Dealing with cognitive impairment
Prevention, management, and advance care planning
Some interventions can reduce the risk of dementia

These include common primary care practices:¹

In randomized trials, exercise did not improve cognition, but does benefit overall health.²⁻⁵ 'Cognitive training' does not prevent cognitive decline. Over-the-counter 'memory enhancers' have no evidence of efficacy.⁶⁻⁷

Strict BP control led to a reduction in mild cognitive impairment (MCI).

**FIGURE 1.** After five years of follow-up, the SPRINT-MIND study found strict SBP control reduced the incidence of MCI.⁸

<table>
<thead>
<tr>
<th>Relative reduction from strict SBP control (&lt; 120 mm Hg) vs. standard SBP control (&lt; 140 mm Hg)</th>
<th>Dementia</th>
<th>MCI</th>
<th>Dementia or MCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>17%</td>
<td>19%*</td>
<td>15%*</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05
Trial showed that the Mediterranean diet slowed cognitive decline

**FIGURE 2.** A four-year study randomizing patients to a control diet or Mediterranean diet supplemented with olive oil (1 liter/week) or nuts (30 grams/day) found improvements in global cognition with olive oil.⁹

* FIGURE 3. Food pyramid for the Mediterranean diet

Healthful diets like the Mediterranean diet focus on fresh fruits and vegetables, whole grains, and fish and nuts, while lowering use of red meat, refined grains, and sugar.

Go to the American Heart Association website for a sample Mediterranean diet: www.bit.ly/AHA_diet
Identify and manage cognitive impairment

Should I screen all older adults for cognitive impairment?

No. The U.S. Preventive Services Task Force cites insufficient evidence to assess the harms and benefits for cognitive impairment screening in asymptomatic older adults.

Testing is recommended for patients with signs or symptoms of cognitive impairment.\textsuperscript{10}

**FIGURE 4.** A framework for managing patients with Alzheimer’s disease and related dementias

**Assess severity of cognitive impairment:**
- Use a tool such as the Mini-Cog (mini-cog.com), MMSE, or MoCA.
- Define the nature and severity of the problem with a detailed history and a cognitive and physical exam.

**Rule out reversible causes** (e.g., infection, metabolic abnormality, or drug side effects), using laboratory tests (e.g., complete blood count, Vitamin B12 level, and TSH) and structural brain imaging, as indicated.

**Counseling and education:** Talk with the patient and caregivers about the diagnosis and what can be expected. Initiate advance care planning.

**Maximize overall health**

**Manage cognitive impairment**
- Consider a trial of a cholinesterase inhibitor or memantine
- • Discuss home and driving safety
  • Support caregivers

**Manage behavior and psychological symptoms**

Encourage, review, and update advance care plans.
Medications play a limited role

Cholinesterase inhibitors and memantine offer benefits that are usually modest and time-limited, but side effects are common.

FIGURE 5. If a response occurs, it will usually occur within three months of starting treatment. Any modest improvements generally diminish after 6-12 months in most patients.\textsuperscript{11}

![Graph showing change in MMSE score over time with Donepezil and Placebo]

Time (weeks)

Change from baseline MMSE score

-8 -6 -4 -2 0 2

0 12 24 36 48 60 72 84 96 108 120

Better

Worse

Treatment effect 0.83 (SE 0.18), p<0.0001

When trying a cholinesterase inhibitor or memantine:

1 Start at a low dose and titrate based on patient tolerance.

No one cholinesterase inhibitor is better than another; there is no clear difference between cholinesterase inhibitors and memantine.\textsuperscript{12}

Combining donepezil with memantine provides no benefit over each agent alone at one year.\textsuperscript{13}

2 Monitor carefully for these common side effects:

<table>
<thead>
<tr>
<th>cholinesterase inhibitors</th>
<th>memantine</th>
</tr>
</thead>
<tbody>
<tr>
<td>• nausea, vomiting, diarrhea</td>
<td>• dizziness</td>
</tr>
<tr>
<td>• anorexia</td>
<td>• confusion</td>
</tr>
<tr>
<td>• dizziness</td>
<td>• headache</td>
</tr>
<tr>
<td>• bradycardia</td>
<td>• hypertension</td>
</tr>
</tbody>
</table>

3 Reassess at 3-6 months to determine if the risk-benefit relationship warrants continued treatment.
Identify and prioritize the patient’s wishes

Documenting the patient’s wishes can:
- allow patients to have more control of their care.
- avoid unnecessary or unwanted treatments.

POLST form
Encourage and assist patients who wish to place restrictions on care to complete a Pennsylvania Orders for Life-Sustaining Treatment (POLST) form: [www.bit.ly/POLST_form](http://www.bit.ly/POLST_form)

Advance care planning (ACP)
ACP is a continuous, dynamic process of reflection and dialogue between a person with dementia, those close to her or him, and their health care providers concerning the patient’s preferences and values in future treatment and care, including end-of-life care.¹⁴

Components of the ACP conversation for patients with dementia¹⁴,¹⁶

1. **Start the conversation early.** Ask the patient to talk about these issues with the people who will be making care decisions as the disease progresses.

2. **Discuss what to expect with the progression of dementia.**
   — Ensure safety for patients on the road and at home. Several organizations provide third party assessments of driving ability (e.g., [seniordriving.aaa.com](http://seniordriving.aaa.com)).

3. **Ask about the patient’s treatment preferences**, including end-of-life care.

4. **Document the ACP in writing.**
   — Encourage the patient to have a living will, health care proxy, medical directives, and power of attorney.

5. **Reassess patient needs and wishes when status changes** (e.g., a transition to a nursing facility).

Tools and resources
- [AlosaHealth.org/Dementia](http://AlosaHealth.org/Dementia)
- [theconversationproject.org](http://theconversationproject.org)
Reassess the goals of care for patients with advanced dementia

Advanced dementia includes profound memory deficits (e.g., inability to recognize family members), minimal verbal abilities, inability to walk independently, inability to perform any activities of daily living, and/or urinary or fecal incontinence.\(^{16}\)

**FIGURE 6.** Several common clinical situations are predictable in advanced dementia.\(^{17}\)

**Eating problems**
Many professional societies and groups recommend against tube feeding.\(^ {18-20}\)
Careful hand feeding for patient enjoyment may be an option for some patients.

**Pneumonia**
In patients with profound cognitive deficits in a nursing home, the 6-month mortality after pneumonia can be as high as 50%.\(^ {17}\)

**Goals of care commonly shift with dementia severity**

<table>
<thead>
<tr>
<th>Goals of care</th>
<th>mild dementia</th>
<th>severe dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>life-prolonging</td>
<td>e.g., hospitalization for pneumonia</td>
<td>e.g., fever-lowering medications</td>
</tr>
<tr>
<td>comfort only</td>
<td>e.g., antibiotics in a residential care setting</td>
<td></td>
</tr>
</tbody>
</table>
Address the behavioral and psychological symptoms of dementia (BPSD)

Sedating medications should not be a main strategy in these patients.

**TABLE 1.** The D.I.C.E. (Describe, Investigate, Create, and Evaluate) approach helps manage behavioral problems.²¹

<table>
<thead>
<tr>
<th>Describe</th>
<th>Investigate</th>
<th>Create</th>
<th>Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Characterize the behavior through discussions with the patient, caregivers, or proxies.</td>
<td>• Identify any immediate concerns about safety.</td>
<td>• Collaborate with caregivers and treatment team to create and implement a treatment plan.</td>
<td>• Assess whether the interventions are effective in addressing the target behavior(s). • If medications are used, evaluate periodically for side effects and symptom persistence.</td>
</tr>
</tbody>
</table>

**FIGURE 7.** Three points of leverage for applying non-drug interventions²¹

**Patient**
- Unmet needs (hunger, thirst, pain)
- Acute medical problems (infection, drug side effects)
- Sensory deficits (hearing, vision)

**Caregiver**
- Caregiver stress, burden, depression
- Lack of education about dementia (behaviors are a result of the disease, not “on purpose”)
- Communication issues; mismatch of expectations and dementia severity

**Environment**
- Over- or under-stimulating
- Unsafe environment
- Lack of activity
- Lack of structure or routines
Avoid routine use of risky medications to manage BPSD

The severity of the behavior should guide the management strategy.

**FIGURE 8.** Managing behavioral problems in older patients with cognitive impairment

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**Initiate non-drug approaches.**

**Are the symptoms:**
- severely disruptive?
- dangerous?
- distressing?

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**Non-acute BPSD (common)**

**Drug therapy is rarely required.**
- Focus on non-drug interventions.
- SSRIs may have a limited role:
  - consider sertraline (Zoloft), escitalopram (Lexapro).
  - avoid fluoxetine (Prozac), citalopram (Celexa), paroxetine (Paxil).
- Avoid antipsychotic medications if possible.

**Acute BPSD (rare)**

**Drug therapy may be required for:**
- physical aggression
- violent behavior
- hallucinations or delusions that are distressing to the patient
- self-harm

In rare situations when dangerous or distressing behaviors require an antipsychotic medication (APM), initiate with caution:22,23

1. Identify and document the behavior being targeted.
2. Start the APM on a trial basis for a limited duration.
3. Start at the lowest dose and monitor for side effects.
4. Evaluate the efficacy of the drug in addressing the targeted behaviors.
5. Stop the APM after the trial period and re-assess the patient.

**Randomized trials show that for every 100 patients with dementia treated with an APM for 10-12 weeks, one will die due to a drug-related side effect.**24
### Costs

**FIGURE 9.** Price of a 30-day supply of medications to manage dementia

<table>
<thead>
<tr>
<th>Cholinesterase inhibitors</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>donepezil 7.5 mg (generics)</td>
<td>$24</td>
<td>$272</td>
<td>$959</td>
<td></td>
</tr>
<tr>
<td>donepezil 7.5 mg (Aricept)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>donepezil 23 mg (generic)</td>
<td></td>
<td></td>
<td>$455</td>
<td></td>
</tr>
<tr>
<td>donepezil 23 mg (Aricept)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>galantamine 16 mg (generic)</td>
<td>$161</td>
<td>$324</td>
<td></td>
<td></td>
</tr>
<tr>
<td>galantamine 16 mg (Razadyne)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>galantamine ER 16 mg (generic)</td>
<td>$141</td>
<td>$324</td>
<td></td>
<td></td>
</tr>
<tr>
<td>galantamine ER 16 mg (Razadyne ER)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rivastigmine 9 mg (generic)</td>
<td>$126</td>
<td>$347</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rivastigmine 9 mg (Exelon)</td>
<td></td>
<td></td>
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<tr>
<td>rivastigmine 9.5 mg patch (generic)</td>
<td>$330</td>
<td>$753</td>
<td></td>
<td></td>
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<tr>
<td>rivastigmine 9.5 mg patch (Exelon)</td>
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<table>
<thead>
<tr>
<th>NMDA receptor antagonist</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>memantine 20 mg (generic)</td>
<td>$28</td>
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<td>$522</td>
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</tr>
<tr>
<td>memantine 20 mg (Namenda)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>memantine XR 28 mg (generic)</td>
<td>$297</td>
<td>$556</td>
<td></td>
<td></td>
</tr>
<tr>
<td>memantine XR 28 mg (Namenda XR)</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>combinations</th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>donepezil 10 mg + memantine 28 mg (Namzaric)</td>
<td>$579</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dextromethorphan 40 mg + quinidine 40 mg (Nuedexta)</td>
<td></td>
<td></td>
<td>$1,459</td>
<td></td>
</tr>
</tbody>
</table>

Prices from goodrx.com, March 2020. Listed doses are based on Defined Daily Doses by the World Health Organization and should not be used for dosing in all patients. These prices are a guide; patient costs will be subject to copays, rebates, and other incentives.

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**Caregiver support**

Coping classes can reduce anger and depression and increase self-efficacy. Caregiver resources and support groups:

- **Visit the Caregiver Center at alz.org:**
  alz.org/help-support/caregiving
- **Contact your local Area Agency on Aging:**
  aging.pa.gov/local-resources

**Visit AlosaHealth.org/Dementia** for more resources and a detailed evidence document.
Key points

Implement interventions that may prevent dementia

• Controlling elevated blood pressure can reduce the likelihood of cognitive impairment.
• There is some evidence that adopting a Mediterranean diet can reduce the risk of dementia.
• Exercise will improve overall health, but its effect on preventing dementia is less clear.

Assess and treat dementia symptoms

• In patients with symptoms, look for and address any reversible causes of cognitive impairment.
• Assess for dementia using a tool such as the Mini-Cog.
• Cholinesterase inhibitors and memantine may slightly slow cognitive decline in some patients with dementia, but the effects are modest and time-limited.
• The risk of side effects from cholinesterase inhibitors and memantine limit their use; continuously reassess risk and benefit from these drugs.

Plan for disease progression

• Begin advance care planning conversations early: engage patients and caregivers in completing a living will, medical directives, and other financial and legal safeguards.
• Discuss driving safety, especially as dementia advances.
• Identify triggers for behavioral and psychological symptoms of dementia and work with caregivers to limit exposure to triggers. Reserve antipsychotic medications for dangerous situations.
• Support caregivers to maintain their own health. Encourage self-care.

References:

About this publication

These are general recommendations only; specific clinical decisions should be made by the treating clinician based on an individual patient's clinical condition. More detailed information on this topic is provided in a longer evidence document at AlosaHealth.org.

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This material was produced by Dae Kim, M.D., Sc.D., Associate Professor of Medicine (principal editor); Michael A. Fischer, M.D., M.S., Associate Professor of Medicine; Jerry Avorn, M.D., Professor of Medicine, all at Harvard Medical School; and Ellen Dancel, PharmD, M.P.H., Director of Clinical Materials Development at Alosa Health. Drs. Avorn and Fischer are physicians at the Brigham and Women’s Hospital, and Dr. Kim practices at the Beth Israel Deaconess Medical Center and Hebrew Senior Life, all in Boston. None of the authors accepts any personal compensation from any drug company.

Medical writer: Stephen Braun