

Healthy Aging Part 2: Dementia Basics

100...93...86...79...??? Serial 7's. Can you do 'em? How fast? With no mistakes?

Due to the aging of the demographic bolus we call the "baby boom," increasing proportions of us struggle with tasks like this, hallmarks of dementia.

Cognitive impairment—along with depression, which often presents concurrently—represents the most common challenge to optimal mental well-being and function in older people.¹ In the previous issue of the *CD Summary*, we presented information on physical health and social well-being of older Oregonians. In this issue, we focus on cognitive function, providing a quick overview of dementia and strategies for maintaining cognitive function courtesy of the "Healthy Brain Initiative."²

WHAT IS DEMENTIA?

Dementia is a disorder characterized by a decline in one or more cognitive domains (learning and memory, language, executive function, complex attention, perceptual-motor, social cognition). The deficits must represent a decline from previous level of function and be severe enough to interfere with daily activities and independence.³ Most dementia (60%–80%) is caused by Alzheimer's disease; that leaves 20%–40% due to other diseases and conditions (Box; Table, *verso*.)

HOW COMMON?

During 2011, 21 states (not including Oregon) included an optional module on memory loss and confusion in their statewide Behavioral Risk Factor Surveillance telephone survey. Among respondents aged ≥60 years, 13% reported increased confusion or memory loss within the previous 12 months, and 35% of those reported that confusion or memory loss had caused functional declines in their ability to

do work, engage in social activities, or complete their household activities.^{4*}

Alzheimer's disease is the 6th leading cause of death in the U.S., accounting for 3.6% of all deaths; deaths from Alzheimer's disease have increased 50% since 1999.⁵ In Oregon, mortality from Alzheimer's disease almost doubled from 23 deaths per 100,000 population in 1996, to 41 in 2015, likely due to the aging of the population (Figure, *verso*).

SCREENING

In 2011, Medicare added an Annual Wellness Visit, including a cognitive assessment, as a benefit.⁶ Nonetheless, the United States Preventive Services Task Force (USPSTF) has not concluded that sufficient evidence exists to recommend routinely screening older adults for dementia,⁷ although the USPSTF did find that some screening tools are useful in diagnosing dementia. The Mini-Mental State Exam is the most widely used cognitive test for dementia in the U.S. MMSE's copyright holders charge a fee for using it; consequently several other validated brief screening tools are gaining popularity. (See Resources below.)

DIAGNOSIS

All patients with significant cognitive decline should undergo a thorough evaluation, including history, clinical examination, and laboratory and radiographic studies. Neuropsychiatric evaluations can help in patients with mild or atypical symptoms. Though Alzheimer's disease causes the largest portion of dementia in older adults, other causes should be ruled out, since some of those can be treated to prevent further decline. Treatable causes of cognitive decline include vascular dementia, heavy metal poisoning, vitamin efficiency, thyroid disease, syphilis and other CNS infections, anemia,

*And dementia is probably more common since those with severe impairment aren't answering the phone.

MATCH: Dementia type to associated cause or clinical presentation.

Type of dementia

- Alzheimer's disease
- Dementia with Lewy bodies
- Frontotemporal dementia
- Vascular dementia
- Parkinson's disease with dementia

Causes and presentations

- This form of dementia has many primary causes, including smoking, hypertension, diabetes and hyperlipidemia.
- Prevalence of this condition doubles every 5 years after the age of 65 years. It profoundly affects declarative episodic memory — memory of events occurring at a specific time and place.
- Dementia often surpasses the commonly known physical symptoms and signs of this disease.
- Impairments in attention and visual-spatial processing typically appear earliest in this disease, the second most common cause of dementia.
- Also known as Pick's disease, this condition prominently affects social behavior and personality.

Answers: 1-d, 2-a, 3-e, 4-b, 5-c.

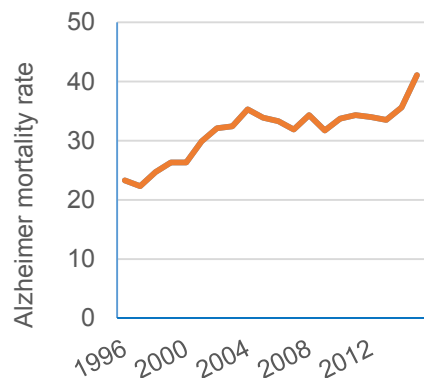
unrecognized epilepsy, and depression (Table, *verso*).

TREATMENT

Dementia treatment depends on the underlying cause. Although Alzheimer's disease lacks a cure, acetylcholinesterase inhibitors (tacrine, rivastigmine, galantamine and donepezil) can temporarily improve cognition in patients with mild to moderate impairment, but not the long-term prognosis or slope of decline.⁸ (And they do have side effects.†) Memantine is an N-methyl-D-Aspartate (NMDA) receptor antagonist shown to slightly reduce the rate of decline in

† And who among us can possibly forget "SLUDGEM?" (Salivation, lacrimation, urination, defecation, gastrointestinal motility, emesis, miosis, all caused by cholinesterase inhibitor poisoning.)

Figure. Alzheimer's disease mortality rate Oregon, 1996–2015



people with moderate to severe cognitive impairment.⁹ The jury remains out on expected benefit from Vitamin E, but no significant evidence of harm has emerged from clinical trials.¹⁰ Nonpharmacologic interventions for Alzheimer's disease and other forms of dementia include cognitive training, lifestyle behavioral interventions, exercise, educational interventions, and multidisciplinary care interventions.

PREVENTION

One can prevent vascular dementia by avoiding smoking, lowering low-density lipoproteins, maintaining a desirable blood pressure and exercising regularly. Unfortunately, no definitively effective prevention strategies have emerged for other causes of dementia, including Alzheimer's disease. Observational studies (perhaps most memorably the serendipitous discovery that nuns who kept up a *habit* of daily contemplative writing were less likely to sustain cognitive declines years later) find that intellectual activities such as reading, playing board games, playing musical instruments or learning a second language, regular social interaction, and physical activity correlate with cognitive ability.

CAREGIVER HEALTH

Cognitive impairment clearly has a direct impact on the patients themselves. Perhaps underappreciated is the impact that dementia has on family members and caregivers. Nationally, 80% of caregivers for patients with dementia are family members. These caregivers report providing care for an average of 4.6 years. As physical life span increases, we can expect that time spent caregiving for people with dementia will also increase. These caregivers are at greater risk for anxiety, depression, and poorer quality of life than caregivers of patients with other chronic diseases.²

HEALTHY BRAIN INITIATIVE

While preventing the development of Alzheimer's disease may be elusive, CDC and the Alzheimer's Association have partnered on a "Healthy Brain Initiative," with the goal of reducing the morbidity and costs associated with, and maintaining or enhancing the quality of life for, persons with dementia, including Alzheimer's disease.² Concretely, this means working to reduce functional limitations, improve physical activity, and provide support for caregivers, which can delay institutionalization of persons with dementia.

While the Healthy Brain Initiative sets out a framework for addressing dementia as an increasing public health problem, it is clear that research and evidence-based practice are urgently needed to ensure that we can increase not only physical longevity, but maintain a high quality cognitive function and social life as well.

RESOURCES

- Centers for Disease Control and Prevention www.cdc.gov/aging/aginginfo/index.htm
- National Institute on Aging www.nia.nih.gov
- Alzheimer's Association of Oregon www.alz.org/oregon/
- Aging and Disability Resource Connection of Oregon (ADRC): www.adrcforegon.org/consite/index.php
- Oregon Department of Human Services, Services for Seniors & People with Disabilities www.oregon.gov/DHS/seniors-disabilities/Pages/index.aspx

Screening and diagnostic tools

- Mini-cog (no fee): www.alz.org/documents_custom/minicog.pdf

- Montreal Cognitive Assessment (no fee): http://dementia.ie/images/uploads/site-images/MoCA-Test-English_7_1.pdf
- General Practitioner Assessment of Cognition (no fee): [www.alz.org/documents_custom/gpcog\(english\).pdf](http://www.alz.org/documents_custom/gpcog(english).pdf)
- Memory Impairment Screen (no fee): www.alz.org/documents_custom/mis.pdf
- Mini Mental State Exam (permission required; use fee): <http://www4.parinc.com/Products/Product.aspx?ProductID=MMSE#Items>

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Table. Features of cognitive impairment due to causes other than Alzheimer's disease (adapted from Kawas¹)

Feature	Frequent Cause
Abrupt onset, stepwise deterioration	Vascular dementia
Prominent behavioral changes, profound apathy	Frontotemporal dementia
Prominent aphasia	Vascular dementia, Frontotemporal dementia
Progressive gait disorder	Vascular dementia, Hydrocephalus
Prominent fluctuations in level of consciousness or cognition	Delirium caused by infection, medications or other causes, Dementia with Lewy bodies, Seizures
Hallucinations or delusions	Delirium caused by infection, medications or other causes, Dementia with Lewy bodies
Extrapyramidal signs or gait	Parkinsonian syndromes, Vascular dementia
Eye-movement abnormalities	Progressive supranuclear palsy, Wernicke's encephalopathy



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