Case study: Mild cognitive impairment (MCI) due to Alzheimer’s disease (AD)

This content is intended for health care professionals only for educational and informational purposes and does not substitute for sound medical judgement or clinical decision making in the context of medical treatment

The Early AD diagnostic pathway

Patient presents with symptoms

Detect

- Symptoms & Observations
- Medical & family history

Evaluate

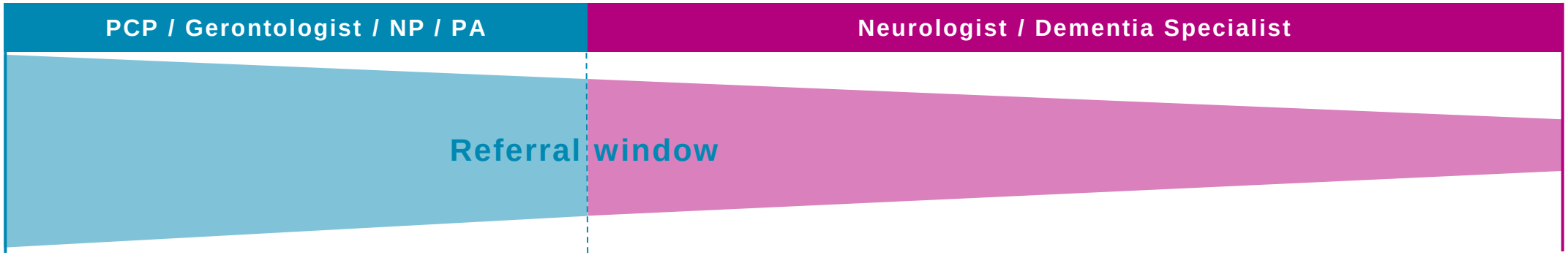
- Physical & neurological exam, labs
- Cognitive, functional & behavioral assessments
- Structural imaging *(specialist)*

Diagnose

- AD biomarkers (CSF and/or PET)
- Counselling and disclosure of a diagnosis

Manage

- Shared decision-making model with patient and family[2]
- Treat cognition, treat behaviors[3,4]
- Lifestyle interventions[5]



Adapted image from: Porsteinsson AP, et al. J Prev Alz Dis 2021;8:371–386; This work is licensed by Porsteinsson et al under CC BY 4.0
CSF, cerebrospinal fluid; PCP, primary care physician; NP, nurse practitioner; PA, physician associate; PET, positron emission tomography
1. Porsteinsson AP, et al. J Prev Alzheimers Dis 2021;8:371–386; 2. Mattos MK, et al. Dementia. 2023;22(4):875-909; 3. Livingston G, et al. Lancet 2020;396:413–446; 4. Livingston G, et al. Lancet 2017;390:2673–2734; 5. Chen J, et al. Clin Interv Aging 2019;14:1243–1254

Delays in early **detection** of AD

PCPs, neurologists, psychiatrists, and geriatricians play a crucial role in the detection, diagnosis, and treatment of AD[1–6]

Detection of early stages of AD is challenging.[1–4]

- **AD-related early cognitive decline is difficult to differentiate from normal aging[1,5]**
- Comorbid medical conditions (e.g., stroke, depression) can impact cognitive and functional abilities[1]
- Patients wait years for an accurate diagnosis and appropriate intervention[6]

Cognitive impairment may remain unrecognized in up to 80% of affected patients in primary care[7]

AD, Alzheimer's disease; MCI, mild cognitive impairment; PCP, primary care provider

1. Galvin JE. Curr Geriatr Rep 2018;7:19–25; 2. Dubois B, et al. J Alzheimers Dis 2016;49:617–631; 3. Sabbagh MN, et al. J Prev Alz Dis 2020;
4. Porsteinsson AP, J Prev Alzheimers Dis. 2021;8:371–386; 5. Liss JL, et al. J Intern Med. 2021;290(2):310–334;
6. Galvin JE, et al. Front Neurol 2021;11:592302; 7. Cordell CB, et al. Alzheimers Dement. 2013;9(2):141-150

1 Detect

African American Female, 75 yrs

Meet Lisa

Retired pediatrician, mother of 3, grandmother of 3

Walks 3 times/week, active in church, avid reader and cook

Medical history: Mild hypertension (controlled), mild hyperlipidemia, and type 2 diabetes well-controlled w/ medications (amlodipine, rosuvastatin, metformin)

History of Present Illness (HPI): Lisa visits her PCP for her routine yearly physical with her husband. He mentions that she is "forgetting things". Lisa denies any difficulties, says she is just tired…..and her husband is overprotective

Over the past 6 months, he witnessed increased signs of **cognitive changes**:

- Forgetting why she walked into a room
- Misplacing keys, wallet
- Mild word-finding difficulties often w/ frustration

Functional changes: Preservation of reading ability and daily functioning, but less motivated to initiate or complete tasks or socialize with peers

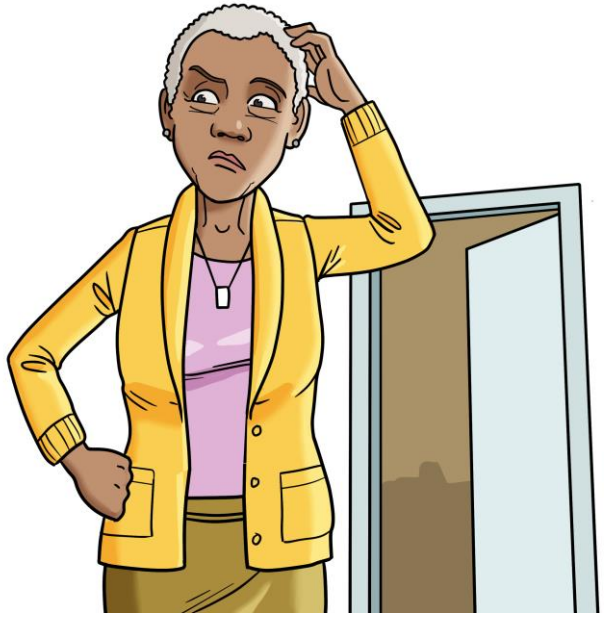
Behavior: Mild anxiety, irritability, argumentativeness

Family history

- Father (85 years) and mother (79 years) both died from cardiovascular-related complications; mother had suspected memory decline
- Two younger brothers and one younger sister with no remarkable medical history

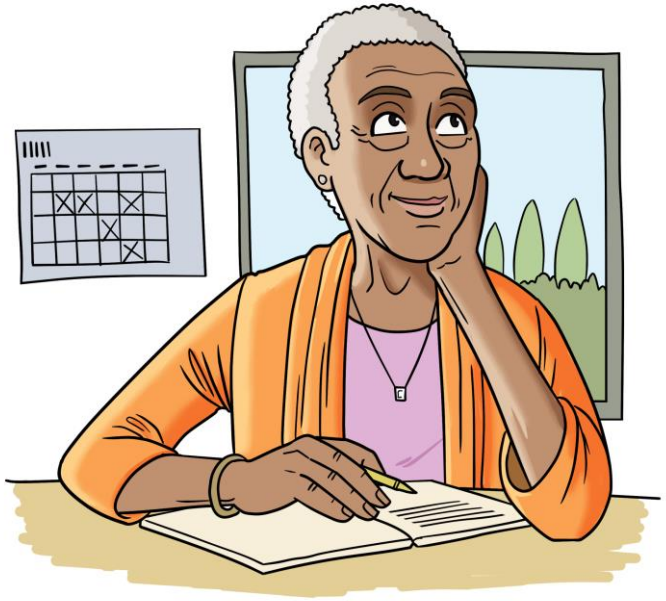
PCP, primary care physician

Identifying key symptoms in the early stages and how they differ from typical aging



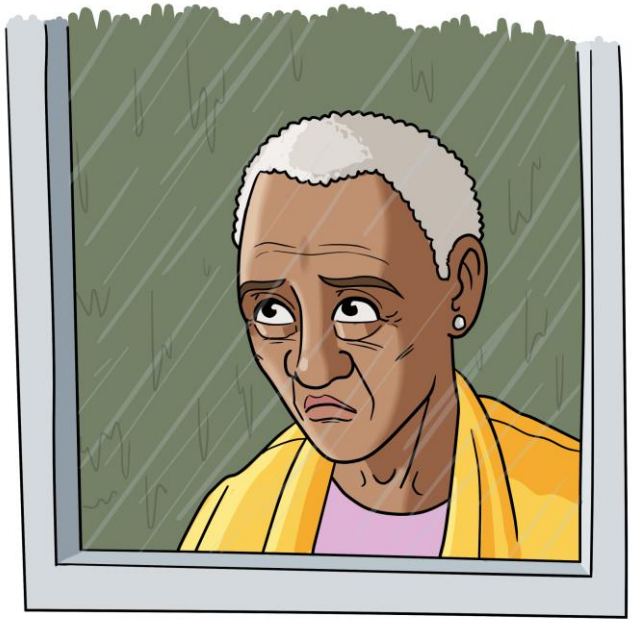
Cognition[1,2]

- ❑ Experiencing short-term memory loss?
- ❑ Struggling to learn new things?
- ❑ Experiencing word-finding difficulties or communication difficulties?
- ❑ Repeating him/herself?



Function[3]

- ❑ Starting to need support with complex activities related to independent living, such as managing finances?



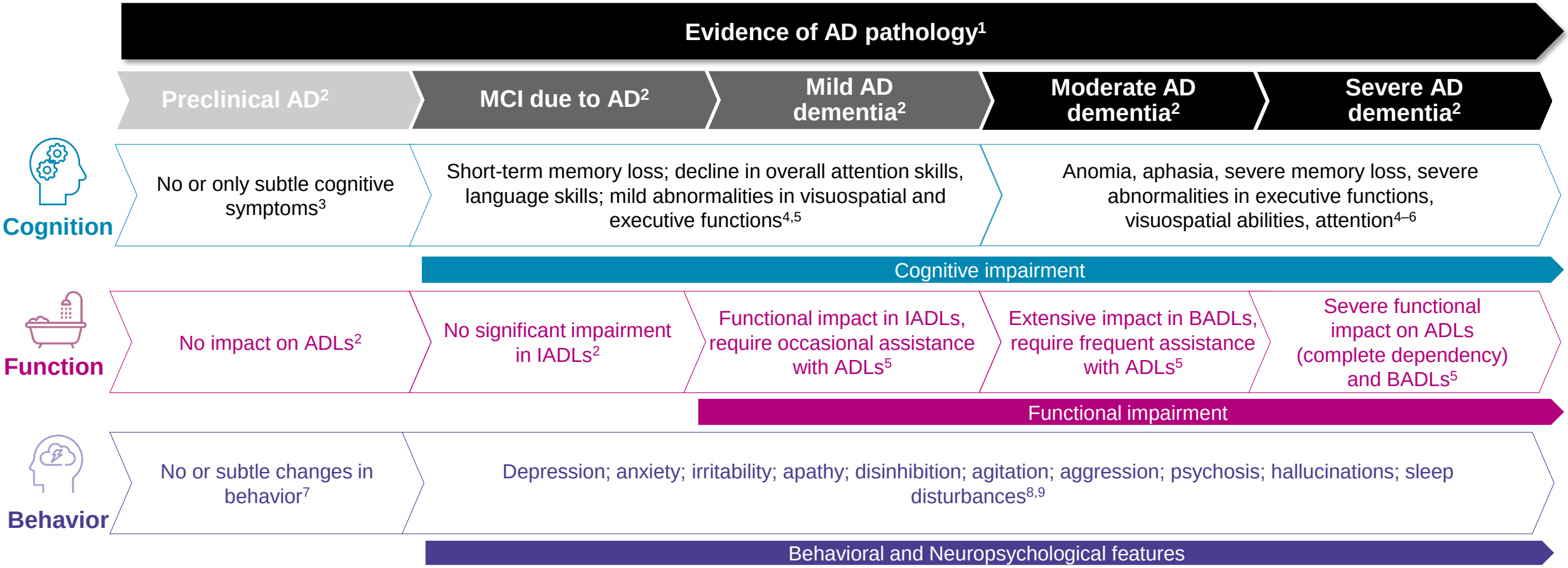
Behavior/psychological[1]

- ❑ Struggling to participate in meaningful social situations?
- ❑ Signs of impulsivity?
- ❑ Signs of apathy or depression?

Is the family member/care partner sharing/communicating concerns?[4]

1. Porsteinsson AP, et al. J Prev Alzheimers Dis 2021;8:371–386; 2. NIH. What Are the Signs of Alzheimer's Disease?: https://www.nia.nih.gov/health/what-are-signs-alzheimers-disease (Accessed April 2023); 3. NIH. Managing Money Problems in Alzheimer's Disease: https://www.nia.nih.gov/health/managing-money-problems-alzheimers-disease (Accessed April 2023); Centers for Disease Control and Prevention. 10 Warning Signs of Alzheimer's: https://www.cdc.gov/aging/healthybrain/ten-warning-signs.html (Accessed April 2023)

The AD clinical continuum and disease staging



AD, Alzheimer's disease; ADL, activities of daily living; BADL, basic activities of daily living; IADL, instrumental activities of daily living; MCI, mild cognitive impairment

1. Aisen PS, et al. Alzheimers Res Ther 2017;9:60; 2. Jack CR Jr, et al. Alzheimers Dement 2018;14:535–562; 3. Harada CN, et al. Clin Geriatr Med 2013;29:737–752; 4. Kazim SF, Iqbal K. Mol Neurodegener 2016;11:50
5. Mayo Clinic. Alzheimer's stages: How the disease progresses. https://www.mayoclinic.org/diseases-conditions/alzheimers-disease/in-depth/alzheimers-stages/art-20048448 (Accessed April 2023); 6. Kipps CM, Hodges JR. J Neurol Neurosurg Psychiatry 2005;76(Suppl. 1):i22–i30;
7. Ismail Z, et al. Alzheimers Dement 2016;12:195–202; 8. Eikelboom WS, et al. Neurology 2021;97:e1276–e1287; 9. Lanctôt KL, et al. Alzheimers Dement (N Y) 2017;3:440–449; 11.

What tools can we use to **assess** early changes in cognition, function and behavior?

Some assessments are less sensitive/specific to early stages than others and often cannot support dementia staging when administered in isolation

Cognition[1]

MMSE
Mini-Mental State Examination

MoCA
Montreal Cognitive Assessment

Mini-Cog
Mini cognitive assessment instrument

AD8
Alzheimer's Disease 8 Interview

IQCODE
Informant Questionnaire on Cognitive Decline in the Elderly

Function[1,2]

FAQ
Functional Activities Questionnaire

Lawton IADL scale
Lawton Instrumental Activities of Daily Living

Amsterdam IADL
Amsterdam Instrumental Activities of Daily Living

FAST
Functional Assessment Screening Tool

Behavior[1,3]

NPI-Q
Neuropsychiatric Inventory Questionnaire

BEHAVE-AD
Behavioral Pathology in Alzheimer's Disease Rating Scale

GDS
Geriatric Depression Scale

Consider factors that may affect test performance and interpretation: education, skills, pre-morbid functioning/attainment, language, sensory impairment, psychiatric illness, physical or neurologic problems[1,4]

AD8, Alzheimer's Disease 8 Interview; A-IADL-Q, Amsterdam Instrumental Activities of Daily Living Questionnaire; ADSC-ADL, AD Cooperative Study – Activities of Daily Living ;BEHAVE-AD, Behavioral Pathology in Alzheimer's Disease Rating Scale; FAQ, Functional Activities Questionnaire; FAST, Functional Assessment Screening Tool; GDS, Geriatric Depression Scale; IQ-CODE, Informant Questionnaire on Cognitive Decline in the Elderly; Mini-Cog, mini cognitive assessment instrument; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; NPI-Q, Neuropsychiatric Inventory Questionnaire; QDRS, Quick Dementia Rating System

1. Porsteinsson AP, et al. J Prev Alzheimers Dis 2021;8:371–386; 2. Alzheimer's Association. Lawton Instrumental Activities of Daily Living (IADL) Scale https://www.alz.org/careplanning/downloads/lawton-iadl.pdf (Accessed April 2023); 3. Reisberg B, et al. Dement Geriatr Cogn Disord 2014;38;89–146; 4. Kipps CM, Hodges JR. J Neurol Neurosurg Psychiatry 2005;76(Suppl. 1):i22–i30

2 Evaluate: initial test

Findings from the initial office exam

- **Cognition:** MMSE: 27/30
  - Orientation → 1 point lost
  - Memory → 2 points lost
- Blood work (CMP, CBC, TSH, Vitamin B12, lipid profile, HbA1c) and findings:
  - Elevated lipid profile
  - HbA1c (<6.5%) and all other assessments were within normal limits

Referral to neurologist…

Lisa's **MMSE is low for her education level**. Most points are lost on the memory portion of the test

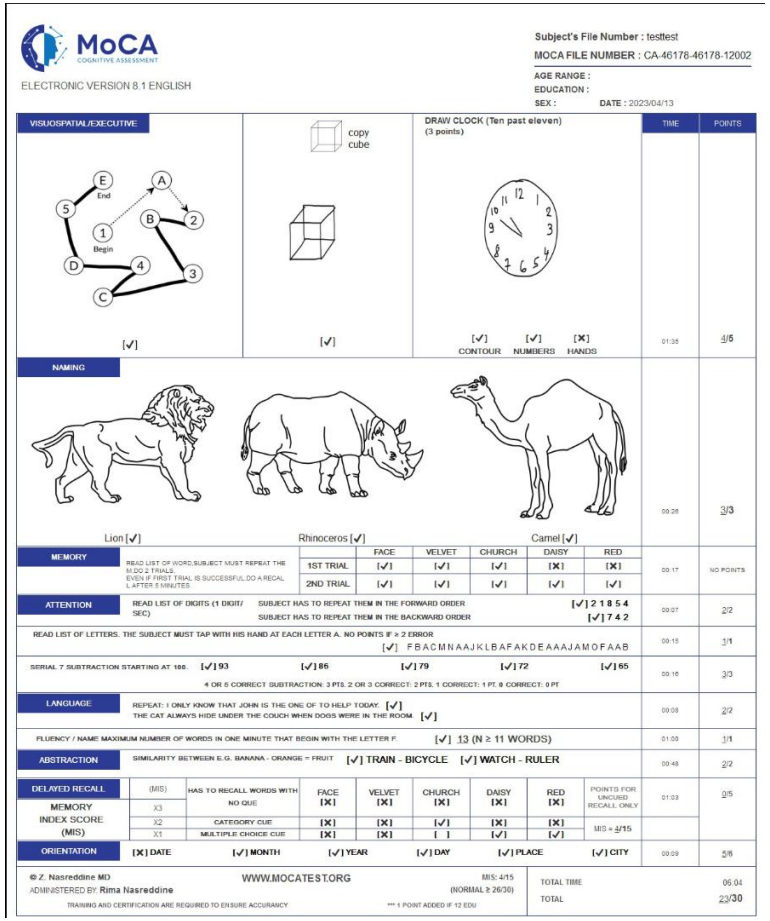
MMSE test interpretation

Time to use (minutes)	Scoring system	Validity to detect dementia
5–10 minutes	Cutoff: 23–24 for dementia	Sensitivity: 89% Specificity: 89%[1]

CBC, complete blood count; CMP, comprehensive metabolic panel; HbA1c, hemoglobin 1AC; MMSE, mini-state mental exam; TSH, thyroid stimulating hormone.

1. Patnode CD, et al. Screening for Cognitive Impairment in Older Adults: An Evidence Update for the U.S. Preventive Services Task Force. In: Rockville (MD): Agency for Healthcare Research and Quality (US); Report No: 19-05257-EF-1. US Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews

2 Evaluate: cognition



MoCA COGNITIVE ASSESSMENT
ELECTRONIC VERSION 8.1 ENGLISH

Subject's File Number : testtest
MOCA FILE NUMBER : CA-46178-46178-12002
AGE RANGE :
EDUCATION :
SEX : DATE : 2023/04/13

			TIME	POINTS
VISUOSPATIAL/EXECUTIVE	copy cube	DRAW CLOCK (Ten past eleven) (3 points)		
[✓]	[✓]	[✓] CONTOUR [✓] NUMBERS [✗] HANDS	01:35	4/5
NAMING	Lion [✓] Rhinoceros [✓] Camel [✓]		00:26	3/3

		FACE	VELVET	CHURCH	DAISY	RED		
MEMORY	1ST TRIAL	[✓]	[✓]	[✓]	[✗]	[✗]	00:17	NO POINTS
	2ND TRIAL	[✓]	[✓]	[✓]	[✓]	[✓]		

ATTENTION	READ LIST OF DIGITS (1 DIGIT/SEC)	SUBJECT HAS TO REPEAT THEM IN THE FORWARD ORDER [✓] 2 1 8 5 4 SUBJECT HAS TO REPEAT THEM IN THE BACKWARD ORDER [✓] 7 4 2	00:07 2/2
READ LIST OF LETTERS. THE SUBJECT MUST TAP WITH HIS HAND AT EACH LETTER A. NO POINTS IF > 2 ERROR		[✓] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B	00:15 1/1
SERIAL 7 SUBTRACTION STARTING AT 100.	[✓] 93	[✓] 86 [✓] 79 [✓] 72 [✓] 65	00:16 3/3
	4 OR 5 CORRECT SUBTRACTION: 3 PTS, 2 OR 3 CORRECT: 2 PTS, 1 CORRECT: 1 PT, 0 CORRECT: 0 PT		
LANGUAGE	REPEAT: I ONLY KNOW THAT JOHN IS THE ONE OF TO HELP TODAY. [✓] THE CAT ALWAYS HIDE UNDER THE COUCH WHEN DOGS WERE IN THE ROOM [✓]		00:08 2/2
FLUENCY / NAME MAXIMUM NUMBER OF WORDS IN ONE MINUTE THAT BEGIN WITH THE LETTER F.		[✓] 13 (N ≥ 11 WORDS)	01:00 1/1
ABSTRACTION	SIMILARITY BETWEEN E.G. BANANA - ORANGE = FRUIT	[✓] TRAIN - BICYCLE [✓] WATCH - RULER	00:48 2/2

			FACE	VELVET	CHURCH	DAISY	RED		
DELAYED RECALL	(MIS)	HAS TO RECALL WORDS WITH NO QUE	[✗]	[✗]	[✗]	[✗]	[✗]	POINTS FOR UNCUED RECALL ONLY	01:03 0/5
MEMORY INDEX SCORE (MIS)	X3								
	X2	CATEGORY CUE	[✗]	[✗]	[✓]	[✗]	[✗]	MIS = 4/15	
	X1	MULTIPLE CHOICE CUE	[✗]	[✗]	[ ]	[✓]	[✓]		

ORIENTATION	[✗] DATE	[✓] MONTH	[✓] YEAR	[✓] DAY	[✓] PLACE	[✓] CITY	00:09 5/6

© Z. Nasreddine MD WWW.MOCATEST.ORG MIS: 4/15 (NORMAL ≥ 26/30) TOTAL TIME 06:04
ADMINISTERED BY: Rima Nasreddine TOTAL 23/30
TRAINING AND CERTIFICATION ARE REQUIRED TO ENSURE ACCURACY *** 1 POINT ADDED IF 12 EDU

MCI, mild cognitive impairment; MoCA, Montreal Cognitive Assessment
Galvin JE. Curr Geriatr Rep 2018;7:19–25

- **Neurologic examination within normal limits**
- **Neurologist decides to perform further testing**
- **Cognition:** Montreal Cognitive Assessment (MoCA): 23/30 (impairment)

Lisa's ability to recall words in the memory portion (**delayed recall**) of the MoCA test is the most impacted, suggesting an amnestic syndrome

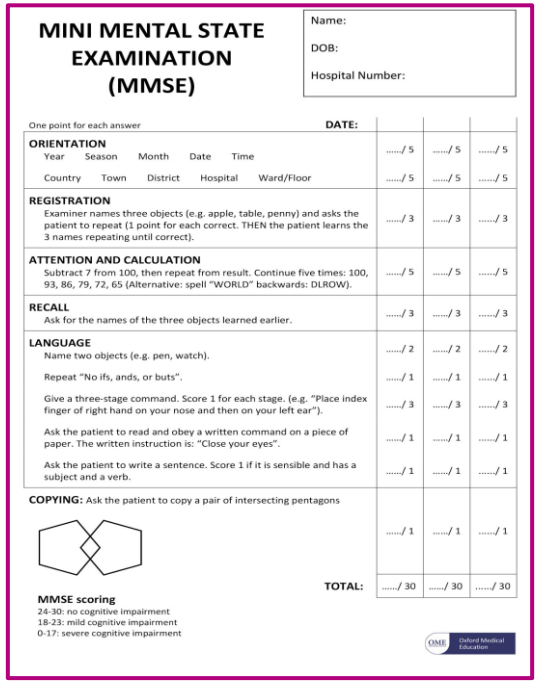
MoCA test interpretation

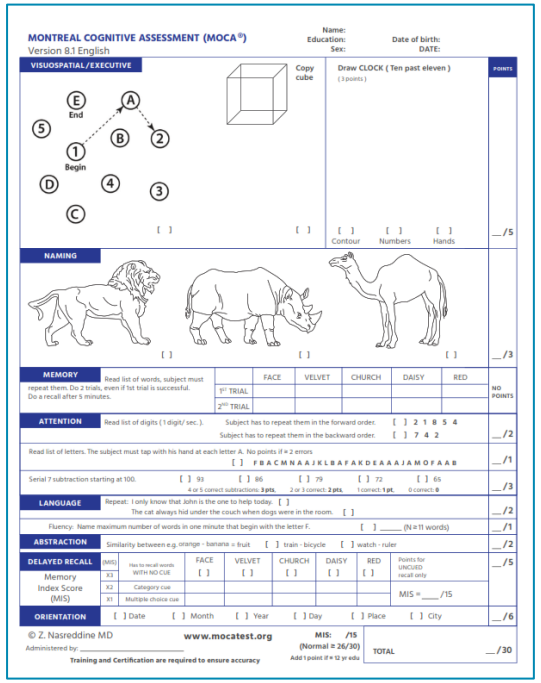
Time to use (minutes)	Scoring system	Validity
10–12	Less than 26 detects MCI or dementia	Sensitivity for MCI: 90% Sensitivity for dementia: 100%

What do the differences in MMSE and MoCA scores mean?

Shared measures
Orientation; Memory; Language; Attention[1]

Assessed only by MoCA[1]
Executive function





MMSE

- Easy to administer[1]
- Moderate psychometric properties[2]
- Floor (not able to discern progression) and ceiling effects (in highly educated)[3]
- Not ideal at detecting mild impairment[4]

MoCA

- Requires training[1]
- Psychometrically robust (high test-retest reliability and content validity)[2]
- Low education, primary language, culture can impact interpretation[5]*
- Superior to MMSE in identification of MCI[6]

*addition of one point for individuals with less than a 12th grade education

MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; image on the right: Montreal Cognitive Assessment (MoCA) Version 8.1. Available from: https://www.mocatest.org/the-moca-test/
Image on the left from Oxford Medical Education. MMSE. Available from: https://oxfordmedicaleducation.com/geriatrics/mini-mental-state-examination-mmse/;

1. Sheehan B. Ther Adv Neurol Disord 2012;5:349–358; 2. Dementia Action Collaborative – Washington State. Available from: https://www.dshs.wa.gov/sites/default/files/ALTSA/stakeholders/documents/AD/DAC%20Screening%20Position%20Paper.pdf;
3. Franco-Marina F, et al. *International Psychogeriatrics, 22*(1), 72-81. 4. Arevalo-Rodriguez I, et al. Cochrane Database Syst Rev 2021;7:CD010783; 5. Galvin JE. Curr Geriatr Rep 2018;7:19–25; 6. Pinto TC, et al. Int Psychogeriatr 2019;31:491–504

Eisai hhc human health care

2 Evaluate: function

Informant (function): Functional assessment questionnaire (FAQ): 4/30

- **Writing checks, paying bills, keeping financial records → 1**
- **Assembling tax or business records → 1**
- Shopping alone → 0
- Playing a game of skill 0
- Making coffee or tea → 0
- Preparing a balanced meal → 0
- Keeping track of current events → 0
- Attending to and understanding a television program, book, or magazine → 0
- **Remembering appointments, family occasions, medications → 1**
- **Traveling out of the neighborhood → 1**

SCORE: 0 = normal; 1 = has difficulty but does without assistance; 2 = requires assistance; 3 = dependent[1]

Lisa has difficulty in some of the more complex tasks but is still able to complete them by herself

Test performance:

- ❑ The FAQ is a **consistently accurate** instrument with **good sensitivity** (85%) to identify an individual's functional impairment[1]
- ❑ The FAQ demonstrates **high reliability** (exceeding 0.90)[1]

FAQ, functional assessment questionnaire

1. Alzheimer's Association. Available from: https://www.alz.org/careplanning/downloads/functional-activities-questionnaire.pdf (Accessed April 2023)

2 Evaluate: behavior

Behavior: Neuropsychiatric Inventory Questionnaire (NPI-Q): **total severity = 2; total caregiver distress = 2**

- Symptoms endorsed in three domains:
  - Anxiety
  - Depression
- 1 point (**mild**) for each of the domains for severity
- 1 point (**minimal distress**) for each of the domains for caregiver distress

Lisa is experiencing mild anxiety and depression based on her NPI-Q score; this is creating some distress for her husband

12 Domains:

- Agitation
- Delusions
- Hallucinations
- **Depression**
- Euphoria
- Aberrant motor behavior
- Apathy
- Irritability
- Disinhibition
- **Anxiety**
- Sleep
- Eating

- ❑ NPI-Q has **three scores** reported for each domain:[1]
  - ❑ Presence of symptoms
  - ❑ Severity on a 0–3 scale (0 = none, 1 = mild, 2 = moderate, 3 = severe)
  - ❑ Caregiver distress on a 0–5 scale (0 = no distress, 5 = extreme distress)
- ❑ NPI-Q takes approximately **5 minutes** to complete[1]

1. Alzheimer's Association. The Neuropsychiatric Inventory Questionnaire. Available from: https://www.alz.org/careplanning/downloads/npiq-questionnaire.pdf (Accessed April 2023)

2 Evaluate: structural imaging

- Neurologist orders brain magnetic resonance imaging (MRI) to assess brain structure and rule out other causes[1]
  - Mild hippocampal atrophy (right) observed on MRI (image)

Lisa has some hippocampal atrophy (albeit mild). Hippocampal atrophy (or MTA) is the most established structural imaging biomarker of AD but it is also seen in LATE (with hippocampal sclerosis) and FTD[2,3]

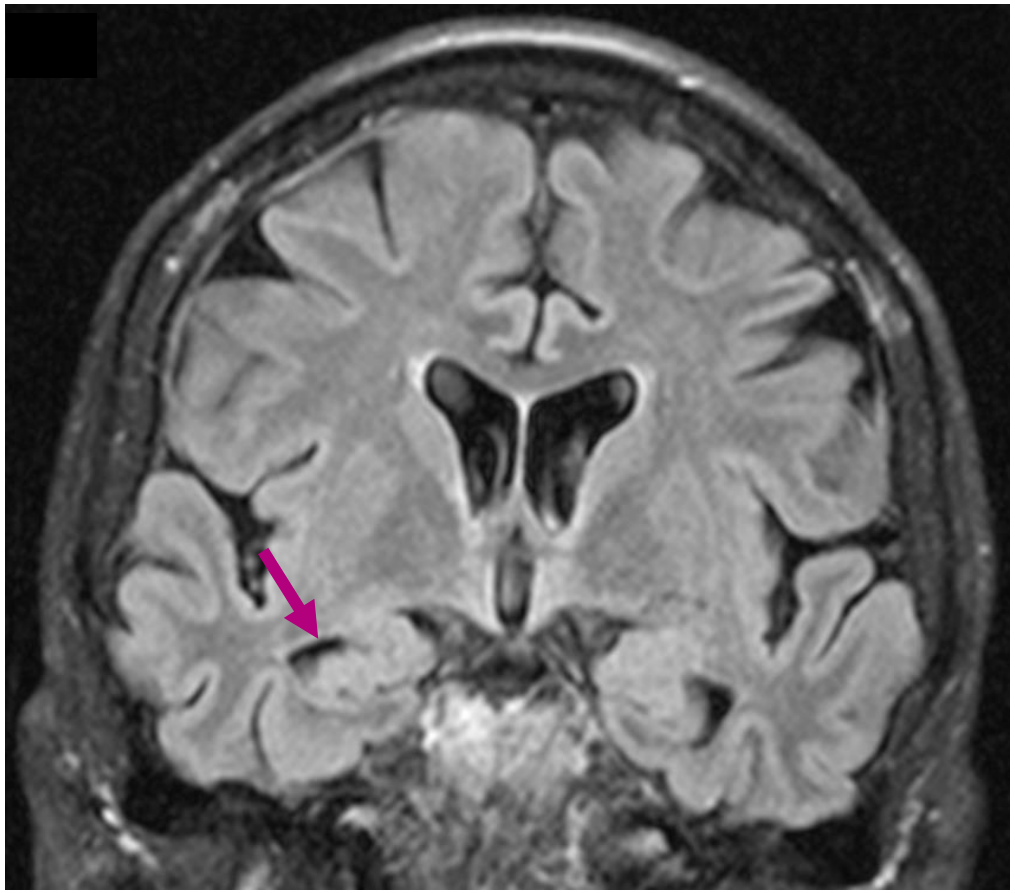


Image from Marinescu, I et al. Rom J Morphol Embryol. 2017;58(4):1165-1173.

AD, Alzheimer's disease; FTD, frontotemporal dementia; LATE, Limbic-predominant age-related TDP-43 encephalopathy; MRI, magnetic resonance imaging; MTA, medial temporal atrophy
MTA, medial temporal lobe atrophy; TDP-43, TAR DNA-binding protein 43
1. Zhou Y, et al. ACS Chem Neurosci 2021;12:4209 – 4223; 2. Raskin R, et al. Curr Alzheimer Res 2015;12:712–722;
3. Harper L, et al. J Neurol Neurosurg Psychiatry 2014;85:692–698

Where does Lisa potentially sit on the continuum?

	Preclinical AD[2]	MCI due to AD[2]	Mild AD dementia[2]	Moderate AD dementia[2]	Severe AD dementia[2]
Cognition	No or only subtle cognitive symptoms[3]	**Short-term memory loss; decline in overall attention skills, language skills; mild abnormalities in visuospatial and executive functions[4,5]**		Anomia, aphasia, severe memory loss, severe abnormalities in executive functions, visuospatial abilities, attention[4–6]	
Function	No impact on ADLs[2]	**No significant impairment in IADLs[2]**	Functional impact in IADLs, require occasional assistance with ADLs[5]	Extensive impact in BADLs, require frequent assistance with ADLs[5]	Severe functional impact on ADLs (complete dependency) and BADLs[5]
Behavior	No or subtle changes in behavior[7]	**Depression; anxiety**; irritability; apathy; disinhibition; agitation; aggression; psychosis; hallucinations; sleep disturbances[8,9]			

The clinical syndrome is used to stage the disease. Is there evidence of AD pathology?

AD, Alzheimer's disease; ADL, activities of daily living; BADL, basic activities of daily living; IADL, instrumental activities of daily living; MCI, mild cognitive impairment

1. Aisen PS, et al. Alzheimers Res Ther 2017;9:60; 2. Jack CR Jr, et al. Alzheimers Dement 2018;14:535–562; 3. Harada CN, et al. Clin Geriatr Med 2013;29:737–752; 4. Kazim SF, Iqbal K. Mol Neurodegener 2016;11:50
5. Mayo Clinic. Alzheimer's stages: How the disease progresses. https://www.mayoclinic.org/diseases-conditions/alzheimers-disease/in-depth/alzheimers-stages/art-20048448 (Accessed April 2023); 6. Kipps CM, Hodges JR. J Neurol Neurosurg Psychiatry 2005;76(Suppl. 1):i22–i30;
7. Ismail Z, et al. Alzheimers Dement 2016;12:195–202; 8. Eikelboom WS, et al. Neurology 2021;97:e1276–e1287; 9. Lanctôt KL, et al. Alzheimers Dement (N Y) 2017;3:440–449; 11.

2 Evaluate: syndromal diagnosis

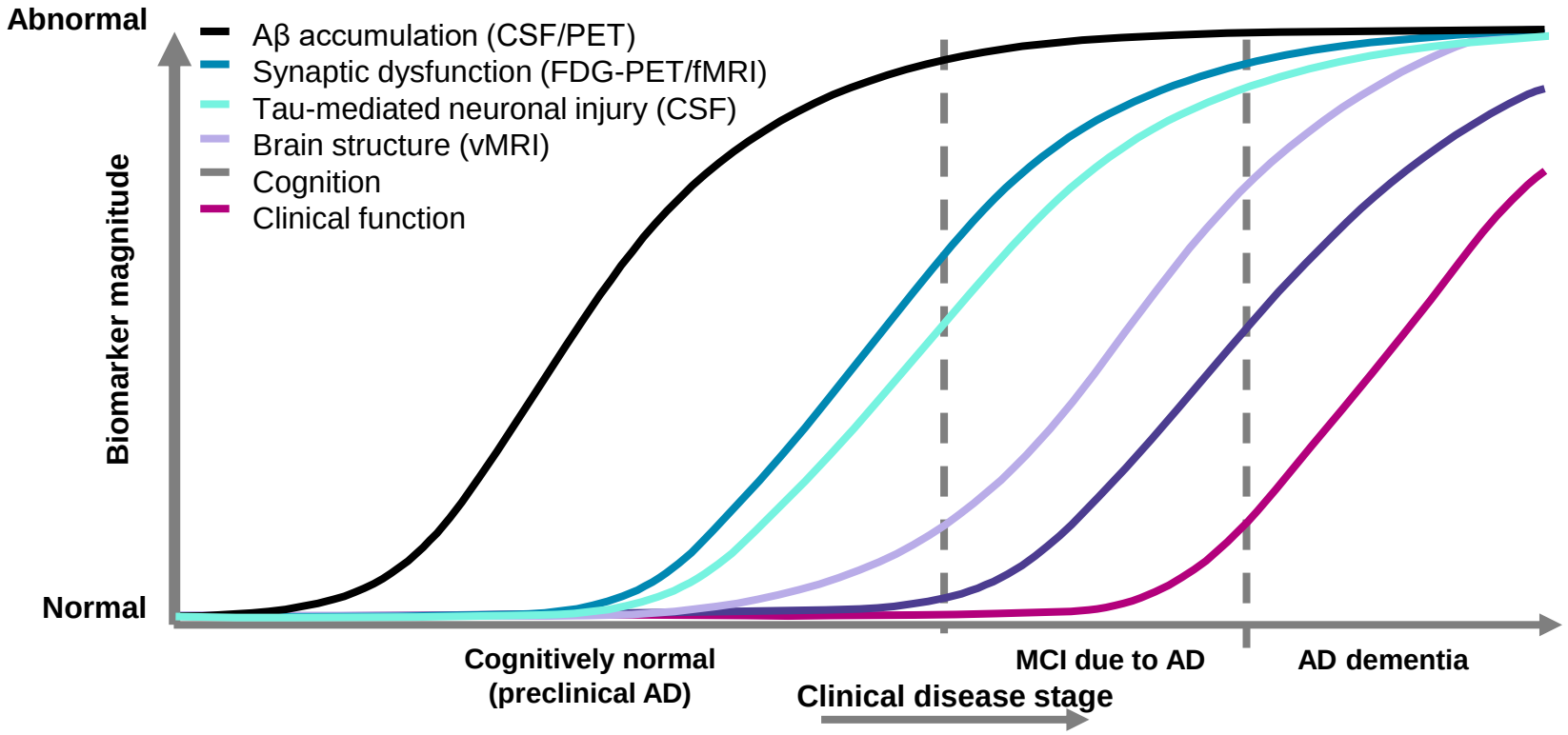
Syndromal diagnosis: **amnestic MCI due to probable AD** based on cognitive, behavioral, and functional assessments

Lisa's assessments have been consistent with probable AD etiology (amnestic syndrome and structural MRI changes in an area crucial for episodic memory).

Neurologist refers the patient for a lumbar puncture to assess AD biomarkers in the cerebrospinal fluid (CSF) to confirm a diagnosis

AD, Alzheimer's disease; CSF, cerebrospinal fluid; MCI, mild cognitive impairment; MRI, magnetic resonance imaging; RPR, rapid plasma reagin

Biomarker changes indicative of AD may be detected before clinical symptoms arise



AD pathophysiological changes can occur up to 20 years prior to symptom onset[2]

Aβ, amyloid beta; CDR, Clinical Dementia Rating; CSF, cerebrospinal fluid; FDG-PET, fluorodeoxyglucose positron emission tomography; MCI, mild cognitive impairment; fMRI, functional magnetic resonance imaging; PET, positron emission tomography; vMRI, volumetric magnetic resonance imaging

Figure adapted from Jack CR Jr, et al. Hypothetical model of dynamic biomarkers of the Alzheimer's pathological cascade. Lancet Neurol 2010;9:119–128 with permission from Elsevier, Jessen F, et al. Alzheimer's Dement 2014;10:844–852, and Sperling et al. Alzheimers Dement 2011;7:280–292

1. Sperling et al. Alzheimers Dement 2011;7:280–292; 2. Jack CR Jr, et al. Alzheimers Dement 2018;14:535–562

3 Confirm diagnosis: biomarkers (CSF)

- Biomarker profile of the patient (applying the research ATN criteria)[1]
  - Abnormal amyloid and p-tau levels (measured by CSF) [**A**,**T**]
  - Abnormal t-tau and structural atrophy according to MRI [**N**]
- **Diagnosis: MCI due to AD** owing to the combination of clinical presentation and biomarker results

Biomarker	**Patient result** (concentration – pg/mL)	**Cutoff** (concentration – pg/mL)	**Result compared with cutoff**
Aβ42	**650**	<1098	**Lower**
t-tau	**285**	>242	**Higher**
p-tau	**36**	>19.2	**Higher**

Cutoff concentrations are appropriate for Elecsys Aβ42, t-tau, and p-tau automated assays[2]

Lisa's Aβ42 levels are lower than the cut-off (sign of amyloid deposition), while p-tau and t-tau (presence of tangles and neurodegeneration, respectively) are higher, consistent with AD pathology

Aβ, amyloid beta; AD, Alzheimer's disease; CSF, cerebrospinal fluid; p-tau, phosphorylated-tau; t-tau, total-tau

1. Jack CR Jr, et al. Alzheimers Dement 2018;14:535–562; 2 Schindler SE, et al. Alzheimers Dement 2018;14:1460–1469

Putting ourselves in the shoes of a person in the early stages of Alzheimer's disease

3 Disclosing the diagnosis

- ❑ Discuss how the biomarker test results help confirm a diagnosis
- ❑ Provide information about MCI and AD and what to expect
- ❑ Ensure they understand the information and provide further guidance around local support, resources, and options (research, registry, treatment)
- ❑ Discuss the social and safety implications, such as managing finances, medications, and appointments
- ❑ Agree on a plan for follow-up or referral

AD, Alzheimer's disease; MCI, mild cognitive impairment

1. McDade EM, et al. Continuum (Mineap Minn) 2022;28:648–675; 2. Gauthier S et al. Progress in Neurobiol 2013;110:102–113; 3. Frank CC, et al. Can Fam Physician 2018;64:518;

4 Manage

- Following diagnosis, Lisa wanted to optimize the management of her comorbidities; her husband was eager for any additional interventions available to them
- Treatment options for MCI were discussed
- Lisa was encouraged to return for additional follow-up visits
- Her neurologist made her aware of clinical trials available where she may be eligible and local registries
- Provided details for a local social worker and directed toward further disease-specific information from the Alzheimer's Association related to her disease

Benefits

- Activation of family and/or support network/community[1]
- Better management of cognitive, functional, and psychological disabilities[1]
- Better management of comorbid conditions[1]
- Proactive patient safety measures (falls, driving, fire, medication errors)[1]
- Shared-decision making and future planning[1]
- Maximize independence and prolonged community living[1]

Barriers[2,3]

- Capacity constraints, healthcare disparities
- Stigma / awareness and cultural differences
- Disease awareness and understanding
- Fear of losing driving and other privileges
- Access to care and support services

EMR, electronic medical record; MCI, mild cognitive impairment

1. Liss JL, et al. J Intern Med. 2021;290(2):310–334; 2. Alzheimer's Association. Alzheimers Dement 2021;17:327–406;
3. Laura M & Rainville C. AARP Research 2021. https://doi.org/10.26419/res.00471.001.

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