans in hospital
  - Post acute care follow-up by phone weekly for 8 weeks then monthly for 4 months

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Promoting Mobility/PA in the Person with Dementia

- To promote sense of well-being and cognition
- To prevent unnecessary functional loss and care dependency

Educating / Working with Families:

- Encourage self-care (bathing, dressing, grooming, making bed…..)
- Activities that promote mobility (structured routine): vacuuming, raking, horseshoes, dancing, gardening……and meaningful cognitive stimulation

MORNING

- Wash, brush teeth, get dressed
- Prepare and eat breakfast
- Have a conversation over coffee.
- Discuss the newspaper, try a craft project, reminisce about old photos
- Take a break, have some quiet time
- Do some chores together
- Take a walk, play an active game

AFTERNOON

- Prepare and eat lunch, read mail, wash dishes
- Listen to music, do crossword puzzles, watch TV
- Do some gardening, take a walk, dance …
- Take a short break or nap

EVENING

- Prepare and eat dinner, clean up the kitchen
- Reminisce over coffee and dessert
- Play cards, watch a movie, give a massage
- Take a bath, get ready for bed, read a book

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Fam-FFC Outcomes

Boltz M. et al. Innov Aging. 2023 Aug 16;7(7):igad083
Boltz M. et al. *JGN* . 2021;47(9):13-20
Boltz M. et al. JAGS 2015; Neurodis Mgt 2016

Family care partners showed increased preparedness

Goal attainment was associated with delirium abatement and less hospital readmissions

Patients exposed to Fam-FFC were more likely to **RETURN TO BASELINE FUNCTION** at two and six months when compared to those exposed to routine care.

- Results are consistent with goals set by FCPs which focused on mobility and self-care

Fam-FFC patients showed less delirium and **FEWER BEHAVIORAL SYMPTOMS OF DISTRESS** as compared to the control group at 6 months.

- FCPs were helped to provide function-focused care, provided in tandem with a structured daily routine and meaningful activities post-hospitalization

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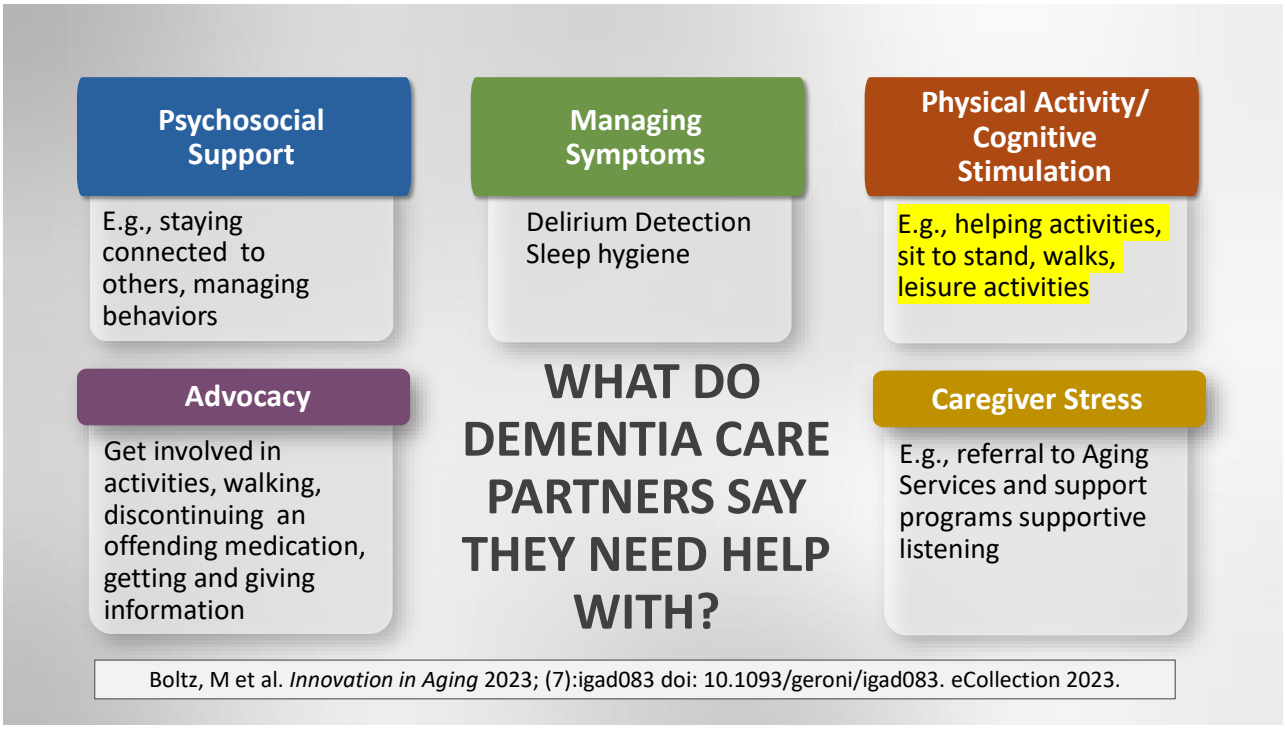

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Mobility and Cognition: Concomitant Assessment

Gait Speed as a Brain Vital Sign

- Gait speed is predictive of cognitive decline and mortality
- <0.8 m/s linked to adverse outcomes
- Simple, non-invasive screening tool

Motoric Cognitive Risk Syndrome (MCR)

- Defined as subjective cognitive complaints + slow gait speed
- A pre-dementia syndrome
- Associated with increased risk of Alzheimer's and mortality

Dual Task Testing

- Walk while performing a cognitive task (e.g., naming animals)
- Reveals early executive dysfunction
- Predictive of falls and dementia risk

- *Montero-Odasso, M. et al. The journals of gerontology. Series A, Biological sciences and medical sciences. 2019 May 16;74(6):897-9.*
- *Pavol, M. A. et al. (2017). Rehabilitation research and practice, 2017, 4516219.*

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Combined Cognitive and Physical Interventions

- Dual-task exercises (e.g., dancing while counting)
- Cognitive-motor therapy in PT/OT
- Greater benefit than single-domain training

- Virtual PT and cognitive sessions are effective
- Apps: gait tracking, memory games, medication prompts
- Reduces barriers for rural or mobility-limited patients

- FINGER Study: Physical activity + cognitive training slows decline
- LIFE Study: Mobility training reduces disability
- New trials on dual-task training, wearable tech

- Medicare now supports mobility and cognition screening
- Bundled payment models reward function-focused care
- Incentives align with 4Ms and value-based care

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SUMMARY OF KEY POINTS

- Mobility and mentation are deeply intertwined.
- Decline in one accelerates decline in the other.
- Assess, intervene, and support across all care settings.
- 4Ms framework provides a practical framework.
- **Gaps**: Limited long-term studies on combined interventions
- Underrepresentation of diverse populations in research
- Lack of integration between primary care and rehabilitation

CALL TO ACTION

- **Clinicians**: Screen and intervene early
- **Care Teams**: Integrate physical and cognitive assessment and take a rehabilitative approach
- **Organizations**: Adopt the 4Ms across settings
- **Policymakers**: Support funding for integrated care

Future Directions

- Personalized care using AI and wearable tech
- Scalable dual-domain programs (mobility + mentation)
- Age-Friendly Health Systems adoption of 4Ms – WITH EVIDENCE!

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Questions & Discussion

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Thank You

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