

DIAGNOSIS AND MANAGEMENT OF  
**Mild Cognitive Impairment (MCI)  
 and Dementia**

minor update - 12 / 2020

The Intermountain Cognitive Care Development Team developed this care process model (CPM) to improve the diagnosis and treatment of patients with cognitive impairment across the staging continuum from mild impairment to advanced dementia. It is primarily intended as a tool to assist primary care teams in making the diagnosis of dementia and in providing optimal treatment and support to patients and their loved ones. This CPM is based on existing guidelines, where available, and expert opinion.

► **Why Focus ON DIAGNOSIS AND MANAGEMENT OF DEMENTIA?**

- **Prevalence, trend, and morbidity.** In 2016, one in nine people age 65 and older (11%) has Alzheimer’s, the most common dementia. By 2050, that number may nearly triple, and Utah is expected to experience one of the greatest increases of any state in the nation.<sup>HER,WEU</sup> One in three seniors dies with a diagnosis of some form of dementia.<sup>ALZ</sup>
- **Costs and burdens of care.** In 2016, total payments for healthcare, long-term care, and hospice were estimated to be \$236 billion for people with Alzheimer’s and other dementias. Just under half of those costs were borne by Medicare.<sup>HUR</sup> The emotional stress of dementia caregiving is rated as high or very high by nearly 60% of caregivers, about 40% of whom suffer from depression.<sup>PIN,ALZ</sup>
- **Physician support needs.** Dementia goes undetected in 50% of patients at Intermountain who likely suffer from its effects. Based on an Intermountain internal needs assessment, a majority of internal medicine physicians identified support for cognitively impaired patients as a top practice need, and 88% of primary care physicians felt that a care process model addressing cognitive impairment would be helpful.<sup>SKI</sup>
- **Importance of identification and treatment.** While there is no cure for dementia, treatment (both pharmacologic and non-pharmacologic) has been shown to improve quality of care, quality of life for patients, caregiver assistance, and caregiver mental health as well as to delay nursing home placement and decrease costs to healthcare systems.<sup>DOO1, VIC, GAL1, MIT1, BAS, SPI, CAL, FRE, MCL</sup> In addition, dementia patients have voiced a need for **more timely diagnosis, better education about dementia management, and better support and follow-up** for patients and caregivers from healthcare providers (Alzheimer’s Association focus group).

► **WHAT’S INSIDE?**

**ALGORITHMS**

Algorithm 1: Diagnosing Dementia and MCI ..... 6  
 Algorithm 2: Dementia Treatment..... 11  
 Algorithm 3: Driving Assessment ..... 13  
 Algorithm 4: Managing Behavioral and Psychological Symptoms ..... 14

**MCI AND DEMENTIA SCREENING AND DIAGNOSIS ..... 2**

**MCI TREATMENT AND CARE MANAGEMENT..... 8**

**DEMENTIA TREATMENT AND CARE MANAGEMENT ..... 9**

Medication Tables ..... 15


**RESOURCES ..... 19**

Patient/Caregiver Education ..... 19  
 Screening/Staging/Driving Assessment Forms..... 21

**REFERENCES ..... 30**

► **MEASUREMENT & GOALS**

- **Complete a Mini-Cog™ cognitive screening for a minimum of 75% of Annual Wellness Visit (AWV) patients**
- **Administer a MoCA or SLUMS follow-up cognitive screening for at least 50% of patients whose Mini-Cog™ score showed potential cognitive decline**
- **Increase the rate of diagnosis of dementia by 5% system wide**

 Indicates an Intermountain measure

**INTERMOUNTAIN BEST PRACTICE RECOMMENDATION**

All Medicare annual wellness visits (AWVs) should include a brief, two- to three-minute cognitive screening with the **Mini-Cog™** cognitive screening tool. Training links ([page 3](#)) and forms ([pages 21–22](#)) are included in this CPM. Intermountain will begin measuring rates of AWV Mini-Cog™ screening in 2017.



## ► MILD COGNITIVE IMPAIRMENT AND DEMENTIA SCREENING AND DIAGNOSIS

### ✓ KEY RECOMMENDATIONS

- Screen patients to determine if they meet criteria for mild cognitive impairment or dementia using validated screening tools (Mini-Cog™ and MoCA).
- Complete Mini-Cog™ and MoCA training prior to first use, and be sure to administer the screenings the same way every time.
- Conduct a Mini-Cog™ screening at each Medicare annual wellness visit (AWV).
- Understand the overlap between depression and dementia.
- Interview a knowledgeable informant about the patient's functional status **BEFORE** making a diagnosis.

### DEPRESSION AND DEMENTIA OVERLAP<sup>KAL1, DAL</sup>

Depression and dementia are the two, most-diagnosed neuropsychiatric disorders in adults over age 65. Highly comorbid, either disorder may appear first. Depression symptoms in older adults (present in up to one-half of Alzheimer's disease cases) are often overlooked and untreated because they coincide with other problems encountered by older adults (e.g., low energy, somatic symptoms, and cognitive complaints).

A history of depression is associated with increased risk of dementia. It can be difficult to determine whether cognitive impairment is due to depression or if dementia and depression are both present. In cognitive impairment that is due to depression, it is more common for depressed individuals to display lower motivation, be more concerned about their functioning, and to have greater self-complaints of difficulty with concentration and attention than those with dementia. When symptoms of depression are present in a patient with cognitive impairment, the recommended approach is to treat for depression and reevaluate cognition. Consultation with neuropsychology can be particularly helpful.

Mild cognitive impairment (MCI) and dementia are both clinical syndromes with multiple causes that affect memory and other cognitive functions. Both are diagnosed clinically, using cognitive screening tools to detect and measure possible impairment (see *Cognitive screening tools: The Mini-Cog™, MoCA, and SLUMS* on [page 3](#)) and a history and physical exam to rule out treatable factors that can influence cognition such as depression, infection, nutrition deficiency, and medication side effects (see algorithm 1 on [page 6](#)).

The importance of diagnosis for these syndromes may be overlooked in some healthcare settings because approved medications have shown little benefit for disease modification. However, nonpharmacological interventions and careful care management are effective in preserving patients' quality of life and independence and in reducing caregiver burnout.

Patients with MCI may experience some difficulty with daily tasks but still manage to function without assistance, whereas patients with dementia require ever more help from caregivers as they progress through stages of impairment from mild to severe. Patients with MCI have a greater-than-normal risk of developing dementia in the future, but not all MCI cases progress to greater impairment; some even improve. **The algorithm on [page 6](#) details best practices for diagnosing dementia and MCI.**

### Mild cognitive impairment (MCI)

MCI is a condition marked by mild changes in memory, language, or another mental function. However, patients with MCI can perform all activities of daily living without any caregiving assistance. Cognitive changes are significant enough to be noticed by others and measured by cognitive screening assessments. Typical cognitive problems in MCI may include:<sup>LAN1</sup>

- Greater dependency on reminders and notes
- Greater difficulties with multitasking
- More distractibility
- Less flexibility
- New difficulties with problem-solving and word finding.

MCI is typically a diagnosis of exclusion. If a patient shows measurable but mild impairment on screening tests with no potential causative factors (medication side effects, infection, nutritional deficiencies, depression) and no functional impairment, the patient is diagnosed with MCI rather than mild dementia (see the diagnosis algorithm on [page 6](#)).

### Dementia

Dementia is defined as a decline in cognitive function from baseline that is not due to another medical or psychiatric cause and that causes impairment in ability to live and function independently.<sup>CHU</sup> Mild dementia is distinguished from MCI by an impairment in the patient's ability to perform daily activities. Input from a caregiver or another knowledgeable informant who can give an accurate report of the patient's functional status **is an absolute requirement for a dementia diagnosis**. The diagnosis is primarily clinical and relies heavily on the history and physical examination (including reports from a knowledgeable informant).<sup>RAB1</sup> While labs, imaging, and cognitive testing are helpful in making the diagnosis, they are not diagnostic in and of themselves. If a patient shows cognitive impairment but no functional impairment, the diagnosis is MCI rather than dementia. Once a diagnosis of dementia has been made, the cause and stage of the impairment should be determined ([pages 4–5](#)).

## Cognitive screening tools: the Mini-Cog™, MoCA, and SLUMS

In diagnosing dementia, it is important to use validated screening tools for assessing the cognitive function for each patient early in the diagnostic process (see Algorithm 1 on [page 6](#)). Intermountain recommends three cognitive screening tools: the Mini-Cog™, the Montreal Cognitive Assessment (MoCA), and the St. Louis University Mental Status exam (SLUMS).<sup>BOR1,TSO</sup>

### The Mini-Cog™ — for annual wellness visit (AWV) screening

The Mini-Cog™ is a preliminary, **two- to three-minute screening tool** used to detect possible moderate- to severe-stage dementia among well-appearing patients.<sup>BOR1,TSO</sup> Scores of 2 or less indicate possible impairment, signalling the need for further screening with the MoCA or SLUMS (this scoring threshold may not identify cases of MCI). A fast, rough tool, the Mini-Cog™ satisfies the minimum requirements for screening cognition at the Medicare AWV and should be administered at every AWV/well checkup for geriatric patients.<sup>COR</sup>

Access instructions and scoring criteria for the Mini-Cog™ can be found on [page 21](#) or by clicking on the link in the sidebar at right. (The sidebar provides directions for accessing Intermountain's computer-based Mini-Cog™ training.

**For purposes of this CPM, a score of  $\leq 2$  is abnormal and requires further evaluation.**

### The MoCA — for patients showing possible impairment

The MoCA is a **10-minute screening tool** that helps primary care and intensive medicine providers detect and distinguish among levels of cognitive impairment.<sup>NAS</sup> The MoCA assesses different cognitive domains and has good psychometric properties (e.g., test-retest reliability, internal consistency). The MoCA should be administered to all patients who score 2 or less on the Mini-Cog™ or who show impairment (or express concerns about impairment). If it has been 6 months or less since the most recent MoCA administration, then an alternate version of the MoCA should be used. While the MoCA cannot be used on its own to diagnose MCI or dementia, it has demonstrated specificity in distinguishing among those with MCI, typical cognitive aging (87% specificity), and mild-stage probable Alzheimer's dementia (87% specificity).<sup>NAS,TSO</sup> The MoCA requires all caregivers to participate in a training and certification program (\$125) before administration of the exam. See the sidebar at right for instructions.

**For purposes of this CPM, MoCA scores of  $\leq 25$  are considered abnormal**

### SLUMS — for patients showing possible impairment

The SLUMS exam is a tool that assesses mild cognitive impairment and dementia in patients. The exam covers areas of memory, attention, and executive function. It consists of 11 questions including digit span testing, naming animals, clock drawing, figure recognition and size differentiation. The test takes 4–10 minutes to administer. The education level of the patient is considered when scoring. Caregivers need to complete training and orientation before administering the assessment. See sidebar at right for the Intermountain more information.

**For purposes of this CPM, a score of  $\leq 27$  is abnormal and requires further evaluation.**

## MINI-COG™ TRAINING

Access the computer-based training via the [My Learning Catalog](#). The training takes about 12 minutes, not including videos of screening delivery.

1. Log into TalentLink.
2. Click **Add** at the bottom of the "My Learning and Development Activities" window.
3. Choose **Learning and Development Activities from a Catalog**.
4. Type in "**MiniCog**." As you type, the course name will appear.
5. Click on the course name.
6. Click on the course's lightning symbol under "Actions."
7. Select **Register and Launch**. (Or, just select **Register** to add the course now but complete it later.)

## REQUIRED MOCA TRAINING

As of **December 1, 2020**, those administering the MoCA are required to complete the online MoCA training and certification program (\$125).

See [www.mocatest.org](http://www.mocatest.org) for registration, as well as training and certification program.

## SLUMS TRAINING AND ORIENTATION

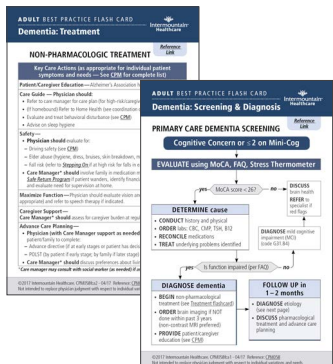
1. Caregiver watches SLUMS training: <https://www.youtube.com/watch?v=z4ctoWU-qzw&feature=youtu.be>
2. An experienced caregiver assesses your competency.
3. Only trained caregivers will be able to use the online SLUMS assessment form.
4. Yearly retraining is recommended.

See example of a SLUMS form at this link: [https://www.sralab.org/sites/default/files/2017-07/slumsexam\\_05\\_0.pdf](https://www.sralab.org/sites/default/files/2017-07/slumsexam_05_0.pdf)

## BEST PRACTICE FLASH CARDS

Flashcards are available for providers to use as quick reminders of key processes outlined in this care process model. There are two flashcards entitled:

1. Dementia: Screening & Diagnosis
2. Dementia: Treatment



Order flashcards from Intermountain's PrintIt! online store as 4 x 6 preprinted cards, OR view within the Physician App for mobile devices.

To get the Physician App, which includes the Flash Card App:

1. Go to the App store on your phone or tablet (e.g., iTunes on your Apple Device).
2. Search for "Intermountain Healthcare."
3. Scroll down to "Intermountain Physician," and "Get" the app.

Once the app downloads, tap the "Best Practice Flashcards" icon in the upper left, and then select "Adult" to find these two flashcards.

## Etiology

After a diagnosis of the dementia syndrome is made, it is important to determine the etiology because this has implications for treatment. The most common etiology is Alzheimer's disease, followed by vascular and mixed dementias.<sup>5CH</sup> These types of dementia may be managed very effectively in a primary care setting. Dementia due to Parkinson's disease, dementia with Lewy bodies, frontotemporal dementia, and normal pressure hydrocephalus are less common, and neurology consultation is often helpful in diagnosis and management. Criteria for the most common types of dementia are listed below in table 1.

TABLE 1. Criteria for the most common dementia etiologies		
Etiology	ICD 10 Codes	Etiology Criteria
Alzheimer's disease MCK1, HOR, DUB1	G30.9 (unspecified) AND F02.80 or F02.81	<ul style="list-style-type: none"> <li>• Gradual onset of symptoms over months to years</li> <li>• Most prominent feature is memory</li> <li>• Impaired learning and recall of recently learned information</li> </ul>
Vascular dementia MOR, GAR, SAC, GOR1	F01.50 or F01.51	<ul style="list-style-type: none"> <li>• Stepwise decline</li> <li>• History of clinically apparent stroke that is temporally related to cognitive decline</li> </ul>
Mixed dementia <sup>LAN2</sup>	Code predominant etiology first	Criteria for multiple dementia syndrome etiologies are met; mixed vascular and Alzheimer's disease most common
Dementia with Lewy bodies MCK2, BAR, GES	G31.83 AND F02.80 or F02.81	<p><b>2 of 3 required</b></p> <ul style="list-style-type: none"> <li>• Fluctuating cognition</li> <li>• Recurrent visual hallucinations</li> <li>• Parkinsonism (bradykinesia, muscular rigidity, tremor, postural instability)</li> </ul>
Frontotemporal dementia GOR2, RAS	G31.09 AND F02.80 or F02.81,  Consider Z55-65 or 91	<p><b>3 of 6 required</b></p> <ul style="list-style-type: none"> <li>• Disinhibition</li> <li>• Apathy</li> <li>• Loss of empathy</li> <li>• Compulsive behaviors</li> <li>• Hyperorality</li> <li>• Impaired executive function / decision making</li> </ul>

## Cognitive impairment staging

Once a diagnosis has been made, it's important to determine the patient's functional status and corresponding stage of impairment. The impairment stage will determine the appropriate interventions to help preserve the patient's quality of life for as long as possible and mitigate excessive burdens on caregivers.

Cognitive impairment staging is done based on the results of two assessments — the Functional Activities Questionnaire (FAQ) (page 25) and the Stress Thermometer on (page 26) — as completed by a knowledgeable informant (family member, caregiver, or someone else who knows and sees the patient regularly). It is important that an informant complete these forms because patients with dementia usually cannot provide an accurate report of their functional status. Staging guidance is found in table 2 below.

The earliest stage of cognitive impairment is MCI in which patients show no functional impairment (see page 2). MCI may be a clinical precursor to dementia, but it may never progress and may even improve. In mild dementia, patients require help with (but can participate in) higher-order daily tasks, known as the instrumental activities of daily living (IADLs). IADLs include such activities as paying bills, taking medications, scheduling appointments, and shopping alone. In moderate dementia, patients are dependent on caregivers to perform IADLs and require assistance with (but can participate in) more rudimentary tasks, known as the basic activities of daily living (ADLs). ADLs include such activities as bathing, dressing, and toileting. In severe dementia, patients are totally dependent on others for all IADLs and ADLs.

TABLE 2. Stages of cognitive impairment based on functional status				
IADL or ADL*	Mild Cognitive Impairment	Dementia		
		Mild	Moderate	Severe
Able to pay bills, balance checkbook independently	Yes with some difficulty	Requires assistance	Dependent	Not able to participate
Able to shop for groceries or clothes alone				
Able to bathe, dress self	Yes	Yes	Dependent	Not able to participate

\*Instrumental activity of daily living (IADL) or activity of daily living (ADL), taken from Intermountain's Health Risk Assessment for the Medicare annual wellness visit.

## DIAGNOSTIC BEST-PRACTICE FORMS

The forms that support Intermountain's best-practice process for dementia diagnosis include (see also algorithm 1 on page 6) :

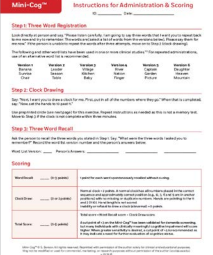
- For cognitive screening, use: Mini-Cog™ and MoCA
- For caregiver or informant reports, use:
  - Functional Assessment Questionnaire (FAQ)
  - Behav5
  - Stress Thermometer

In the sidebar at right, you will find images and links for these forms (many of which are included at the end of this CPM).

## DIAGNOSIS AND STAGING FORMS

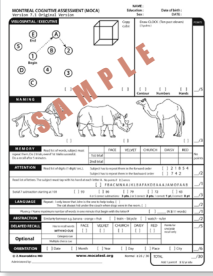
Click the thumbnail or go to the page listed to find a copy of the full-size form.

Use with Patient




Mini-Cog™ Form: [Page 21](#)

Use with Patient



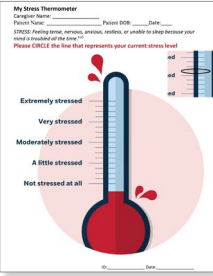
MoCA Form: [Page 24](#)

Use with Caregiver



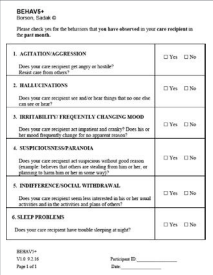
FAQ Form: [Page 25](#)

Use with Caregiver



Stress Thermometer: [Page 26](#)

Use with Caregiver

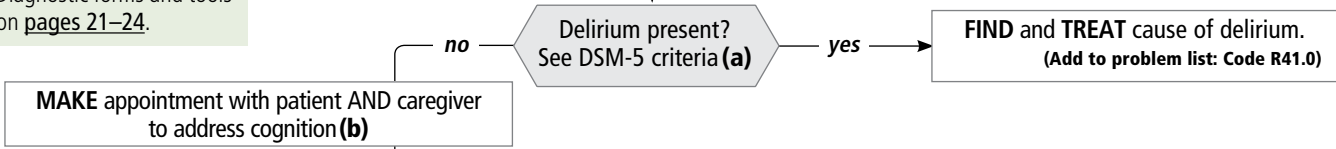


BEHAV5 Form: [Page 27](#)

# ALGORITHM 1: Diagnosing Dementia and Mild Cognitive Impairment (MCI)

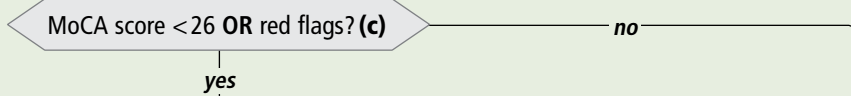
**COGNITIVE CONCERN OR SCORE  $\leq 2$  ON MINI-COG™\* AT ANNUAL WELLNESS VISIT (AWV)**  
*(If cognitive concern, add to problem list: Code R41.9)*

\*NOTE: Diagnostic forms and tools appear on pages 21–24.



**PRE-APPOINTMENT**—Performed by medical assistant (MA) or care manager (CM)

- ADMINISTER MoCA\* to patient. HAVE Informant do surveys outside room: Functional Assessment Questionnaire (FAQ)\* and Stress Thermometer\*
- SCORE MoCA, FAQ, and Stress Thermometer, and GIVE to PCP for appointment



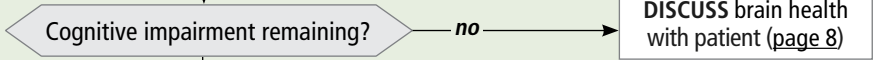
**RULE OUT non-dementia causes of impairment**  
 CONDUCT history and physical (e), REVIEW / ORDER labs (f), AND RECONCILE medication list (g) with PharmD consult (if available)

**ADDRESS any findings**

If depression**	If uncontrolled illness/deficiency	If medication side effects or reactions
-----------------	------------------------------------	---

\*\* CONSIDER MHI referral (d) if: Depression  $\geq$  moderate

TREAT, RE-EVALUATE by phone in 1–2 weeks; then, FOLLOW UP monthly X 3 months



DETERMINE functional status (based on FAQ result):		
Functional status unclear	Function impaired	Function not impaired (Add to problem list: Code G31.84)
CONSIDER referral to neuropsychology (j) OR RE-EVALUATE in 3–6 months	ORDER brain imaging (h)	DIAGNOSE mild cognitive impairment (MCI), educate on brain health (see page 8), and re-evaluate annually

PCP Visit 1–3

**DIAGNOSE dementia (k)**  
 Without behavioral disturbance (Add to problem list: Code F03.90)  
 OR  
 With behavioral disturbance (Add to problem list: Code F03.91)

PCP Visit 2–4

ASSESS stage using table 2 (page 5)  
 TREAT/MANAGE care per guidance (pages 9–18)

ALGORITHM NOTES

**(a) Delirium**

- Criteria (adapted from information in DSM-5)<sup>APA1</sup>**
- Changes in awareness and attention control. Onset is usually fast (hours to days) and may change over each day.
  - Additional cognitive changes are present and not caused by another neurocognitive problem or coma.
  - Workup: CBC, CMP, UTI + culture, reconcile med list, evaluate for alcohol/drug use.
  - Watch for somnolence, agitation, inability to follow conversation.

**(b) Before cognition appointment**

- Identify caregiver. Document caregiver and contact information. Make sure signed release of information is on file.
- Contact caregiver. Stress importance of caregiver presence at cognition appt. Ask caregiver to bring all pill bottles, including OTCs and supplements. Discuss what visit will entail:
  - Patient should arrive 30 minutes before scheduled appt.
  - MA administers MoCA while caregiver completes FAQ and Stress Thermometer in separate room.
  - Results are given to the PCP before appt.

**(c) Red flags**

- Age < 65
- Family reports rapid progression or significant decline from baseline
- Upper motor neuron signs (upgoing toes, hyperreflexia, myoclonus)
- Parkinsonism
- Focal neurologic deficit
- Significant gait abnormality
- Seizures
- Language dysfunction

**(d) Indications for MHI referral**

- Behavioral disturbance
- Coexisting substance dependence (benzodiazepines, alcohol, narcotics)
- Late onset psychosis
- Preexisting psychiatric diagnosis that has been exacerbated by cognitive impairment
- Moderate to severe depression
- Depression refractory to treatment

**(e) History and physical**

- |   |   |
|---|---|
| <p>Do:</p> <ul style="list-style-type: none"> <li>• Obtain history from patient</li> <li>• Also obtain history from family member or informant</li> <li>• Review for history of falls</li> <li>• Screen for obstructive sleep apnea (OSA) if indicated</li> <li>• Screen for depression with PHQ-2</li> </ul> | <p>Look for:</p> <ul style="list-style-type: none"> <li>• Personality changes</li> <li>• Weight changes</li> <li>• Peripheral neuropathy</li> <li>• Hearing/vision changes</li> <li>• Dysphagia/dysarthria</li> <li>• Parkinsonism</li> </ul> |
|---|---|

**(f) Labs (if not done in last 12 months)**

- B12, TSH, CBC, CMP
- If indicated: HIV, RPR, ESR, CRP

**(g) Reconcile med list**

- **Ask patient/caregiver to bring all medications including OTC and herbal supplements in their original bottles**
- Identify whether anyone is helping patient manage medications
- Ask whether a pill box is being used (PRNs should not go in pill box)
- Assess medication adherence
- Evaluate medications
  - Drug-drug interactions?
  - Appropriate dose for age and renal function?
  - Medications with adverse cognitive effects? (See table 6 on [page 17](#).)

**(h) Brain imaging<sup>WIP, FII, MUR</sup>**

- Structural brain imaging recommended for the evaluation of dementia
- Non-contrast MRI preferred. Indicate "IHC Dementia Protocol"
- If MRI contraindicated, order non-contrast CT
- Do not reimaging for typical cases if MRI has been done within previous 3 years

**(i) Neurology consult (include MRI)**

- Indications for referral (AFTER delirium rule out/treated)**
- Atypical presentation or rapid progression
  - Neurologic deficits or findings
  - Patient or family request for neurology consult or specialized testing or imaging
  - Behavioral manifestations that are suspicious for frontotemporal dementia
  - Dementia in setting of another neurologic disorder such as Parkinson's disease
  - Parkinsonism (tremor, slow movement, impaired speech, stiffness, orthostatic hypotension)
  - Indicate reason (dementia), any red flags, whether urgent consult is needed
  - Findings on brain image(s)

**(j) Referral to Neuropsychology**

- Assist with differential diagnosis
- Identify cognitive/emotional strengths and limitations
- Address patient/family adjustment/intervention/education for patients with MCI and dementia
- Assess capacity, safety (including driving), supervision, assisted-living needs
- Manage psychiatric and behavioral symptoms related to cognitive impairment
- Differentiate between dementia and pseudodementia
- **If pseudodementia:** Evaluate to what extent psychiatric symptoms are contributing to cognitive deficit

**(k) Dementia (major neurocognitive disorder)**

- Criteria (based on information from DSM-5)<sup>APA1</sup>**
- Cognitive loss as verified by objective testing (MoCA  $\leq$  25) is not caused by delirium or another mental disorder.
  - The cognitive reduction inhibits performance of daily life activities (such as paying bills or managing medications).

- Specify:*
- Without behavioral disturbance
  - With behavioral disturbance (specify disturbance): For example, psychotic symptoms, mood disturbance, agitation, apathy, or other behavioral symptoms

- Specify current stage:*
- Mild: Difficulties with IADLs (e.g., housework, managing money), FAQ  $\geq$  9
  - Moderate: Difficulties with basic ADLs (e.g., feeding, dressing)
  - Severe: Fully dependent

## ► MILD COGNITIVE IMPAIRMENT (MCI) TREATMENT AND CARE MANAGEMENT

### ✓ KEY RECOMMENDATIONS

- Evaluate and treat any cerebrovascular risk factors:
  - Hypertension (refer to [Management of High Blood Pressure CPM](#))
  - Obesity
  - Hyperlipidemia (refer to [Assessing and Managing Cardiovascular Risk and Cholesterol CPM](#))
- Counsel on brain health and lifestyle modifications such as following [The Mediterranean Diet](#) fact sheet, exercising, and maintaining social interaction.

### “BRAIN GAMES”

There is minimal evidence to suggest that commercially marketed brain games prevent or delay progression of dementia. However, cognitive activity based on the patient's interests and abilities should be encouraged.<sup>BUT</sup>

### WEIGH BENEFITS VS. STRESS OF LIFESTYLE CHANGES

The stress of lifestyle change (starting an exercise program or new diet) may outweigh any benefit to a patient with cognitive impairment. The greater the level of impairment, the greater the stress of life changes.

MCI may be classified as amnesic (primarily affects memory) or nonamnesic (primarily affects decision-making, judgment, or visual perception). Patients at this stage of cognitive impairment typically do not require daily caregiving and can still perform the same daily activities; although, they may require more time to complete tasks. Recommended treatment includes:

- Evaluating and treating any cerebrovascular risk factors (cholesterol, obesity, etc.)<sup>YAS</sup>
- Discussing with patient brain health and lifestyle modifications<sup>GIL</sup>
- Recommending coping strategies (see <http://www.alz.org/i-have-alz/tips-for-daily-life.asp#5>)
- Possible off-label use of a cholinesterase inhibitor based on provider-patient discussion (see medication tables on [pages 15–16](#)).<sup>PET, CRA</sup>

### Brain health and lifestyle modifications

Lifestyle modifications that may enhance brain health involve diet, social interaction, and exercise.

Most major scientific organizations encourage some form of the Mediterranean diet for prevention of major chronic diseases including Alzheimer's disease and other dementias.<sup>SOF, MITZ, HHS, GUY, VAL, LOU</sup>

A Mediterranean diet is rich in fruits, vegetables, nuts, whole grains, legumes, olive oil, and lean protein with limited sugar, red meat, and unhealthy fat. This type of diet has been associated with slower cognitive decline in adults. However, it is still unknown whether the Mediterranean diet can prevent progression of mild cognitive impairment and dementia.

Regular social interaction and exercise have been shown to reduce the risk of cognitive decline in healthy seniors and may improve or delay the progression of existing impairment. For example, research indicates that people with regular social ties are significantly less likely to demonstrate cognitive decline compared to those who are lonely or isolated.<sup>BEN, POL1</sup>

A meta-analysis of randomized controlled trials shows evidence of improved cognition in cognitively impaired adults who exercise.<sup>HEY</sup> Cross-sectional studies demonstrate significantly larger hippocampal and gray matter volume among physically fit seniors who maintain a program of 30 minutes of aerobic activity three times a week compared to those who were more sedentary. In addition to providing a neuroprotective effect, aerobic/cardiovascular exercise may also attenuate cognitive decline by mitigating cerebrovascular risks.<sup>AHL</sup>

Overall studies suggest that people with high levels of aerobic physical activity are less likely to develop dementia.<sup>LAR, AHL, HEY</sup> It is unclear if beginning exercise in later life can prevent dementia. A trial of exercise in normal seniors did not find any improvement in cognitive function.<sup>SIN1</sup>



Access Intermountain's fact sheet: [The Mediterranean Diet](#).



## ► DEMENTIA TREATMENT AND CARE MANAGEMENT

Currently, non-pharmacologic interventions are shown to have a greater effect than medications on the quality of life of dementia patients and their caregivers. For this reason, first-line treatment should focus on comprehensive care planning and management.<sup>AGS1, APA2</sup> Medications can be helpful and should be offered to all patients; however, effect sizes are small and differ among patients.<sup>RAB1</sup>

### Comprehensive care planning

Essential components of care planning for dementia patients (see table 3 below) include providing education, caregiver support, and non-pharmacologic interventions. As dementia progresses, caregiver stress increases and can impact caregiver health. Early care planning to identify and mobilize resources has been shown to preserve caregiver health, which, in turn, helps caregivers maintain a predictable home environment where the patient will function the best for the longest period of time.<sup>MIT1, VIC</sup> The care plan is thus a critical part of dementia treatment and primary care providers should discuss how best to work with care managers to provide care planning in a way that makes the best use of individual practice resources.

**✓ KEY RECOMMENDATIONS**

- Focus on nonpharmacological interventions, including education and caregiver support, as first-line treatment.
- Evaluate driving initially and at least annually thereafter.
- Evaluate all possible contributors to behavioral/psychological problems. Modify the environment, and teach caregivers effective communication strategies.
- Avoid medications inappropriate for elderly patients.

**TABLE 3. Guideline for nonpharmacological treatment of dementia**<sup>GAL1, ODE, FEI</sup>

Care Plan Area	Care Action (as appropriate for individual patient symptoms and needs)	Physician	Care Manager*
Patient/ Caregiver Education	• Provide referral to community resources (area agency on aging, see <a href="#">pages 19–20</a> for others)		✓
	• Provide Alzheimer’s Association hotline 1-800-272-3900		✓
	• Provide printed materials (search <a href="#">iPrint store</a> ), and see patient education resources ( <a href="#">pages 19–20</a> )		✓
Care Guide	• <b>Assess patient and caregiver goals annually</b>		✓
	• Refer to care manager for care plan	✓	
	• Provide nutrition (diet) counseling, or refer to a registered dietician nutritionist (RDN)	✓	
	• Exercise: Silver Sneakers®, LiveFit, MoveFit (for earlier stages)	✓	
	• Prescribe medications if indicated ( <a href="#">pages 10–11, 14–18</a> )	✓	
	• (If homebound) Refer to Home Health (see coordination checklist in sidebar on <a href="#">page 10</a> )	✓	
Safety	• (If not homebound) Refer to outpatient OT (functional assessment, home safety evaluation)	✓	
	• Evaluate driving ( <a href="#">pages 12–13</a> )	✓	
	• Involve family in medication management		✓
	• Enroll in <a href="#">Safe Return Program</a> if patient wanders		✓
	• Identify financial helper/oversight		✓
	• Evaluate need for supervision at home		✓
	• Evaluate for elder abuse (hygiene, dress, bruises, skin breakdown, malnutrition)	✓	
• Refer to <a href="#">Stepping On</a> if at high risk for falls (early stage)	✓		
Maximize Function	• Evaluate vision and hearing (refer if appropriate)	✓	
	• Refer to speech therapy if indicated	✓	
Caregiver Support	• Assess for caregiver burden at regular intervals (see <a href="#">Stress Thermometer</a> on <a href="#">page 27</a> )		✓
	• Refer to resources for caregiver support		✓
Advance Care Planning	• Recommend completing advance directive (early stages or patient has decision-making capacity) and POLST (patient if early stage; family if later stage)	✓	
	• Discuss preferences about living situation		✓
	• Evaluate for hospice (late stage)	✓	
At Home	• Assess/advise on social engagement and intellectual stimulation		✓
	• Advise on establishing a routine		✓
	• Advise on physical activity	✓	
	• Advise on sleep hygiene	✓	

\*May consult with social worker (as needed) if available/appropriate

## HOME HEALTH COORDINATION CHECKLIST

- Speech therapy for MoCA/cognitive assessment and training
- Physical therapy for gait and balance training
- Occupational therapy for functional assessment/home safety evaluation
- Social work for caregiver support and completion of POLST form
- Nursing for medication review

## Pharmacological interventions (see algorithm on page 11)

**Pharmacological interventions** have been shown to have a modest effect in some patients.

Currently, there is no cure for dementia, and pharmacologic interventions are used to delay disease progression and treat cognitive symptoms. The decision to begin therapy should be based on evaluation of the patient and the risks and benefits associated with medication use. **Table 5 (on page 16)** reflects the strength of the evidence derived from literature review, package inserts, and clinical experience.

Medications approved for the treatment of dementia include:

- Cholinesterase inhibitors — **donepezil, rivastigmine, and galantamine**
- NMDA antagonist — **memantine**

While the effects of the medications are modest, they have been shown to improve or maintain scores on cognitive tests as well as delay nursing home placement in some patients. They may help with agitation and other behavioral disturbances as well. The risks and benefits associated with these medications as well as patient preferences should be taken into account when prescribing, and patients should be monitored for medication effects.<sup>SCH, SPI</sup>

### Cholinesterase inhibitors

Studies have shown that these medications modestly delay the worsening of symptoms for 6–12 months in about half of the patients who use them. More specifically, on a 70-point scale measuring cognitive function, the mean difference of change from baseline between the cholinesterase inhibitor and placebo groups is less than 4 points.<sup>HAN, BIR1, KAD</sup> Evidence for benefits on behavioral, quality-of-life, and time-to-institutionalization outcomes is also limited and shows inconsistent results.<sup>GEL, COU, ROD</sup>

If a provider opts to use a cholinesterase inhibitor, they should choose from those detailed in table 4 (**page 15**) based on tolerability, adverse effects, ease of use, and cost.

After a patient has received the maximum tolerated medication dose for eight weeks, evaluate a patient's symptoms, and stop treatment if there has been no improvement in symptoms. Only continue medication if an improvement has been noted.

### NMDA antagonist

Memantine is the only currently available NMDA antagonist.

Similar to the cholinesterase inhibitors, the efficacy of memantine is modest on cognition and activities of daily living. However, it has demonstrated a benefit on behavioral outcomes including aggression, delusions, and irritability.<sup>RAI, WIN1, MCS</sup>

While it appears to have fewer side effects in comparison to the cholinesterase inhibitors, memantine should be reserved for patients with moderate-to-severe Alzheimer's dementia or vascular dementia as there is little evidence of benefit for patients with milder forms of Alzheimer's dementia or other dementias.

There is also some evidence to suggest that memantine may be disease modifying; therefore, it may be continued even if no clinical improvement is seen after taking the medication for a period of time.<sup>D001</sup>

### Combination medication

Memantine may also be used in combination with a cholinesterase inhibitor in patients with advanced disease. A recent meta-analysis showed a small benefit in cognition, behavioral disturbances, and activities of daily living when combination therapy was used in moderate-to-severe Alzheimer’s dementia patients.<sup>MAT</sup>

### Medications to avoid in those with dementia

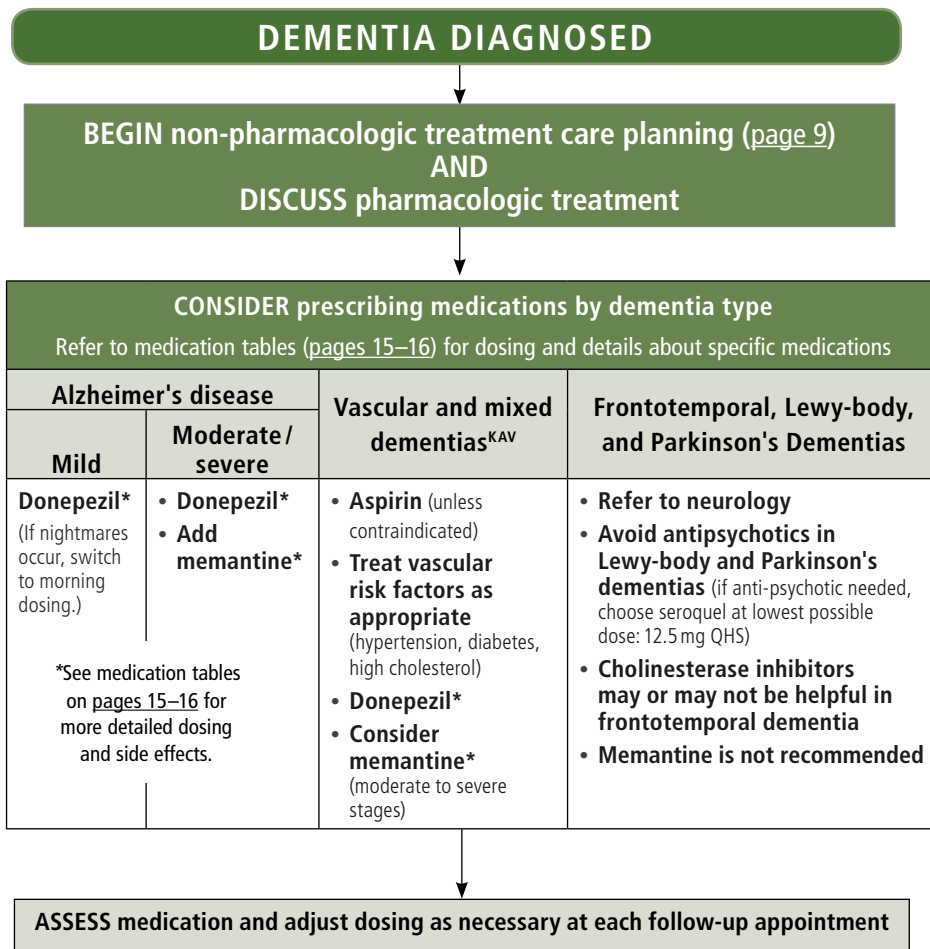
The American Geriatrics Society’s Beers criteria identifies medications that may be inappropriate for elderly patients because of an increased risk of adverse events.<sup>AGS2</sup> Many of the medications listed in the Beers criteria cause problems particularly in patients with dementia. For example, anticholinergic and sedative medications are associated with memory impairment, functional decline, hallucinations, and increased risk for falls.<sup>CAR, FOX</sup> Antipsychotic medications used to manage the behavioral symptoms of dementia are associated with an increase in mortality.<sup>LEN</sup>

Table 6 on [page 17](#) outlines medications that should be used cautiously in patients with dementia as well as recommended alternatives.

### SUPPLEMENTS / OTHER MEDICATIONS

There is not good quality evidence that vitamins, supplements, and non-dementia prescription medications are effective for preventing or treating dementia. However, significant patient interest in these medications warrants a summary of current evidence. Tables 7 and 8 on [page 18](#) provide usual dosing, potential to either prevent or treat dementia, and safety considerations for these medications.

## ALGORITHM 2: Dementia Treatment



**NOTE:**  
When caring for patients with dementia, stopping offending medications is often a far more important / effective intervention than starting a new medication, such as a cholinesterase inhibitor, and should always be considered first.

## REPORTING REQUIREMENTS

For all patients with SEVERE dementia, the primary care provider should report the diagnosis to the Driver's License Division by either:

- Noting the diagnosis in section F on the **Functional Ability Evaluation Medical Report** ([page 28](#)).

### OR

- Completing the **Unsafe Driver Review form**, which can be found on the [Utah Driver's License Division website](#). NOTE: If a medical provider completes this form, notarization is NOT required. A copy of this form is on [page 29](#).

## KEY PATIENT AND FAMILY EDUCATION ON DEMENTIA AND DRIVING

- Dementia and Driving Resource Center — <http://www.alz.org/care/alzheimers-dementia-and-driving.asp>
- At the Crossroads: Family Conversations about Alzheimer's Disease, Dementia, and Driving — <http://hartfordauto.thehartford.com/UI/Downloads/Crossroads.pdf>

## MANAGING BEHAVIORAL DISTURBANCE

- Take care of self.
- Restrict patient's caffeine to before noon.
- Limit patient's daytime napping.
- Establish structured daytime activities. Include activities that match previous interests.
- Have calming bedtime routine.
- Respond to questions in a calm voice.
- Give one-step instructions or simple questions. Offer only two choices at a time.
- Remove clutter, and eliminate excessive noise.
- Distract or redirect patient rather than arguing.

For more information, see <https://www.nia.nih.gov/alzheimers/topics/caregiving#behaviors>

## Evaluation of driving safety (see algorithm on [page 13](#))

Dementia increases the risk of motor vehicle accidents, but some patients with mild dementia can safely drive provided they have an on-road assessment, no history of accidents, and no concerns from family members.

Performing an objective driving evaluation (either with on-road testing at the DMV or through an occupational therapy consultation) is a critical piece of determining whether or not a patient with mild or moderate dementia will drive safely. Driving ability should be revisited at least annually. It is important to assess independent risk factors apart from cognitive impairment such as a history of crashes and traffic violations. Patients with dementia are often told they can drive “if only in the area”; however, it is important to note that driving <60 miles per week is an independent risk factor for crashes. Caregiver report is essential for evaluating driving ability.<sup>IV E</sup>

Driving cessation is perhaps one of the most challenging areas that the primary care provider faces in the management of a patient with dementia, and this can strain the physician-patient relationship. Preserving this relationship depends on the patient trusting that the provider has their best interest at heart. When recommending driving cessation, key considerations for the provider include:

- Understand that loss of driving privileges represents a loss of independence for the patient, which can be very difficult to deal with.
- Assess patients' transportation needs, and work with patient and family to come up with reliable alternate forms of transportation that will meet their needs.
- Plan to allow extra time for these discussions as they are very sensitive in nature.
- Stress that the goal is to preserve independence but that safety must come first.

## Management of psychological and behavioral problems (see algorithm on [page 14](#))

Behavioral or neuropsychiatric symptoms of dementia can include agitation, delusions, aggression, hallucinations, anxiety, sleep disturbance, apathy, depression, and disinhibition — all of which cause great distress for caregivers and may result in the patient requiring institutionalization.<sup>GIT1</sup> Caregivers should be asked regularly about such behavioral symptoms. The **Behav5** questionnaire ([page 27](#)) should be administered, and caregiver stress should be monitored using the **Stress Thermometer** ([page 26](#)).<sup>KAL2</sup>

For any newly observed behaviors, evaluate illness, pain, nutrition, sleep, constipation, dehydration, and medication side effects as possible contributors, and treat if present. Initially, treat behavioral disturbances by determining the exact behavior as well as circumstances in which it occurs. Identify any triggers for the behavior such as boredom, lack of supervision, lack of daytime structure, chaotic environment, or inappropriate communication techniques (e.g., arguing). Be sure to:<sup>GIT1</sup>

- Ensure patient safety (see [Safe Return Program](#) for patients who wander).
- Provide caregiver support and education, and teach caregivers effective communication strategies (this approach has the strongest evidence).
- Modify the environment (see [Managing Behavioral Disturbance](#) at left).

Medications are second-line treatment and should be employed only for severe cases and/or when non-pharmacologic treatments have been employed. Some evidence indicates that citalopram can be helpful for treating behavioral disturbance and is well tolerated.<sup>SEI, POR</sup> Antipsychotics can be considered for severe cases, but benefits must be weighed carefully with significant medication risk. Inform caregivers about possible side effects and any FDA black box warnings about sudden cardiac death.<sup>SEI, SIN2</sup>

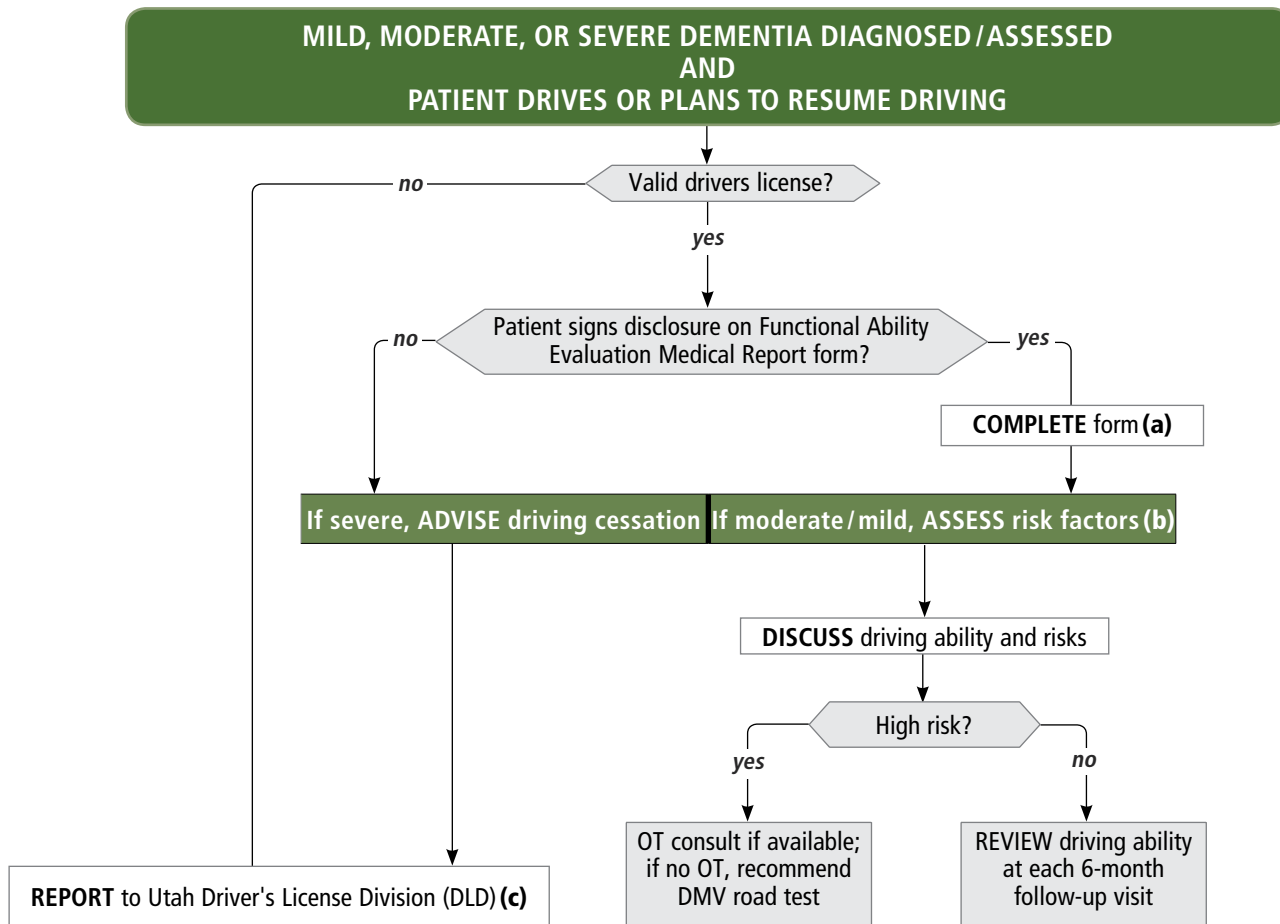
Patients who have a behavioral disturbance should be referred to the care manager, and the patient should be followed frequently.<sup>SEI, COR2, GIT2, KAL2</sup>

### Driving Assessment and Reporting Forms

See [pages 28–29](#) for full-size versions of these driving forms:

- Utah Driver License Division: Functional Ability Evaluation Medical Report
- Utah Department of Public Safety Report (DI-117)

## ALGORITHM 3: Driving Assessment



### ALGORITHM NOTES

#### (a) COMPLETING THE FUNCTIONAL ABILITY EVALUATION MEDICAL REPORT FORM

- MARK Learning / Memory category at the appropriate level (6–8).
- SPECIFY "driving skills test."
- MARK all other pertinent categories.
- SIGN form, and FAX it to UT DLD.

**NOTE:** Driving tests cannot be performed for patients at Level 8.

#### (b) RISK FACTORS

- History of traffic citation(s)
- History of crash(es)
- Caregiver report of unsafe driving
- Self-limited driving (daylight, restricted area, limited mileage)
- Impaired judgment
- Coexisting medical conditions
  - Alcoholism
  - Sedating meds
  - Sleep disorders
  - Motor impairment
  - Neurologic impairment

#### (c) REPORTING TO DLD

- Use form DI 117 ([page 28](#)).
- Refer patient to care management or other resources for UT ID card and alternate transportation sources.

# ALGORITHM 4: Managing Behavioral and Psychological Symptoms

## ALGORITHM NOTES

### (a) Behavioral and psychological symptoms of dementia

Ask if patient has shown:

- |                  |                                    |
|------------------|------------------------------------|
| • Delusions      | • Elation                          |
| • Hallucinations | • Disinhibition                    |
| • Agitation      | • Irritability                     |
| • Aggression     | • Sleep disturbance                |
| • Depression     | • Appetite and eating disturbances |
| • Anxiety        |                                    |
| • Apathy         |                                    |

### (b) Evaluate the disturbance

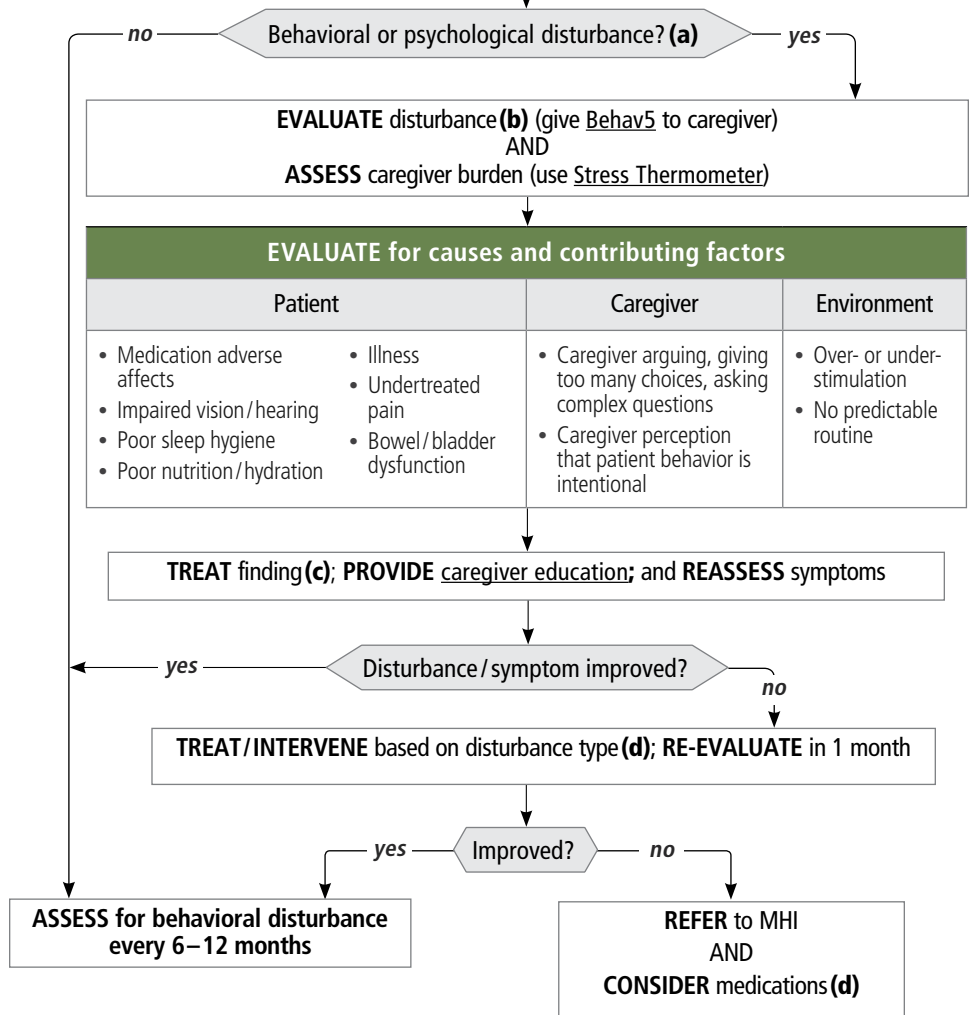
Describe the behavior:

- Patient considerations
  - What was the exact behavior and what was the patient’s perspective?
  - Is the behavior a threat to safety?
- Caregiver considerations
  - How distressing was the behavior?
  - Why was it distressing?
  - How does the caregiver handle it?
- Environmental considerations
  - When/where did the behavior occur?
  - Who was present?
  - What happened before and after?

### (c) Treat/intervene

- Patient interventions
  - Discontinue meds with adverse affects
  - Manage pain
  - Treat infection, dehydration, constipation
  - Improve sleep hygiene
  - Treat impaired vision/hearing
- Caregiver interventions
  - Provide education on dementia
  - Teach effective communication strategies
- Environmental interventions
  - Create a predictable daily routine
  - Provide intellectual stimulation and physical activity suitable for dementia stage
  - Simplify/enhance environment as appropriate
- Referrals
  - Care manager
  - Consider neuropsychology consultation

## PATIENT WITH DEMENTIA (SYMPTOMS / DIAGNOSIS)



### (d) Treatments/interventions by disturbance type

First-line treatment for all disturbance types: Implement non-pharmacological interventions		
<ul style="list-style-type: none"> <li>• Train caregivers in behavioral management strategies (see sidebar on <a href="#">page 12</a>)</li> </ul>	<ul style="list-style-type: none"> <li>• Exercise</li> <li>• Music</li> <li>• Participation in pleasant events</li> </ul>	<ul style="list-style-type: none"> <li>• Manage caregiver stress: counseling, support groups, local resources (area agency on aging, Alzheimer’s groups, in-home help, adult day care, out-of-home respite care)</li> </ul>
Depression/Anxiety	Agitation/Aggression/ Psychosis	Sleep Disturbance
<ul style="list-style-type: none"> <li>• Cholinesterase inhibitor</li> <li>• Memantine (as appropriate by diagnosis)</li> <li>• Sertraline or citalopram (start at low dose and titrate slowly)<sup>SEI</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Cholinesterase inhibitor</li> <li>• Memantine</li> <li>• SSRI if symptoms mild</li> <li>• Antipsychotic if severe symptoms or non-response to SSRI (see table 6 on <a href="#">page 17</a> for cautions)</li> </ul>	<p>Sleep hygiene:</p> <ul style="list-style-type: none"> <li>• Cut off electronics in evening</li> <li>• Discontinue caffeine</li> <li>• Minimize daytime napping</li> <li>• Provide exercise, stimulation, and exposure to light during day</li> <li>• Trazodone: (25–100 mg given 1 hour before bedtime)</li> <li>• Melatonin (limited evidence)</li> </ul>

**TABLE 4. Medications used to treat cognitive impairment in dementia (see table 5 for strength of evidence)<sup>LEX, MICR</sup>**

Class <sup>1,2</sup>	Medication (common brands) and dosage guidelines*	Tier / Cost**	Side effects and other comments
Cholinesterase Inhibitors	<p><b>donepezil</b> (Aricept)</p> <p><b>Initiate:</b> at 5 mg daily (in the morning) for the first month  <b>Titrate:</b> May increase to 5 mg BID for one month after patient has been taking 5 mg daily for 1 month. At that point, may increase to 10 mg daily (in the morning)</p>	<p><b>Tier 1:</b> \$  <b>Tier 3:</b> \$\$\$</p>	<ul style="list-style-type: none"> <li>Dose-related GI side effects (nausea, vomiting, diarrhea) typically occur during first month and usually subside.<sup>CUM</sup></li> <li>Insomnia, abnormal dreams, vivid dreams, and nightmares can occur. Morning dosing may eliminate these events.<sup>JAK</sup></li> </ul>
	<p><b>rivastigmine</b> (Exelon)</p> <p><b>Oral:</b>  <b>Initiate:</b> at 1.5 mg twice daily with meals.  <b>Titrate:</b> to 3 mg twice daily after 2–4 weeks, may increase by 1.5 mg daily every 2–4 weeks to maximum tolerated dose (max of 6 mg twice daily with meals).<sup>DES</sup>  <b>Range:</b> 3–12 mg daily.                      Use lower doses for CrCl &lt; 50 mL/min or Child-Pugh score 5–9.</p> <p><b>Patch:</b>  <b>Initiate:</b> at 4.6 mg/24-hr patch daily.  <b>Titrate:</b> by 4.5 mg/24 hr at 4-week intervals up to 13.3 mg/day maintenance dose, as tolerated.</p> <p><b>Caution:</b> Patients with moderate and severe renal insufficiency or with a Child-Pugh Score of ≥5, may be unable to tolerate higher doses.<sup>EXE</sup></p>	<p><b>Tier 1 (oral):</b> \$</p> <p><b>Tier 3 (oral and patch):</b> \$\$\$</p>	<ul style="list-style-type: none"> <li>Dose-related GI side effects (Nausea, vomiting, diarrhea) occur mostly during titration and decrease during maintenance.<sup>DES</sup> GI side effects are also less likely to occur when the patch is used rather than the capsules.<sup>WIN2</sup></li> <li>Closely monitor for increased GI side effects in patients &lt; 50 kg, and consider reducing the dose if these occur.<sup>EXE</sup></li> <li>Oral formulation must be taken with a meal.</li> <li>If dosing is interrupted for more than 3 days, treatment should be restarted at the initial dose and titrated back up.<sup>EXE</sup></li> <li>Least likely to interact with other medications.</li> <li>Consider using patch in patients with dysphagia.</li> </ul>
Cholinesterase Inhibitors	<p><b>galantamine</b> (Razadyne)</p> <p><b>Immediate-release:</b>  <b>Initiate:</b> at 4 mg twice daily with meals.  <b>Titrate:</b> if tolerated, increase to 8 mg twice daily after at least 4 weeks; then, may increase to 12 mg twice daily after at least another 4 weeks.</p> <p><b>Extended-release:</b>  <b>Initiate:</b> at 8 mg daily with meals.  <b>Titrate:</b> If tolerated, increase to 16 mg once daily after at least 4 weeks; then, may increase to 24 mg daily once daily after another 4 weeks.</p> <p><b>IF moderate renal or hepatic impairment:</b> Give max dose of 16 mg daily.  <b>IF CrCl &lt; 9 mL/min or Child-Pugh 10–15:</b> AVOID.</p>	<p><b>Tier 1:</b> \$</p> <p><b>Tier 3:</b> \$\$\$</p>	<ul style="list-style-type: none"> <li>GI side effects (nausea, vomiting, diarrhea, anorexia, weight loss) are most common side effects and may occur more frequently than with donepezil.</li> <li>Lucid dreams are possible.</li> <li>Medication must be taken with a meal.</li> </ul>
NMDA Antagonist	<p><b>memantine</b> (Namenda)</p> <p><b>Immediate release:</b>  <b>Initiate:</b> at 5 mg once daily.  <b>Titrate:</b> to a goal dose of 20 mg daily in 5 mg increments at intervals of at least 1 week. (Use twice daily dosing if more than 5 mg daily.)</p> <p><b>Extended-Release</b>  <b>Initiate:</b> at 7 mg daily.  <b>Titrate:</b> to goal of 28 mg daily in intervals of 7 mg per week (at least).  <b>IF CrCl &lt; 30 mL/min:</b> Give max dose of 5 mg twice daily (IR) or max dose of 14 mg daily (ER).</p>	<p><b>Tier 1 – 2:</b> \$\$</p> <p><b>Tier 3 (ER):</b> \$\$\$</p>	<ul style="list-style-type: none"> <li>Medication has fewer side effects than cholinergic agents.<sup>MCS</sup></li> <li>Dizziness is the most common side effect.</li> <li>Medication may increase delusions and agitation, especially in patients with LBD.</li> </ul>
Combination Medication	<p><b>memantine/donepezil</b> (Namzaric)</p> <p>Use memantine 28 mg/donepezil 10 mg once daily.  <b>IF CrCl &lt; 30 mL/min:</b> Use memantine 14 mg/donepezil 10 mg daily.</p>	<p><b>Tier 3:</b> \$\$\$</p>	<ul style="list-style-type: none"> <li>See information above for memantine and donepezil.</li> </ul>

\* Some dosage guidelines are based on usual care experience and may differ from manufacturer’s package data.

\*\* Tier 1 = Generic; Tier 2 = Preferred Brand; Tier 3 = Non-Preferred Brand. Cost is based on 30-day actual cost (not copay), and on generic, when available: \$ = \$1–25; \$\$ = \$26–75; \$\$\$ = \$76–150; \$\$\$\$ = > \$150

TABLE 5. Medication strength of evidence\*

Medication	Alzheimer's Disease	Lewy-Body Dementia	Parkinson's Disease Dementia	Vascular Dementia	Mixed Dementia
<b>donepezil</b> (Aricept)	Mild to severe — A ROG, COU, FAR, DOO2	B <sup>MAL</sup>	B <sup>DUB2</sup>	B <sup>MAL</sup>	No evidence
<b>rivastigmine</b> (Exelon)	Mild to moderate — A <sup>BIR2</sup>	B <sup>MCK3</sup>	B <sup>EMR</sup>	No evidence	No evidence
<b>galantamine</b> (Razadyne)	Mild to moderate — A <sup>OLI, WIL1</sup> Severe — B <sup>GAL</sup>	No evidence	No evidence	B <sup>ERK</sup>	B <sup>ERK, AUC</sup>
<b>memantine</b> (Namenda)	Moderate to severe — A <sup>REI</sup>	No evidence	No evidence	C <sup>KAV</sup>	No evidence
<b>memantine / donepezil</b> (Namzaric)	Moderate to severe — A <sup>HOW</sup>	No evidence	No evidence	No evidence	No evidence

\* Strength of evidence key: (A) = Based on data from large controlled trials; (B) = Based on data from smaller controlled trials; (C) = Based on expert opinion, open-label data, or usual-care experience; (D) = No acute efficacy



TABLE 6. Medications to use with caution in dementia<sup>LEX, MICR, RAB, GRA, AGS2</sup>

Medication Class/Examples	Adverse Effects	Therapeutic Alternatives	Comments
<b>Antihistamines</b> <ul style="list-style-type: none"> <li>diphenhydramine (Benadryl)</li> <li>hydroxyzine (Atarax)</li> <li>doxylamine (Unisom)</li> <li>chlorpheniramine (Chlorphen)</li> </ul>	<ul style="list-style-type: none"> <li>Constipation</li> <li>Delirium</li> <li>Dry mouth</li> <li>Sedation</li> <li>Urine retention</li> </ul>	<ul style="list-style-type: none"> <li>cetirizine (Zyrtec) 5–10 mg daily</li> <li>fexofenadine (Allegra) 60 mg twice daily</li> <li>loratadine (Claritin) 10 mg daily</li> </ul>	
<b>Benzodiazepines</b> <ul style="list-style-type: none"> <li>alprazolam (Xanax)</li> <li>clonazepam (Klonopin)</li> <li>diazepam (Valium)</li> </ul>	<ul style="list-style-type: none"> <li>Falls</li> <li>Delirium</li> </ul>	<ul style="list-style-type: none"> <li>bupirone (Buspar) titrated to 15 mg twice daily<sup>COO</sup></li> <li>sertraline (Zoloft) 50–200 mg daily</li> <li>citalopram (Celexa) 10–20 mg daily</li> </ul>	If a benzodiazepine must be used, select a low dose of a short-acting agent such as: lorazepam (Ativan) 0.25–0.5 mg every 8 hours or oxazepam (Serax) 5 mg every 6 hours. <sup>WAN</sup>
<b>Antiemetics</b> <ul style="list-style-type: none"> <li>dimenhydrinate (Dramamine)</li> <li>meclizine (Antivert)</li> <li>promethazine (Phenergan)</li> <li>metoclopramide (Reglan)</li> </ul>	<ul style="list-style-type: none"> <li>Constipation</li> <li>Delirium</li> <li>Dry mouth</li> <li>Sedation</li> <li>Urine retention</li> </ul>	ondansetron (Zofran)	Metoclopramide (Reglan) 5 mg every 4–6 hours can be used short term; long-term use may cause extrapyramidal side effects.
<b>Antipsychotics</b> <ul style="list-style-type: none"> <li>aripiprazole (Abilify)</li> <li>clozapine (Clozaril)</li> <li>haldol (Haloperidol)</li> <li>olanzapine (Zyprexa)</li> </ul>	<ul style="list-style-type: none"> <li>QTc prolongation</li> <li>Increased mortality when used to treat dementia-related behavioral issues in the elderly</li> </ul>	<ul style="list-style-type: none"> <li>risperidone (Risperdal) 0.5–1 mg daily<sup>KAL</sup></li> <li>olanzapine (Zyprexa) 2.5–5 mg daily<sup>AGS3</sup></li> <li>quetiapine (Seroquel) 12.5 mg daily<sup>KAL</sup></li> <li>sertraline (Zoloft) 50–200 mg daily<sup>FIN</sup></li> <li>citalopram (Celexa) 10–20 mg daily<sup>POL2</sup></li> </ul>	<ul style="list-style-type: none"> <li>Increased mortality when used to treat behavior problems in elderly patients with dementia. Use should be limited to patients in danger of harming themselves or others.</li> <li>Small studies have indicated sertraline (Zoloft) and citalopram (Celexa) are associated with a modest improvement of psychosis and agitation compared to placebo.<sup>POL2, FIN</sup> However, there is no statistically significant difference in the effectiveness of SSRIs compared to typical or atypical antipsychotics.<sup>POL2, POL3, SEI</sup></li> </ul>
<b>Muscle relaxants</b> <ul style="list-style-type: none"> <li>carisoprodol (Soma)</li> <li>cyclobenzaprine (Flexeril)</li> <li>metaxalone (Skelaxin)</li> <li>methocarbamol (Robaxin)</li> <li>orphenadrine (Norflex)</li> </ul>	<ul style="list-style-type: none"> <li>Cognitive impairment</li> <li>Sedation</li> <li>Urine retention</li> </ul>	<ul style="list-style-type: none"> <li>Physical therapy</li> <li>baclofen (Kemstro) 5 mg TID PRN</li> <li>tizanidine (Zanaflex) 2 mg every 5–6 hours as needed</li> </ul>	
<b>Tricyclic Antidepressants (TCA)</b> <ul style="list-style-type: none"> <li>amitriptyline (Elavil)</li> <li>clomipramine (Anafranil)</li> <li>imipramine (Tofranil)</li> </ul>	<ul style="list-style-type: none"> <li>Constipation</li> <li>Delirium</li> <li>Dry mouth</li> <li>Sedation</li> <li>Urine retention</li> </ul>	<ul style="list-style-type: none"> <li>SSRIs for depression</li> <li>trazodone (Desyrel) 50–100 mg at bedtime for insomnia</li> <li>lidocaine or capsaicin for neuropathic pain</li> </ul>	If a TCA must be used, consider: <ul style="list-style-type: none"> <li>desipramine (Norpramin) 25 mg daily</li> </ul> <b>OR</b> <ul style="list-style-type: none"> <li>nortriptyline (Aventyl) 25 mg daily</li> </ul>
<b>Antispasmodics</b> <ul style="list-style-type: none"> <li>oxybutynin (Ditropan)</li> <li>tolterodine (Detrol)</li> <li>dicyclomine (Bentyl)</li> <li>hyoscyamine (Levsin)</li> </ul>	<ul style="list-style-type: none"> <li>Constipation</li> <li>Delirium</li> <li>Dry mouth</li> <li>Sedation</li> <li>Urine retention</li> </ul>	<b>For urge incontinence:</b> <ul style="list-style-type: none"> <li>darifenacin (Enablex) 7.5 mg daily</li> </ul> <b>OR</b> <ul style="list-style-type: none"> <li>mirabegron (Myrbetriq) 25 mg daily</li> </ul> <b>For BPH:</b> <ul style="list-style-type: none"> <li>finasteride (Propecia, Proscar) 5 mg daily</li> </ul> <b>OR</b> <ul style="list-style-type: none"> <li>dutasteride (Duagen) 0.5 mg daily</li> </ul> <b>For diarrhea:</b> loperamide (Imodium) 4 mg followed by 2 mg after each loose stool (up to a maximum of 16 mg/day)	
<b>Barbiturates</b> butalbital	<ul style="list-style-type: none"> <li>Drowsiness</li> <li>Dizziness</li> <li>Heartburn</li> <li>Dyspepsia</li> </ul>	<ul style="list-style-type: none"> <li>diclofenac topical (Voltaren gel)</li> <li>tramadol (Ultram) 50 mg every 4–6 hours as needed, not to exceed 300 mg/24 hours</li> <li>acetaminophen 500 mg/caffeine 65 mg every 6 hours as needed</li> </ul>	
<b>Nonbenzodiazepine hypnotics</b> <ul style="list-style-type: none"> <li>eszopiclone (Lunesta)</li> <li>zolpidem (Ambien)</li> <li>zaleplon (Sonata)</li> </ul>	<ul style="list-style-type: none"> <li>Falls</li> <li>Delirium</li> </ul>	<ul style="list-style-type: none"> <li>trazodone (Desyrel) 50–100 mg every night at bedtime</li> <li>Melatonin (limited evidence) 3–5 mg every night at bedtime</li> </ul>	

TABLE 7. Supplements

Supplement	Usual Dosing	Potential to:		Safety When Used as Directed	Comments
		Prevent Dementia	Treat Dementia		
Vitamin E (alpha-tocopherol) <sup>ARL</sup>	800–2,000 IU daily	Possibly <b>Evidence:</b> Limited	Possibly <b>Evidence:</b> Limited	<ul style="list-style-type: none"> <li>Some risks</li> <li>Risk of side effects, such as bleeding, increase as higher doses (&gt; 1,000 IU) are used.</li> </ul>	Maintaining healthy levels of vitamin E in the diet may be more advantageous than supplementation. A meta-analysis showed increasing dietary intake of vitamins E and C may reduce the risk of developing Alzheimer's disease by around 20%. <sup>LF</sup>
Ginkgo biloba <sup>WEI</sup>	120–240 mg daily	Unlikely <b>Evidence:</b> Strong	Likely <b>Evidence:</b> Limited	Very likely safe	
Long chain omega-3 fatty acids, DHA and EPA <sup>MAZ</sup>	200–3,000 mg daily	Likely <b>Evidence:</b> Limited	Unlikely <b>Evidence:</b> Limited	Very likely safe when dose is < 3 g daily	DHA may improve symptoms of dementia in patients with dementia due to thrombotic cerebrovascular diseases.
Curcumin (found in turmeric) <sup>RIN</sup>	400 mg–4 g daily	Possibly <b>Evidence:</b> Limited	Possibly <b>Evidence:</b> Very limited	Very likely safe	
Cinnamon <sup>KHA</sup>	120–6,000 mg extract daily	Possibly <b>Evidence:</b> Limited	Possibly <b>Evidence:</b> Very limited	Very likely safe	
Vitamin B12 <sup>LUC</sup>	500 mcg daily	Unlikely <b>Evidence:</b> Limited	Unlikely <b>Evidence:</b> Limited	Probably safe	
Vitamin B6 <sup>LUC</sup>	20 mg daily	Unlikely <b>Evidence:</b> Limited	Unlikely <b>Evidence:</b> Limited	Probably safe	
Vitamin B9 <sup>LUC</sup>	1 mg daily	Controversial <b>Evidence:</b> Limited	Controversial <b>Evidence:</b> Limited	Probably safe	
Resveratrol <sup>MAR</sup>	500–2,000 mg daily	Possibly <b>Evidence:</b> Very limited	Possibly <b>Evidence:</b> Very limited	Probably safe	Patients taking anticoagulants and antiplatelets should avoid resveratrol due to increased bleeding risk.

TABLE 8. Other pharmacologic agents

Other Pharmacologic Agents	Usual Dosing	Potential to		Safety When Used as Directed	Comments
		Prevent Dementia	Treat Dementia		
Selegiline <sup>WIL2</sup>	10 mg daily	<b>No evidence</b>	Controversial <b>Evidence:</b> Limited	Some risks	Carries a black-box warning for suicidal thoughts and behavior
Statins <sup>MCG</sup>	Varies based on statin	Possibly <b>Evidence:</b> Limited	Unlikely <b>Evidence:</b> Limited	Likely safe	
Estrogen replacement <sup>SHU</sup>	0.5–2 mg daily	Controversial <b>Evidence:</b> Moderate	Unlikely <b>Evidence:</b> Limited	Some risks	
Anti-inflammatory drugs <sup>SZE</sup>	Varies based on medication	Controversial <b>Evidence:</b> Moderate	Unlikely <b>Evidence:</b> Limited	Some risks	

## ► RESOURCES

### CPM and Best Practice Flashcards (see page 4)

- View online: In either [intermountain.net](http://intermountain.net) or [intermountainphysician.org](http://intermountainphysician.org), choose Clinical Programs > Clinical Topics A-Z > Dementia for all Intermountain-produced patient and provider materials.
- Ordering: Access Intermountain's Online Library and Print Store at [iprintstore.org](http://iprintstore.org). Search by key terms, or use the topic menu to browse.

### Recommended Patient and Caregiver Education Materials

#### The Alzheimer's Association Resources for:

- **Patients Newly Diagnosed:** <http://www.alz.org/i-have-alz/just-diagnosed.asp>
- **Taking Care of Yourself:** <http://www.alz.org/i-have-alz/taking-care-of-yourself.asp>
- **Tips for Daily Life:** <http://www.alz.org/i-have-alz/tips-for-daily-life.asp>
- **Taking Action Workbook:** [http://www.alz.org/i-have-alz/downloads/lwa\\_pwd\\_taking\\_action\\_workbook.pdf](http://www.alz.org/i-have-alz/downloads/lwa_pwd_taking_action_workbook.pdf)
- **Healthy Caregiving:** <http://www.alz.org/care/alzheimers-dementia-healthy-caregiver.asp>
- **Tips for Communicating:** <http://www.alz.org/care/dementia-communication-tips.asp>
- **Caregiving for Early-Stage Dementia:** <http://www.alz.org/care/alzheimers-early-mild-stage-caregiving.asp>
- **Caregiving for Moderate-Stage Dementia:** <http://www.alz.org/care/alzheimers-mid-moderate-stage-caregiving.asp>
- **Caregiving for Late-Stage Dementia:** <http://www.alz.org/care/alzheimers-late-end-stage-caregiving.asp>

#### National Institute on Aging Resources

- **Coping with Agitation and Aggression:** <https://www.nia.nih.gov/alzheimers/publication/coping-agitation-and-aggression>
- **Hallucinations, Delusions, and Paranoia:** <https://www.nia.nih.gov/alzheimers/publication/hallucinations-delusions-and-paranoia>
- **Communication and Behavior Problems—Resources for Alzheimer's Caregivers:** <https://www.nia.nih.gov/alzheimers/communication-and-behavior-problems-resources-alzheimers-caregivers>

### WHAT DEMENTIA PATIENTS WANT THEIR HEALTHCARE PROVIDERS TO KNOW AND DO (FROM FOCUS GROUPS)

- Take me and my family seriously if we report a concern about memory.
- Do an objective evaluation of memory.
- Give me a diagnosis.
- Explain how you made the diagnosis.
- Give me information about my diagnosis but don't just throw it at me. Schedule a follow up in 2–3 months to review it with me after I have had time to process the information.
- Tell me and my family what to expect and help us plan for the future.
- Tell me what I and my family/caregiver can do to help my situation.
- If you aren't sure how to make the diagnosis or how to treat it, refer me for specialty consultation.
- If you do refer me to a specialist, please coordinate with them and follow up on their recommendations.
- Give me and my family the number for the Alzheimer's Association, and encourage us to get involved.
- Set up a time for me and my family to meet with your care manager.

### Intermountain's dementia-related fact sheets and other tools

Produced by the same team that created this CPM, these fact sheets help educate patients and families about mild cognitive impairment and dementia symptoms, staging, treatments, and caregiver support.

- **FS500 *Mild Cognitive Impairment (MCI)*** — Covers how MCI is diagnosed as well as “brain health” and driving safety.
- **FS485 *Understanding Dementia: First Steps after Diagnosis*** — Covers what the patient needs to know when first diagnosed, how to cope with the diagnosis, and initial supportive messages for caregivers
- **FS492 *Dementia: Personal Action Plan*** — Used with a care manager or home health provider; covers self-care strategies including diet, exercise, sleep, maximizing function, and being safe
- **FS494 *Alzheimer's Resources: Utah and Southern Idaho*** — Lists area agencies on aging and support groups

**Patients and their families** can find all of these materials and links to other reliable dementia resources in the Health Library at Intermountain's public website (<https://intermountainhealthcare.org/health-information/health-library/patient-handouts/>).



## OTHER ONLINE RESOURCES / SUPPORT GROUPS

### Alzheimer's Disease

- Alzheimer's Association: [www.alz.org](http://www.alz.org)
- National Institute on Aging Alzheimer's Disease Education and Referral Center (ADEAR):  
<https://www.nia.nih.gov/alzheimers/>
- Community Resource Finder:  
<http://www.communityresourcefinder.org/>
- Alzheimer's Navigator: <https://www.alzheimersnavigator.org/>
- Music and Memory: <http://musicandmemory.org/>
- **Research:**
  - University of Utah Center for Alzheimer's Care, Imaging, and Research (CACIR)—Memory Study Line: 801-587-7888
  - Alzheimer's Association Trial Match:  
[http://www.alz.org/research/clinical\\_trials/find\\_clinical\\_trials\\_trialmatch.asp](http://www.alz.org/research/clinical_trials/find_clinical_trials_trialmatch.asp)
- **Local support groups in Utah:**  
Alzheimer's Association in Utah
  - **General information:** Call 801-265-1944 (Salt Lake County office) or 435-669-3664 (Washington County office)
  - **For information on support groups,** visit:  
[http://www.alz.org/utah/in\\_my\\_community\\_support.asp](http://www.alz.org/utah/in_my_community_support.asp)
  - **24 / 7 Helpline:** 800-272-3900
- **Local support group in Idaho:**  
Alzheimer's Association Greater Idaho Chapter
  - **General Information:** Call 208-206-0041, or visit [www.alz.org/idaho](http://www.alz.org/idaho)
  - **For information on support groups,** visit:  
[http://www.alz.org/idaho/in\\_my\\_community\\_support.asp](http://www.alz.org/idaho/in_my_community_support.asp)
  - **24 / 7 Helpline:** 800-272-3900

Intermountain's fact sheet, *Alzheimer's Resources: Utah and Southern Idaho*, offers detailed information on Utah and Southern Idaho Alzheimer's Association Support Groups and Area Agencies on Aging.

### Dementia with Lewy Bodies

- Dementia with Lewy Bodies: <http://www.lbda.org/>
- Lewy Body Dementia Association, Inc.:  
912 Killian Hill Road S.W., Lilburn, GA 30047
  - LBD Caregiver Link: 800-539-9767
  - National Office (Atlanta, GA): 404-935-6444
  - National Office Fax: 480-422-5434
- **Local support group in Salt Lake Valley**  
Contact Raquel Asay at 801-533-0972 or by email at [rachelar39@gmail.com](mailto:rachelar39@gmail.com)

### Driving Safety

- Dementia & Driving Resource Center:  
<http://www.alz.org/care/alzheimers-dementia-and-driving.asp>
- *At the Crossroads: Family Conversations about Alzheimer's Disease, Dementia, and Driving:*  
<http://hartfordauto.thehartford.com/UI/Downloads/Crossroads.pdf>

### Frontotemporal Dementia

- The Association for Frontotemporal Degeneration (AFTD):  
<http://www.theaftd.org/>  
Radnor Station Building 2, Suite 320, 290 King of Prussia Road, Radnor, PA 19087,  
267-514-7221 OR 866-507-7222 (toll free & HelpLine)
- Southwest Region of the AFTD (California, Arizona, Utah, New Mexico, Colorado, Hawaii): Kathy Urban: [kurban.aftd@gmail.com](mailto:kurban.aftd@gmail.com)
- **Local FTD and related dementias support groups in Utah:**
  - Sandy Senior Center, 9310 S 1300 E, Sandy, UT  
Meets the 2nd Wednesday from 10:00 to 11:30 am  
Contact: Bonnie Shepherd, 801-231-3442;  
[bbshepherd@comcast.net](mailto:bbshepherd@comcast.net)
  - Bingham Creek Library, 4834 W 9000 S, West Jordan, UT  
Meets the 2nd Wednesday from 6:00 to 7:30 pm  
Contact: Jamie Gordon, 801-550-3563; [jjgordon3@juno.com](mailto:jjgordon3@juno.com)
  - National phone-based support group for adult children affected by FTD:  
Scheduled the 3rd Thursday of the month from 5:00 to 6:30 pm.  
Led and organized by University of California, San Francisco:  
Contact for access number: Jamie C. Fong, M.S., CGC,  
415-476-8613; [jfong@memory.ucsf.edu](mailto:jfong@memory.ucsf.edu)

### Parkinson's Disease Dementia

National Parkinson Foundation: <http://www.parkinson.org/>  
200 SE 1st Street, Suite 800, Miami, Florida 33131  
Toll-free Helpline: 800-4PD-INFO (473-4636)  
Fax: 305-537-9901  
E-mail inquiries: [contact@parkinson.org](mailto:contact@parkinson.org)

## ► FORMS

**Cognitive screening and staging forms:** Full-sized copies of most forms referenced in this CPM can be found below and on the following pages (pages 22–29). To access MoCA forms and administration/scoring instructions, follow the instructions on page 23.

### Mini-Cog™

## Mini-Cog™

## Instructions for Administration & Scoring

ID: \_\_\_\_\_ Date: \_\_\_\_\_

### Step 1: Three Word Registration

Look directly at person and say, “Please listen carefully. I am going to say three words that I want you to repeat back to me now and try to remember. The words are [select a list of words from the versions below]. Please say them for me now.” If the person is unable to repeat the words after three attempts, move on to Step 2 (clock drawing).

The following and other word lists have been used in one or more clinical studies.<sup>1-3</sup> For repeated administrations, use of an alternative word list is recommended.

Version 1	Version 2	Version 3	Version 4	Version 5	Version 6
Banana	Leader	Village	River	Captain	Daughter
Sunrise	Season	Kitchen	Nation	Garden	Heaven
Chair	Table	Baby	Finger	Picture	Mountain

### Step 2: Clock Drawing

Say: “Next, I want you to draw a clock for me. First, put in all of the numbers where they go.” When that is completed, say: “Now, set the hands to 10 past 11.”

Use preprinted circle (see next page) for this exercise. Repeat instructions as needed as this is not a memory test. Move to Step 3 if the clock is not complete within three minutes.

### Step 3: Three Word Recall

Ask the person to recall the three words you stated in Step 1. Say: “What were the three words I asked you to remember?” Record the word list version number and the person’s answers below.

Word List Version: \_\_\_\_\_ Person’s Answers: \_\_\_\_\_

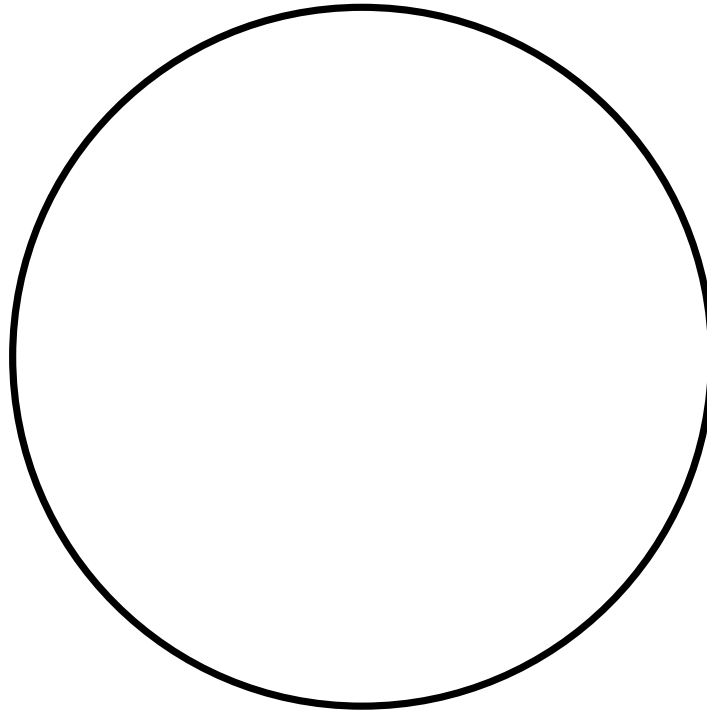
### Scoring

Word Recall: _____ (0-3 points)	1 point for each word spontaneously recalled without cueing.
Clock Draw: _____ (0 or 2 points)	Normal clock = 2 points. A normal clock has all numbers placed in the correct sequence and approximately correct position (e.g., 12, 3, 6 and 9 are in anchor positions) with no missing or duplicate numbers. Hands are pointing to the 11 and 2 (11:10). Hand length is not scored. Inability or refusal to draw a clock (abnormal) = 0 points.
Total Score: _____ (0-5 points)	Total score = Word Recall score + Clock Draw score.  A cut point of <3 on the Mini-Cog™ has been validated for dementia screening, but many individuals with clinically meaningful cognitive impairment will score higher. When greater sensitivity is desired, a cut point of <4 is recommended as it may indicate a need for further evaluation of cognitive status.

Mini-Cog™ © S. Borson. All rights reserved. Reprinted with permission of the author solely for clinical and educational purposes. May not be modified or used for commercial, marketing, or research purposes without permission of the author (soob@uw.edu). v. 01.19.16

**Mini-Cog™****Clock Drawing**

ID: \_\_\_\_\_ Date: \_\_\_\_\_

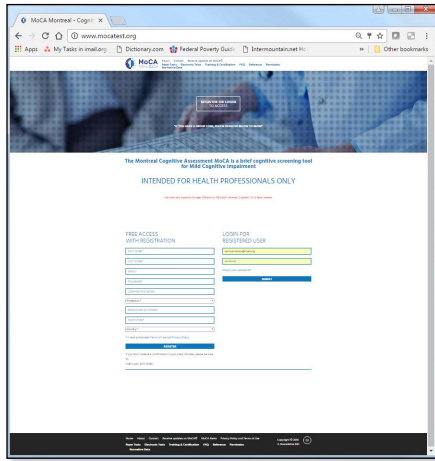
**References**

1. Borson S, Scanlan JM, Chen PJ et al. The Mini-Cog as a screen for dementia: Validation in a population-based sample. *J Am Geriatr Soc* 2003;51:1451–1454.
2. Borson S, Scanlan JM, Watanabe J et al. Improving identification of cognitive impairment in primary care. *Int J Geriatr Psychiatry* 2006;21: 349–355.
3. Lessig M, Scanlan J et al. Time that tells: Critical clock-drawing errors for dementia screening. *Int Psychogeriatr*. 2008 June; 20(3): 459–470.

Mini-Cog™ © S. Borson. All rights reserved. Reprinted with permission of the author solely for clinical and educational purposes. May not be modified or used for commercial, marketing, or research purposes without permission of the author (soob@uw.edu).  
v. 01.19.16

# Montreal Cognitive Assessment (MoCA)

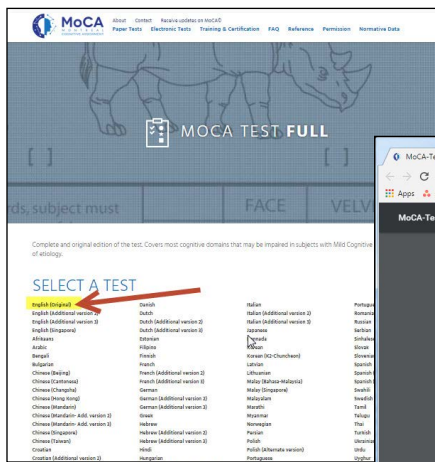
Downloadable copies of the MoCA form (in many languages) and administration and scoring instructions are available at no charge at [mocatest.org](http://mocatest.org). The site does require registration, and instructions for setting up an account and downloading files are included below.



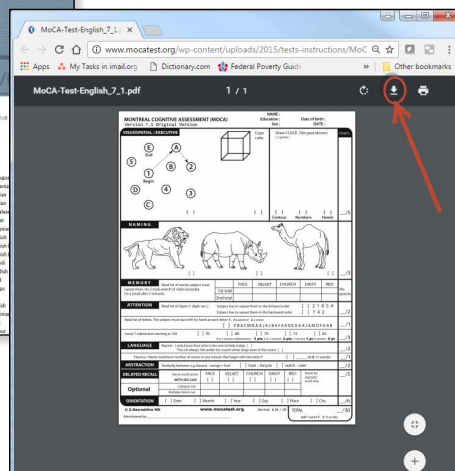
1. Visit [mocatest.org](http://mocatest.org) and register for a free account. You will need to complete the form that appears and submit. A confirmation email will be sent to you with a link to use to complete the registration.



2. Once you have clicked on the confirmation link in your email, the following page will open. To access the form, click on the "MOCA TEST FULL" icon as indicated.



3. The next window that opens lists all the different versions of the MoCA test in various languages. Select the appropriate version.



4. Download the test form (see a sample on page 24). You can also print the form from this screen by clicking the icon next to the one for downloading.

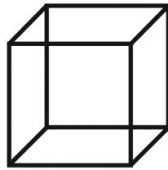
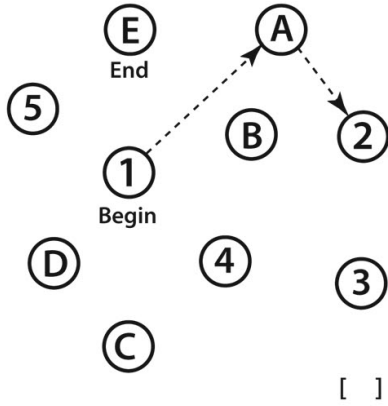
# Montreal Cognitive Assessment (MoCA)

**MONTREAL COGNITIVE ASSESSMENT (MOCA)**  
Version 7.1 Original Version

NAME :  
Education :  
Sex :

Date of birth :  
DATE :

**VISUOSPATIAL / EXECUTIVE**



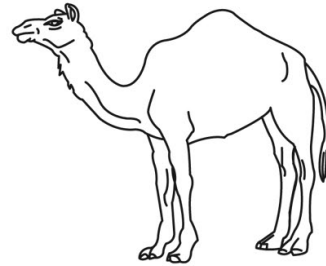
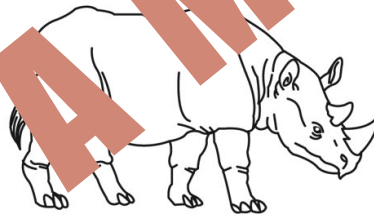
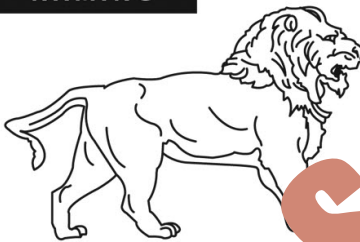
Copy cube

Draw CLOCK (Ten past eleven)  
(3 points)

POINTS

[ ] Contour [ ] Numbers [ ] Hands    /5

**NAMING**



[ ] [ ]    /3

**MEMORY**

Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED
1st trial					
2nd trial					

No points

**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

   /2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors

[ ] FBACMNAAJKLBAFAKDEAAAJAMOF AAB

   /1

Serial 7 subtraction starting at 100

[ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65

4 or 5 correct subtractions: **3 pts**, 2 or 3 correct: **2 pts**, 1 correct: **1 pt**, 0 correct: **0 pt**

   /3

**LANGUAGE**

Repeat : I only know that John is the one to help today. [ ]

The cat always hid under the couch when dogs were in the room. [ ]

   /2

Fluency / Name maximum number of words in one minute that begin with the letter F [ ] \_\_\_\_\_ (N ≥ 11 words)

   /1

**ABSTRACTION**

Similarity between e.g. banana - orange = fruit [ ] train - bicycle [ ] watch - ruler

   /2

**DELAYED RECALL**

Has to recall words

FACE	VELVET	CHURCH	DAISY	RED
[ ]	[ ]	[ ]	[ ]	[ ]

Points for UNCUED recall only

   /5

**Optional**

Category cue  
Multiple choice cue

**ORIENTATION**

[ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City

   /6

© Z.Nasreddine MD

www.mocatest.org

Normal ≥ 26 / 30

TOTAL    /30

Administered by: \_\_\_\_\_

Add 1 point if ≤ 12 yr edu



# Functional Activities Questionnaire (FAQ) for Informants<sup>PFE</sup>

INFORMANT NAME: \_\_\_\_\_

PATIENT NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

PATIENT DOB or MRN: \_\_\_\_\_

## Functional Activities Questionnaire (FAQ)

PROVIDER INSTRUCTIONS: Give questionnaire to an informant (caregiver, family member, or friend of the patient)

How well does the patient:	Depends on others to do	Needs help to do	Has difficulty but does by self	Normal	Never did but could do now	Never did and would have difficulty now	Don't know
1. Write checks, pay bills, and balance the checkbook?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
2. Assemble tax records, business affairs, or papers?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
3. Shop alone for clothes, household necessities, or groceries?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
4. Play a game of skill or work on a hobby?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
5. Heat water, make a cup of coffee, and turn off the stove?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
6. Prepare a balanced meal?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
7. Keep track of current events?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
8. Pay attention to, understand, and discuss TV, a book, or a magazine?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
9. Remember appointments, family occasions, holidays, and medications?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
10. Travel out of the neighborhood by driving or arranging to take buses?	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 0
<b>TOTAL</b>							

PROVIDER EVALUATION: Sum the ratings across the 10 items. Scores ≥9 indicated significant functional impairment.

Table adapted from Pfeffer RI, et. al. Measurement of functional activities in older adults in the community. *J Gerontol.* 1982;37(3):323-329.

# Stress Thermometer for Caregivers<sup>BOR2</sup>

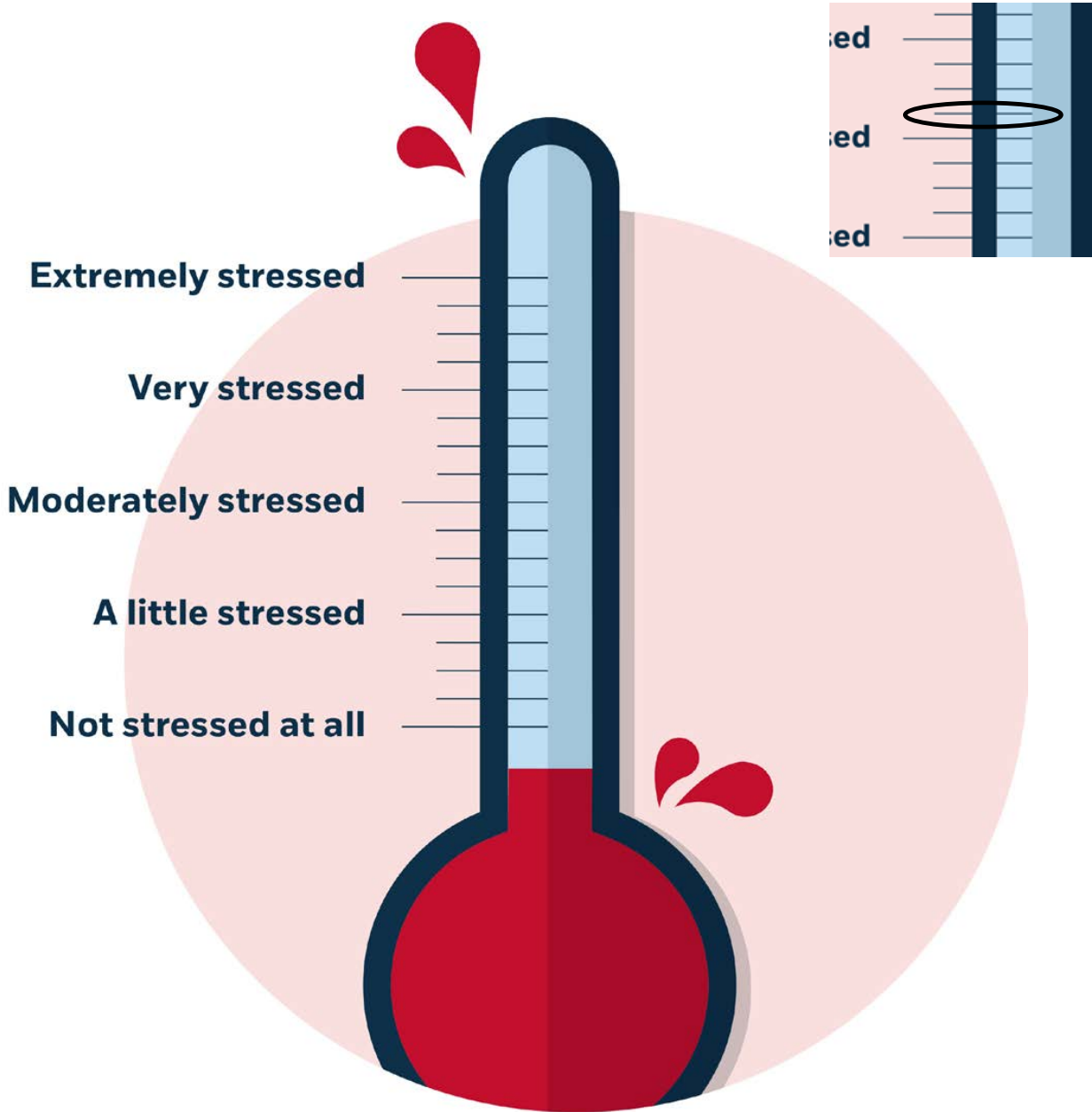
## My Stress Thermometer

Caregiver Name: \_\_\_\_\_

Patient Name: \_\_\_\_\_ Patient DOB: \_\_\_\_\_ Date: \_\_\_\_\_

*STRESS: Feeling tense, nervous, anxious, restless, or unable to sleep because your mind is troubled all the time.*<sup>ELO</sup>

**Please CIRCLE the line that represents your current stress level**



ID: \_\_\_\_\_ Date: \_\_\_\_\_

©S. Borson (Used with Permission from Soo Borson)

**BEHAV5<sup>BOR2</sup>**

**BEHAV5**

Borson, Sadak ©

Please check yes for the behaviors that **you have observed** in your **care recipient** in the **past month**.

<p><b>1. AGITATION/AGGRESSION</b></p> <p>Does your care recipient get angry or hostile? Resist care from others?</p>	<p><input type="checkbox"/> Yes   <input type="checkbox"/> No</p>
<p><b>2. HALLUCINATIONS</b></p> <p>Does your care recipient see and/or hear things that no one else can see or hear?</p>	<p><input type="checkbox"/> Yes   <input type="checkbox"/> No</p>
<p><b>3. IRRITABILITY/ FREQUENTLY CHANGING MOOD</b></p> <p>Does your care recipient act impatient and cranky? Does his or her mood frequently change for no apparent reason?</p>	<p><input type="checkbox"/> Yes   <input type="checkbox"/> No</p>
<p><b>4. SUSPICIOUSNESS/PARANOIA</b></p> <p>Does your care recipient act suspicious without good reason (example: believes that others are stealing from him or her, or planning to harm him or her in some way)?</p>	<p><input type="checkbox"/> Yes   <input type="checkbox"/> No</p>
<p><b>5. INDIFFERENCE/SOCIAL WITHDRAWAL</b></p> <p>Does your care recipient seem less interested in his or her usual activities and in the activities and plans of others?</p>	<p><input type="checkbox"/> Yes   <input type="checkbox"/> No</p>

BEHAV5

V1.0 9.2.16

Page 1 of 1

Participant ID: \_\_\_\_\_

Date: \_\_\_\_\_

Used with permission from Soo Borson.

# Utah Driving Assessment Forms (in Idaho, contact the Idaho Transportation Department: 208-334-8000)

## FUNCTIONAL ABILITY EVALUATION MEDICAL REPORT

UTAH DRIVER LICENSE DIVISION  
 P O BOX 144501  
 SLC UT 84114-4501  
 Phone Number: (801) 957-8690  
 Fax Number: (801) 957-8698

**TOP PORTION MUST BE COMPLETED AND SIGNED BY APPLICANT**

Last Name \_\_\_\_\_ First Name \_\_\_\_\_ Middle or Maiden Name \_\_\_\_\_ Date of Birth \_\_\_\_\_ Driver License or DPC # \_\_\_\_\_

By signing this form, I authorize my healthcare professional(s) to disclose specific health information regarding my physical, mental and emotional condition relevant to my ability to safely operate a motor vehicle, to the Utah Driver License Division.

I understand that if I fail to sign this authorization my driving privilege may be affected. I understand that this information will be classified as a private record in accordance with GRAMA (UCA 63G-2-202). Individuals who are entitled to have a "private" record disclosed to them are limited to the subject of the record, a parent or legal guardian of an unemancipated minor or legally incapacitated individual, an individual with power of attorney or a notarized release signed by the subject of the record, or an individual with a court or legislative subpoena.

**APPLICANT'S SIGNATURE:** \_\_\_\_\_



**Date:** \_\_\_\_\_

Form will not be processed without signature

**BOTTOM PORTION TO BE COMPLETED AND SIGNED BY HEALTH CARE PROFESSIONAL**

The following safety assessment level is for use in determining driving privileges. It is consistent with the current edition of **Functional Ability in Driving: Guidelines and Standards for Health Care Professionals**. Please indicate level below with a check mark and your initials.

Safety Assessment Level	A Diabetes & Metabolic Condition On Insulin <input type="checkbox"/> Yes <input type="checkbox"/> No	B Cardio-Vascular & High Blood Pressure	C Pulmonary <input type="checkbox"/> Inhaler Only <input type="checkbox"/> Oxygen w/Driving	D Neurologic	E Seizures or Episodic Conditions <input type="checkbox"/> Date of last seizure _____	F Learning Memory	G Psychiatric or Emotional Condition	H Alcohol & Other Drugs	J Musculo-skeletal/ Chronic Debility	K Alertness or Sleep Disorders	L <input type="checkbox"/> Hearing <input type="checkbox"/> Balance
	1										
2											
3											
4											
5						N/A					
6				N/A	N/A			N/A	N/A	N/A	
7					N/A						
8											

Please indicate if any of the following apply to this medical review:

- Non-standard review time frame \_\_\_\_\_
- Safety Assessment categories not marked are relevant and should be completed by another health care professional. Please list categories which are of concern: \_\_\_\_\_

Recommended Restrictions:	
<input type="checkbox"/> ADD	OR <input type="checkbox"/> REMOVE
<input type="checkbox"/> Speed-posted 40 mph or less	<input type="checkbox"/> Area
<input type="checkbox"/> Oxygen while driving	<input type="checkbox"/> Daylight only

I recommend this driver complete a driving skills test in an appropriate vehicle. (Drive test is not available for level 8)

Date form is completed \_\_\_\_\_ Printed Name of Health Care Professional and Degree \_\_\_\_\_ Signature & initials \_\_\_\_\_ State License Number \_\_\_\_\_  
 (Must be submitted to Driver License within 6 months)

Street Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ Telephone \_\_\_\_\_ Fax Number \_\_\_\_\_

Doctor's Comments \_\_\_\_\_  
 There are special considerations I would like to discuss with a representative of the Division.

Date form is completed \_\_\_\_\_ Printed Name of Health Care Professional and Degree \_\_\_\_\_ Signature & initials \_\_\_\_\_ State License Number \_\_\_\_\_  
 (Must be submitted to Driver License within 6 months)

Street Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_ Telephone \_\_\_\_\_ Fax Number \_\_\_\_\_

Doctor's Comments \_\_\_\_\_  
 There are special considerations I would like to discuss with a representative of the Division.

For more information regarding the medical program or to view current medical guidelines, please visit:  
[www.driverlicense.utah.gov](http://www.driverlicense.utah.gov)

## Utah Driving Assessment Forms, continued

**DEPARTMENT OF PUBLIC SAFETY  
DRIVER LICENSE DIVISION  
4501 SOUTH 2700 WEST  
P O BOX 144501  
SALT LAKE CITY UT 84114-4501  
Fax Number: (801) 965-4336**

***THIS FORM IS USED BY THE UTAH DRIVER LICENSE DIVISION FOR THE PURPOSE OF REPORTING DRIVERS WHO MAY BE UNSAFE TO DRIVE. ANY PERSON, WHO IN GOOD FAITH, REPORTS A DRIVER WHO APPEARS TO PRESENT AN IMMINENT THREAT TO DRIVING SAFETY SHALL HAVE IMMUNITY FROM ANY DAMAGES CLAIMED AS A RESULT OF DOING SO. Utah Code Annotated (UCA) 53-3-303.***

The notification provided under this section relating to a physical, mental, or emotional impairment is classified as a protected record under Title 63G, Chapter 2, Government Records Access and Management Act, and the identity of the person notifying the Division shall not be disclosed by the Division.

**NAME OF SUBJECT** \_\_\_\_\_ **DATE OF BIRTH** \_\_\_\_\_  
 (Print)

**RELATIONSHIP (IF ANY)** \_\_\_\_\_ **UTAH LICENSE NUMBER or DRIVING PRIVILEGE CARD #** \_\_\_\_\_

**SUMMARY:** Describe actions or known impairments that you have observed which caused you to submit this report (be specific)

---



---



---



---



---



---



---



---

THE ABOVE STATEMENT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND THAT IT MAY BE PUNISHABLE AS A MISDEMEANOR TO KNOWINGLY GIVE A WRITTEN FALSE STATEMENT (UCA 76-8-504). I understand that if I have made a notification with the intent to annoy, intimidate, or harass the person that is the subject of the notification I may be charged with a class C misdemeanor (53-3-305(5)).

<p><b>REQUESTER INFORMATION:</b></p> <p>NAME: _____</p> <p>ADDRESS: _____</p> <p>PHONE: _____</p> <p>SIGNATURE: _____</p>	<p><b>NOTARIAL CERTIFICATE:</b></p> <p>STATE OF _____</p> <p>COUNTY OF _____</p> <p>Acknowledged before me this _____ day of _____, 20____.</p> <p>_____  <i>Notary Public</i></p> <p style="text-align: center;"><b>S E A L</b></p>
---	--

DI 117  
Rev. 8-12

## ► REFERENCES

- AGS1 AGS Clinical Practice Committee. Guidelines abstracted from the American Academy of Neurology's dementia guidelines for early detection, diagnosis, and management of dementia. *J Am Geriatr Soc.* 2003;51(6):869-873.
- AGS2 American Geriatrics Society 2015 Beers Criteria Update Expert Panel. American Geriatrics Society 2015 updated Beers criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc.* 2015;63(11):2227.
- AGS3 American Geriatrics Society. *Guide to the Management of Psychotic Disorders and Neuropsychiatric Symptoms of Dementia in Older Adults.* April 2011. [https://www.nhqualitycampaign.org/files/AGS\\_Guidelines\\_for\\_Telligen.pdf](https://www.nhqualitycampaign.org/files/AGS_Guidelines_for_Telligen.pdf) (Accessed 2016 Mar 20).
- AHL Ahiskog JE, Geda YE, Graff-Radford NR, Petersen RC. Physical exercise as a preventative or disease-modifying treatment of dementia and brain aging. *Mayo Clinic Proc.* 2011;86(9):876-884.
- ALZ Alzheimer's Association. 2015 Alzheimer's disease facts and figures. *Alzheimers Dement.* 2015;11(3):332-384.
- APA1 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (5th ed.)*. 2013. Washington, DC
- APA2 Rabins PV, Blacker D, Rovner BW, et al.; APA Work Group on Alzheimer's Disease and other Dementias. American Psychiatric Association practice guideline for the treatment of patients with Alzheimer's disease and other dementias (2nd ed). *Am J Psychiatry.* 2007;164(12 Suppl):5-56.
- ARL Arlt S, Muller-Thomsen T, Beisiegel U, Kontush A. Effect of one-year vitamin C- and E-supplementation on cerebrospinal fluid oxidation parameters and clinical course in Alzheimer's disease. *Neurochem Res.* 2012;37:2706-2714.
- AUC Auchus AP, Brashear HR, Salloway S, et al. Galantamine treatment of vascular dementia: A randomized trial. *Neurology.* 2007;69(5):448.
- BAR Barber R, Panikkar A, McKeith IG. Dementia with Lewy bodies: Diagnosis and management. *Int J Geriatr Psychiatry.* 2001;16 Suppl 1:S12-8.
- BAS Bass DM, Judge KS, Snow AL, et al. Caregiver outcomes of partners in dementia care: Effect of a care coordination program for veterans with dementia and their family members and friends. *J Am Geriatr Soc.* 2013;61(8):1377-1386.
- BEN Bennett DA, Schneider JA, Tang Y, Arnold SE, Wilson RS. The effect of social networks on the relation between Alzheimer's disease pathology and level of cognitive function in old people: A longitudinal cohort study. *Lancet Neurol.* 2006;5(5):406-412.
- BIR1 Birks J. Cholinesterase inhibitors for Alzheimer's disease. *Cochrane Database Sys Rev.* 2006:CD005593.
- BIR2 Birks JS, Grimley Evans J. Rivastigmine for Alzheimer's disease. *Cochrane Database Syst Rev.* 2015;4:CD001191.
- BOR1 Borson S, Scanlan JM, Chen PJ, et al. The Mini-Cog as a screen for dementia: Validation in a population-based sample. *Journal of the American Geriatrics Society.* 2003;51:1451-1454.
- BOR2 Borson S, Scanlan JM, Sadak T, Lessig M, Vitaliano P. Dementia services mini-screen: A simple method to identify patients and caregivers in need of enhanced dementia care services. *Am J Geriatr Psychiatry.* 2014;22(8):746-755.
- BUT Butcher J. Mind games: Do they work? *BMJ.* 2008;336(7638):246-248.
- CAL Callahan CM, Sachs GA, Lamantia MA, Unroe KT, Arling G, Boustani MA. Redesigning systems of care for older adults with Alzheimer's disease. *Health Aff (Millwood).* 2014;33(4):626-632.
- CAR Carrière I, Fourrier-Reglat A, Dartigues JF, et al. Drugs with anticholinergic properties, cognitive decline, and dementia in an elderly general population: The 3-city study. *Arch Intern Med.* 2009;169:1317.
- CHU Chui H, Zhang Q. Evaluation of dementia: A systematic study of the usefulness of the American Academy of Neurology's practice parameters. *Neurology.* 1997;49(4):925-935.
- COO Cooper JP. Buspirone for anxiety and agitation in dementia. *J Psychiatry Neurosci.* 2003;28(6):2003.
- COR1 Cordell CB, Borson S, Boustani M, et al.; Medicare Detection of Cognitive Impairment Workgroup. Alzheimer's Association recommendations for operationalizing the detection of cognitive impairment during the Medicare Annual Wellness Visit in a primary care setting. *Alzheimers Dement.* 2013;9(2):141-145.
- COR2 Corbett A, Burns A, Ballard C. Don't use antipsychotics routinely to treat agitation and aggression in people with dementia. *BMJ.* 2014;3:349:g6420.

- COU Courtney C, Farrell D, Gray R, et al., AD2000 Collaborative Group. Long-term donepezil treatment in 565 patients with Alzheimer's disease (AD2000): Randomized double-blind trials. *Lancet*. 2004;363:2105-15.
- CRA Crane PK, Doody RS. Donepezil treatment of patients with MCI: A 48-week randomized, placebo-controlled trial. *Neurology*. 2009;73(18):1514-5.
- CUM Cummings JL, Geldmacher D, Farlow M, et al. High-dose donepezil (23 mg/day) for the treatment of moderate and severe Alzheimer's disease: Drug profile and clinical guidelines. *CNS Neuroscience and Therapeutics*. 2013;19:294-301.
- DAL Dal Forno G, Palermo MT, Donohue JE, Karagiozis H, Zonderman AB, Kawas CH. Depressive symptoms, sex, and risk for Alzheimer's disease. *Ann Neurol*. 2005;57(3):381-7.
- DES Desai A, Grossberg G. Review of rivastigmine and its clinical applications in Alzheimer's disease and related disorders. *Expert Opin Pharmacother*. 2001;2(4):653-66.
- DOO1 Doody RS, Stevens JC, Beck C, et al. Practice parameter: Management of dementia (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*. 2001;56(9):1154-66.
- DOO2 Doody RS, Geldmacher DS, Gordon B, et al. Open-label, multicenter, phase 3 extension study of the safety and efficacy of donepezil in patients with Alzheimer disease. *Arch Neurol*. 2001;58(3):427.
- DUB1 Dubois B, Feldman HH, Jacova C, et al. Research criteria for the diagnosis of Alzheimer's disease: Revising the NINCDS-ADRDA criteria. *Lancet Neurol*. 2007;6(8):734-46.
- DUB2 Dubois B, Tolosa E, Katzschlager R, et al. Donepezil in Parkinson's disease dementia: A randomized, double-blind efficacy and safety study. *Mov Disord*. 2012;27(10):1230.
- ELO Elo A-L, Lappänen A, Jahkola A. Validity of a single-item measure of stress symptoms. *Scand J Work Environ Health*. 2003;29(6):444-451.
- EMR Emre M, Aarsland D, Albanese A, et al. Rivastigmine for dementia associated with Parkinson's disease. *N Engl J Med*. 2004;351(24):2509.
- ERK Erkinjuntti T, Kurz A, Gauthier S, Bullock R, et al. Efficacy of galantamine in probable vascular dementia and Alzheimer's disease combined with cerebrovascular disease: A randomised trial. *Lancet*. 2002;359(9314):1283.
- EXE Exelon® [package insert]. East Hanover, NJ: Novartis Pharmaceuticals Corporation; 2013.
- FAR Farlow MR, Salloway S, Tariot PN, et al. Effectiveness and tolerability of high-dose (23 mg/d) versus standard-dose (10 mg/d) donepezil in moderate to severe Alzheimer's disease: A 24-week, randomized, double-blind study. *Clin Ther*. 2010;32(7):1234.
- FEI Feil DG, MacLean C, Sultzer D. Quality indicators for the care of dementia in vulnerable elders. *J Am Geriatr Soc*. 2007;55 Suppl 2:S293-301.
- FIL Filippi M, Agosta F, Barkhof F, et al.; European Federation of the Neurologic Societies. EFNS task force: The use of neuroimaging in the diagnosis of dementia. *Eur J Neurol*. 2012;19(12):e131-40.
- FIN Finkel SI, Mintzer JE, Dysken M, et al. A randomized, placebo-controlled study of the efficacy and safety of sertraline in the treatment of the behavioral manifestations of Alzheimer's disease in outpatients treated with donepezil. *Int J Geriatr Psychiatry*. 2004;19(1):9-18.
- FOX Fox C, Richardson K, Maidment ID, et al. Anticholinergic medication use and cognitive impairment in the older population: The medical research council cognitive function and aging study. *J Am Geriatr Soc*. 2011;59:1477.
- FRE French DD, LaMantia MA, Livin LR, Herceg D, Alder CA, Boustani MA. Healthy Aging Brain Center improved care coordination and produced net savings. *Health Aff (Millwood)*. 2014;33(4):613-618.
- GAL1 Galvin JE, Valois L, Zweig Y. Collaborative transdisciplinary team approach for dementia care. *Neurodegener Dis Manag*. 2014;4(6):455-469.
- GAL2 Galasko D, Kershaw PR, Schneider L, et al. Galantamine maintains ability to perform activities of daily living in patients with Alzheimer's disease. *J Am Geriatr Soc*. 2004;52(7):1070.
- GAR Garrett KD, Paul RH, Libon DJ, Cohen RA. Defining the diagnosis of vascular dementia. *Appl Neuropsychol*. 2004;11(4):204-209.
- GEL Geldmacher DS, Provenzano G, McRae T, et al. Donepezil is associated with delayed nursing home placement in patients with Alzheimer's disease. *J Am Geriatr Soc*. 2003;51(7): 937-944.
- GES Geser F, Wenning GK, Poewe W, McKeith I. How to diagnose dementia with Lewy bodies: State of the art. *Mov Disord*. 2005;20 Suppl 12:S11-20.

- GIL Gill SS, Seitz DP. Lifestyles and cognitive health: What older individuals can do to optimize cognitive outcomes. *JAMA*. 2015;314(8):774-775.
- GIT1 Gitlin LN, Kales HC, Lyketsos CG. Nonpharmacologic management of behavioral symptoms in dementia. *JAMA*. 2012;308(19):2020-2029.
- GIT2 Gitlin LN, Marx KA, Stanley IH, Hansen BR, Van Haitsma KS. Assessing neuropsychiatric symptoms in people with dementia: A systematic review of measures. *Int Psychogeriatr*. 2014;26(11):1805-1848.
- GOR1 Gorelick PB, Scuteri A, Black SE, et al; American Heart Association Stroke Council, Council on Epidemiology and Prevention, Council on Cardiovascular Nursing, Council on Cardiovascular Radiology and Intervention, and Council on Cardiovascular Surgery and Anesthesia. Vascular contributions to cognitive impairment and dementia: A statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2011;42(9):2672-2713.
- GOR2 Gorno-Tempini ML, Hillis AE, Weintraub S, et al. Classification of primary progressive aphasia and its variants. *Neurology*. 2011;76(11):1006-1014.
- GRA Gray SL, Anderson ML, Dublin S, et al. Cumulative use of strong anticholinergics and incident dementia: A prospective cohort study. *JAMA Intern Med*. 2015;175(3):401-407.
- GUY Gu Y, Brickman AM, Stern Y, et al. Mediterranean diet and brain structure in a multiethnic elderly cohort. *Neurology*. 2015;85(20):1744-1751.
- HAN Hansen RA, Gartlehner G, Webb AP, et al. Efficacy and safety of donepezil, galantamine, and rivastigmine for the treatment of Alzheimer's disease: A systematic review and meta-analysis. *Clin Interv Aging*. 2008;3:211-225.
- HER Hebert LE, Weuve J, Scherr PA, Evans DA. Alzheimer disease in the United States (2010–2050) estimated using the 2010 census. *Neurology*. 2013;80(19):1778-1783.
- HEY Heyn P, Abreu BC, Ottenbacher KJ. The effects of exercise training on elderly persons with cognitive impairment and dementia: A meta-analysis. *Arch Phys Med Rehabil*. 2004;85(10):1694-1704.
- HHS US Department of Health and Human Services and US Department of Agriculture. *2015–2020 dietary guidelines for Americans, 8th edition*. <http://health.gov/dietaryguidelines/2015/guidelines>. Accessed on November 29, 2016.
- HOR Hort J, O'Brien JT, Gainotti G, et al; EFNS Scientist Panel on Dementia. EFNS guidelines for the diagnosis and management of Alzheimer's disease. *Eur J Neurol*. 2010;17(10):1236-1248.
- HOW Howard R, McShane R, Lindesay J, et al. Donepezil and memantine for moderate-to-severe Alzheimer's disease. *N Engl J Med*. 2012;366(10):893-903.
- HUR Hurd MD, Martorell P, Delavande A, Mullen KJ, Langa KM. Monetary costs of dementia in the United States. *N Engl J Med*. 2013;368(14):1326-1334.
- IVE Iverson DJ, Gronseth GS, Reger MA, Classen S, Dubinsky RM, Rizzo M. Practice parameter update: Evaluation and management of driving risk in dementia: Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*. 2010;74(16):1316-1324.
- JAK Jackson S, Ham RJ, Wilkison D. The safety and tolerability of donepezil in patients with Alzheimer's disease. *British Journal of Clinical Pharmacology*. 2004;58(S1):1-8.
- KAD Kaduszkiewicz H, Zimmermann T, Beck-Bornholdt HP, van den Bussche H. Cholinesterase inhibitors for patients with Alzheimer's disease: Systematic review of randomized clinical trials. *BMJ*. 2005;331:321-327.
- KAL1 Kales HC, Chen P, Blow FC, Welsh DE, Mellow AM. Rates of clinical depression diagnosis, functional impairment, and nursing home placement in coexisting dementia and depression. *Am J Geriatr Psychiatry*. 2005;13(6):441-449.
- KAL2 Kales HC, Gitlin LN, Lyketsos CG; Detroit Expert Panel on Assessment and Management of Neuropsychiatric Symptoms of Dementia. Management of neuropsychiatric symptoms of dementia in clinical settings: Recommendations from a multidisciplinary expert panel. *J Am Geriatr Soc*. 2014;62(4):762-769.
- KAL3 Kales HC, Kim HM, Zivin K, et al. Risk of mortality among individual antipsychotics in patients with dementia. *Am J Psychiatry*. 2012;169:71-79.
- KAV Kavirajan H, Schneider LS. Efficacy and adverse effects of cholinesterase inhibitors and memantine in vascular dementia: A meta-analysis of randomised controlled trials. *Lancet Neurol*. 2007;6(9):782.
- KHA Khasnavis S, Pahan K. Cinnamon treatment upregulates neuroprotective proteins parkin and dj-1 and protects dopaminergic neurons in a mouse model of Parkinson's disease. *J Neuroimmune Pharmacol*. 2014;9:569-581.



- LAN1 Langa KM, Levine DA. The diagnosis and management of mild cognitive impairment: A clinical review. *JAMA*. 2014;312(23):2551-2561.
- LAN2 Langa KM, Foster NL, Larson EB. Mixed dementia: Emerging concepts and therapeutic implications. *JAMA*. 2004;292(23):2901-2908.
- LAR Larson EB, Wang L, Bowen JD, et al. Exercise is associated with reduced risk for incident dementia among persons 65 years of age and older. *Ann Intern Med*. 2006;144(2):73-81.
- LEN Lenzer J. FDA warns about using antipsychotic drugs for dementia. *BMJ*. 2005;330:922.
- LEX Lexicomp Online [Internet]. Wolters Kluwer [cited 2016 Mar 17]. Available from: <http://nv-ezproxy.roseman.edu:2075/lco/action/home/switch?siteid=975>. Registration and login required.
- LIF Li FJ, Shen L, Ji HF. Dietary intakes of vitamin E, vitamin C, and  $\beta$ -carotene and risk of Alzheimer's disease: A meta-analysis. *J Alzheimers Dis*. 2012;31(2):253-258.
- LOU Lourida I, Soni M, Thompson-Coon J, et al. Mediterranean diet, cognitive function, and dementia: A systematic review. *Epidemiology*. 2013;24(4):479-489.
- LUC Luchsinger JA, Tang MX, Miller J, et al. Relation of higher folate intake to lower risk of Alzheimer's disease in the elderly. *Arch Neurol*. 2007;64:86-92.
- MAL Malouf R, Birks J. Donepezil for vascular cognitive impairment. *Cochrane Database Syst Rev*. 2004;(1):CD004395.
- MAR Marambaud P, Zhao H, Davies P. Resveratrol promotes clearance of Alzheimer's disease amyloid-beta peptides. *J Biol Chem*. 2005;280:37377-37382.
- MAT Matsunaga S, Kishi T, Iwata N. Comication therapy with cholinesterase inhibitors and memantine of Alzheimer's disease: A systematic review and meta-analysis. *Int J Neuropsychopharmacol*. 2014;18:1-11.
- MAZ Mazereeuw G, Lanctot KL, Chau SA, Swardfager W, Herrmann N. Effects of omega-3 fatty acids on cognitive performance: A meta-analysis. *Neurobiol Aging*. 2012;33(7):1482.e17-29.
- MCG McGuinness B, Craig D, Bullock R, et al. Statins for the treatment of dementia. *Cochrane Database Syst Rev*. 2014;8(7):CD007514.
- MCK1 McKhann GM, Knopman DS, Chertkow H, et al. The diagnosis of dementia due to Alzheimer's disease: Recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimers Dement*. 2011;7(3):263-269.
- MCK2 McKeith IG. Consensus guidelines for the clinical and pathologic diagnosis of dementia with Lewy bodies (DLB): Report of the Consortium on DLB International Workshop. *J Alzheimers Dis*. 2006;9(3 Suppl):417-422.
- MCK3 McKeith I, Del Ser T, Spano P, et al. Efficacy of rivastigmine in dementia with Lewy bodies: A randomised, double-blind, placebo-controlled international study. *Lancet*. 2000;356(9247):2031.
- MCL McLaren AN, Lamantia MA, Callahan CM. Systematic review of non-pharmacologic interventions to delay functional decline in community-dwelling patients with dementia. *Aging Ment Health*. 2013;17(6):655-666.
- MCS McShane R, Areosa Sastre A, Minakaran N. Memantine for dementia. *Cochrane Database Syst Rev*. 2006:CD003154.
- MICR Micromedex [Internet]. Truven Health Analytics. [cited 2016 Mar 17]. Available from: <http://nv-ezproxy.roseman.edu:3305/>. Registration and login required.
- MIT1 Mittelman MS, Ferris SH, Shulman E, Steinberg G, Levin B. A family intervention to delay nursing home placement of patients with Alzheimer's disease: A randomized controlled trial. *JAMA*. 1996;276(21):1725-1733.
- MIT2 Mitrou PN, Kipnis V, Thiébaud AC, et al. Mediterranean dietary pattern and prediction of all-cause mortality in a US population: Results from the HIH-AARP Diet and Health Study. *Arch Intern Med*. 2007;167(22):2461-2468.
- MOR Moroney JT, Bagiella E, Desmond DW, et al. Meta-analysis of the Hachinski Ischemic Score in pathologically verified dementias. *Neurology*. 1997;49(4):1096-1105.
- MUR Murray AD. Imaging approaches for dementia. *Am J Neuroradiol*. 2012;33(10):1836-1844.
- NAS Nasreddine ZS, Phillips NA, Bédirian V, et al. The Montreal Cognitive Assessment, MoCA: A brief screening tool for mild cognitive impairment. *J Am Geriatr Soc*. 2005;3(4):695-699.

- ODE Odenheimer G, Borson S, Sanders AE, et al. Quality improvement in neurology: Dementia management quality measures. *Neurology*. 2013;81(17):1545-1549.
- OLI Olin J, Schneider L. Galantamine for Alzheimer's disease. *Cochrane Database Syst Rev*. 2001;(4):CD001747.
- PET Petersen RC, Stevens JC, Ganguli M, Tangalos EG, Cummings JL, DeKosky ST. Practice parameter: Early detection of dementia: Mild cognitive impairment (an evidence-based review). Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*. 2001;56(9):1133-1142.
- PFE Pfeffer RI, Kurosake MS, Harrah, Jr CH, Chance JM, Filos, S. Measurement of functional activities in older adults in the community. *J Gerontol*. 1982;37(3):323-329.
- PIN Pinquart M, Sörensen S. Differences between caregivers and noncaregivers in psychological health and physical health: A meta-analysis. *Psychol Aging*. 2003;18(2):250-267.
- POL1 Polidori MC, Nelles G, Pientka L. Prevention of dementia: Focus on lifestyle. *International J of Alzheimer's Dis*. 2010;10:1-9.
- POL2 Pollock BG, Mulsant BH, Rosen J, et al. Comparison of citalopram, perphenazine, and placebo for the acute treatment of psychosis and behavioral disturbances in hospitalized, demented patients. *Am J Psychiatry*. 2002;159(3):460-465.
- POL3 Pollock BG, Mulsant BH, Rosen J, et al. A double-blind comparison of citalopram and risperidone for the treatment of behavioral and psychotic symptoms associated with dementia. *Am J Geriatr Psychiatry*. 2007;15(11):942-952.
- POR Porsteinsson AP, Drye LT, Pollock BG, et al.; CitAD Research Group. Effect of citalopram on agitation in Alzheimer disease: The CitAD randomized clinical trial. *JAMA*. 2014;311(7):682-689.
- RAB1 Rabins PV, Blass DM. In the clinic: Dementia. *Ann Intern Med*. 2014;161(3):ITC1;quiz ITC16.
- RAB2 Rabins PV, Blacker D, Rovner BW, et al. Practice guideline for the treatment of patients with Alzheimer's disease and other dementias, 2nd edition. *Psychiatryonline.org*. [Internet]. 2007 Oct [cited 2016 Mar 20]. Available from: [http://psychiatryonline.org/pb/assets/raw/sitewide/practice\\_guidelines/guidelines/alzheimers.pdf](http://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/alzheimers.pdf).
- RAI Raina P, Santaguida P, Ismaila A, et al. Effectiveness of cholinesterase inhibitors and memantine for treating dementia: Evidence review for a clinical practice guideline. *Ann Intern Med* 2008;148:379-397.
- RAS Rascovsky K, Hodges JR, Knopman D, et al. Sensitivity of revised diagnostic criteria for the behavioural variant of frontotemporal dementia. *Brain*. 2011;134(Pt 9):2456-2477.
- REI Reisberg B, Doody R, Stöffler A, et al. Memantine in moderate-to-severe Alzheimer's disease. *N Engl J Med*. 2003;348(14):1333.
- RIN Ringman JM, Frautschy SA, Teng E, et al. Oral curcumin for Alzheimer's disease: Tolerability and efficacy in a 24-week randomized, double blind, placebo-controlled study. *Alzheimers Res Ther*. 2012;4(5):43.
- ROD Rodda J, Morgan S, Walker Z. Are cholinesterase inhibitors effective in the management of the behavioural and psychological symptoms of dementia in Alzheimer's disease? A systematic review of randomized, placebo-controlled trials of donepezil, rivastigmine, and galantamine. *Int Psychogeriatrics*. 2009;21:813-824.
- ROG Rogers SL, Farlow MR, Doody RS, et al; Donepezil Study Group. A 24-week, double-blind, placebo-controlled trial of donepezil in patients with Alzheimer's disease. *Neurology*. 1998;50(1):136.
- SAC Sachdev P, Kalaria R, O'Brien J, et al; International Society for Vascular Behavioral and Cognitive Disorders. Diagnostic criteria for vascular cognitive disorders: A VASCOG statement. *Alzheimer Dis Assoc Disord*. 2014;28(3):206-218.
- SCH Scheltens P, Blennow K, Breteler MM, et al. Alzheimer's disease. *Lancet*. 2016;388(10043):505-517.
- SEI Seitz DP, Adunuri N, Gill SS, Gruneir A, Herrmann N, Rochon P. Antidepressants for agitation and psychosis in dementia. *Cochrane Database Syst Rev*. 2011;(2):CD008191.
- SHU Shumaker SA, Legault C, Rapp SR, et al. Estrogen plus progestin and the incidence of dementia and mild cognitive impairment in postmenopausal women: The Women's Health Initiative Memory Study: A randomized controlled trial. *JAMA*. 2003;289(20):2651-2662.
- SIN1 Sink KM, Espeland MA, Castro CM, et al; LIFE Study Investigators. Effect of a 24-month physical activity intervention vs health education on cognitive outcomes in sedentary older adults: The LIFE randomized trial. *JAMA*. 2015;314(8):781-790.

- SIN2 Sink KM, Holden KF, Yaffe K. Pharmacological treatment of neuropsychiatric symptoms of dementia: A review of the evidence. *JAMA*. 2005;293(5):596-608.
- SKI Skibitsky MD, Poll J, Garrett KD, Obray CM, Hoesch RE. *Support for Cognitively Impaired Patients is a Top Primary Care Need*. Poster session presented at the Alzheimer's Association International Conference, Toronto, Canada, July 2016.
- SOF Sofi F, Cesari F, Abbate R, Gensini GF, Casini A. Adherence to Mediterranean diet and health status: Meta-analysis. *BMJ*. 2008;337:a1344.
- SPI Spijker A, Vernooij-Dassen M, Vasse E, et al. Effectiveness of nonpharmacological interventions in delaying the institutionalization of patients with dementia: A meta-analysis. *J Am Geriatr Soc*. 2008;56(6):1116-1128.
- SZE Szekely CA, Green RC, Breitner JC, et al. No advantage of A beta 42-lowering NSAIDs for prevention of Alzheimer dementia in six pooled cohort studies. *Neurology*. 2008;70(24):2291-2298.
- TSO Tsoi KK, Chan JY, Hirai HW, Wong SY, Kwok TC. Cognitive tests to detect dementia: A systematic review and meta-analysis. *JAMA Intern Med*. 2015;175(9):1450-1458.
- VAL Valls-Pedret C, Sala-Vila A, Serra-Mir M, et al. Mediterranean diet and age-related cognitive decline: A randomized clinical trial. *JAMA Intern Med*. 2015;175(7):1094-1103.
- VIC Vickrey BG, Mittman BS, Connor KI, et al. The effect of a disease management intervention on quality and outcomes of dementia care: A randomized, controlled trial. *Ann Intern Med*. 2006;145(10):713-726.
- WAN Wang PS, Bohn RL, Mogun H, et al. Hazardous benzodiazepine regimens in the elderly: Effects of half-life, dosage, and duration on risk of hip fracture. *Am J Psychiatry*. 2001;158:892-898.
- WEI Weinmann S, Roll S, Schwarzbach C, Vauth C, Willich SN. Effects of ginkgo biloba in dementia: Systematic review and meta-analysis. *BMC Geriatr*. 2010;10:14.
- WEU Weuve J, Hebert LE, Scherr PA, Evans DA. Prevalence of Alzheimer's disease in US states. *Epidemiology*. 2015;26(1):e4-6.
- WIL1 Wilcock GK, Lilienfeld S, Gaens E; Galantamine International-1 Study Group. Efficacy and safety of galantamine in patients with mild to moderate Alzheimer's disease: Multicentre randomised controlled trial. *BMJ*. 2000;321(7274):1445.
- WIL2 Wilcock GK, Birks J, Whitehead A, et al. The effect of selegiline in the treatment of people with Alzheimer's disease: A meta-analysis of published trials. *Int J Geriatr Psychiatry*. 2002;17:175-183.
- WIN1 Winblad B, Jones RW, Wirth Y, Stoffler A. Memantine in moderate to severe Alzheimer's disease: A meta-analysis of randomized clinical trials. *Dement Geriatr Cog Disord*. 2007;24:20-27.
- WIN2 Winblad B, Cummings J, Andreasen N, et al. A six-month double-blind, randomized, placebo-controlled study of a transdermal patch in Alzheimer's disease—rivastigmine patch versus capsule. *Int J Geriatr Psychiatry*. 2007;22(5):456.
- WIP Wippold FJ 2nd, Brown DC, Broderick DF, et al. ACR appropriateness criteria dementia and movement disorders. *J Am Coll Radiol*. 2015;12(1):19-28.
- YAS Yasar S, Xia J, Yao W, et al.; Ginkgo Evaluation of Memory (GEM) Study Investigators. Antihypertensive drugs decrease risk of Alzheimer disease: Ginkgo Evaluation of Memory Study. *Neurology*. 2013;81(10):896-903.

## CPM DEVELOPMENT TEAM

Bob Hoesch, MD, PhD

Cathleen Obray, MD, MS

Kelly Garrett, PhD

Meg Skibitsky, MD, MPH

Clarissa Gregory, PharmD, BCACP, BCGP, CACP

Stephen Peters, Psy.D., ABN

Lauren Greenberg, Psy.D.

Nicole Clark, MD, FAAFP

Becky Bailey, PhD

Betsy Firth, PhD

Laura Grimaldi, RN, BSN

Janie Earle, RN, BSN

Cherie Bruncker, MD

Heather Welch, OTD, MS, CDRS

Jeremy Hopkin, MD

Julie Martinez, MSN, RN

Elisabeth Malmberg, MS

Tom Lombardi, MD

Trevor Squire, MD

Patrice Duvernay, MD

Luciana DeSaibro, MD

Lucia Altamirano, MD, A

Alan Sanderson, MD

Janice Nelson, RN

Kathi Whitman, MA

Jeremy Fotheringham, RN, JD, MHSA

Gabe Fontaine, PharmD

## SPECIAL THANKS TO:

Seth Gale, MD, Center for Neurologic Diseases,  
Brigham & Women's Hospital

Dennis Selkoe, MD, Center for Neurologic  
Diseases, Brigham & Women's Hospital

Soo Borson, MD,  
University of Washington

Jone Koford, Operations, Senior Services,  
South West Region, Intermountain Healthcare

Terri Christiansen, Intermountain  
Neurosciences Clinical Program

Krista Shonrock, MD, Select Health

Jeff McNally, MD, Intermountain  
Homecare and Hospice

Paul Astle, Intermountain Homecare

Justin Poll, PhD, Intermountain Research

Kate Nederostek, MGS, CDP,  
Alzheimer's Association of Utah

Mary Martineau, LCSW,  
Intermountain Senior Clinic

Ronnie Daniels, Executive Director,  
Alzheimer's Association of Utah

Caro Sanderson, MS, Instructional Designer,  
Intermountain Healthcare

Heather Bloyer, BA,  
Patient and Provider Publications

SuzAnn Summers,  
Patient and Provider Publications

Shannon F. Clegg, BSN, MBA  
Internal Strategy and Operations Consultant  
Patients and caregivers

This CPM presents a model of best care based on the best available scientific evidence at the time of publication. It is not a prescription for every physician or every patient, nor does it replace clinical judgment. All statements, protocols, and recommendations herein are viewed as transitory and iterative. Although physicians are encouraged to follow the CPM to help focus on and measure quality, deviations are a means for discovering improvements in patient care and expanding the knowledge base. Send feedback to Meg Skibitsky, MD, MPH, Intermountain Healthcare, Medical Director Neurosciences Clinical Program, Cognitive Care Development Team (Meg.Skibitsky@imail.org).