



Managing Memory, Maximizing Care: Approaches for Cognitive Decline in Dentistry

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Disclosure Statement

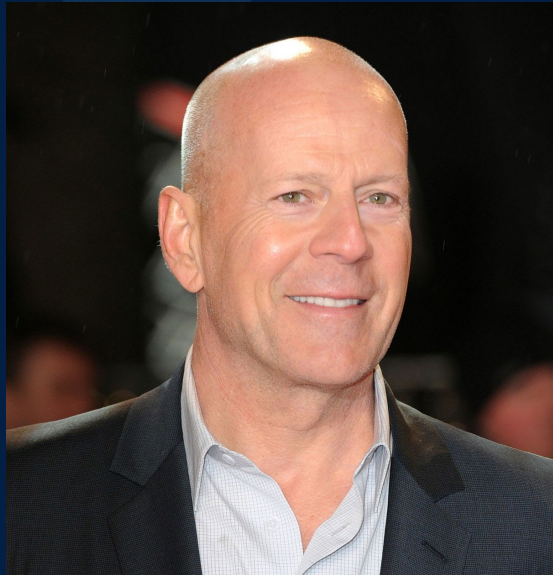
The speakers do not have any financial interests or relationships with any manufacturers of products or providers of services that are discussed in the presentation.

Learning Objectives

Equip dentists with practical strategies to deliver safe, ethical, and compassionate care to patients with dementia.

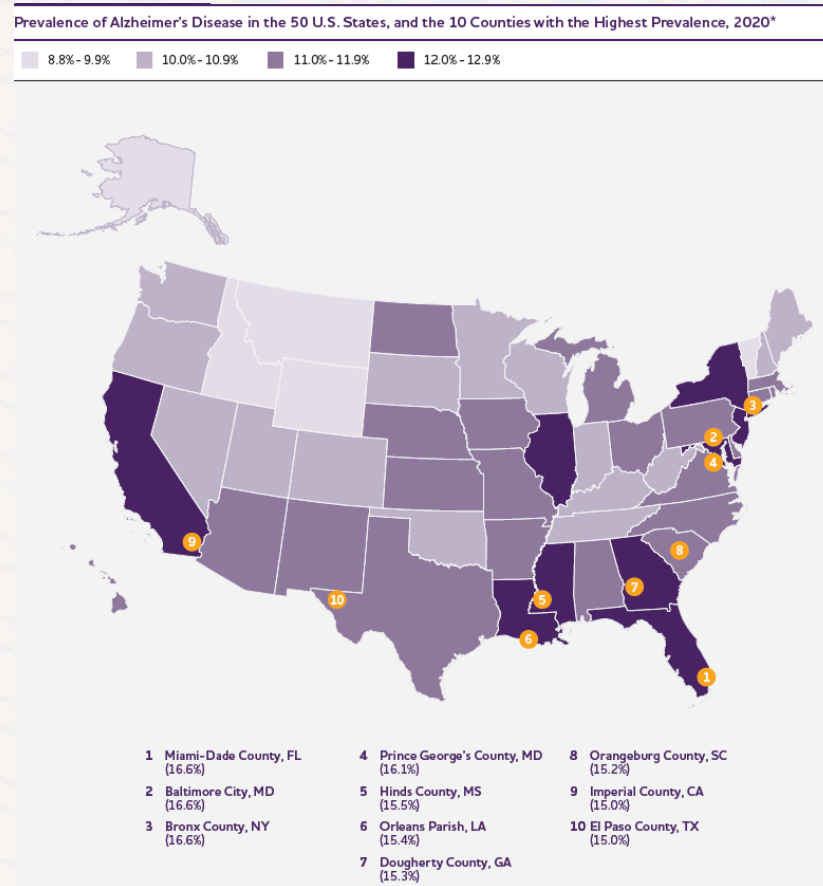
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- ✓ Identify at least three signs of cognitive decline in a dental setting
 - ✓ Describe how to document and communicate these findings effectively in the patient record
 - ✓ Apply dementia-sensitive communication and behavioral management strategies to improve patient cooperation, safety, and comfort during dental care

When Memory Fades, Stories Still Shine



Dementia in the Dental Setting

Prevalence and impact on oral health



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Periodontitis and brain magnetic resonance imaging markers of Alzheimer's disease and cognitive aging

Tom Rubinstein, Adam M. Brickman, Bin Cheng, Sandra Burkett, Heekuk Park, Medini K. Annavajhala, Anne-Catrin Uhlemann, Howard Andrews, Jose Gutierrez, Bruce J. Paster ... [See all authors](#) ▾

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Research Article

Clinical and Bacterial Markers of Periodontitis and Their Association with Incident All-Cause and Alzheimer's Disease Dementia in a Large National Survey

May A. Beydoun^{a,*1}, Hind A. Beydoun^b, Sharmin Hossain^a, Ziad W. El-Hajj^c, Jordan Weiss^d, and Alan B. Zonderman^a



cognitive decline in texas

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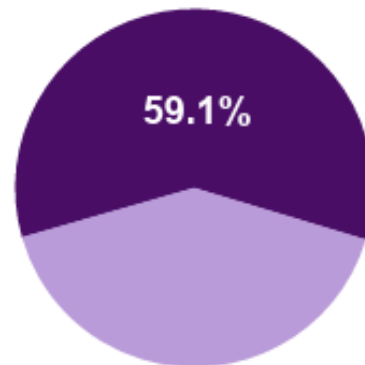
DATA FROM THE 2019 BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

In Texas, 11.7% — 1 in 9 — of those aged 45 and over report they are experiencing confusion or memory loss that is happening more often or is getting worse (“subjective cognitive decline”).

More than half of them have not talked to a health care professional about it.

For those with worsening memory problems, 59.4% say it has created “functional difficulties” — that is, caused them to give up day-to-day activities and/or interfered with work or social activities.

Percent with memory problems who have not talked to a health care provider



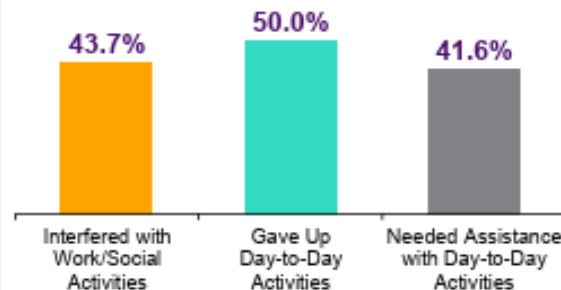
Texas State Plan for Alzheimer's Disease 2024-2028

As Required by
Texas Health and Safety Code, Sections
99A.001 and 99A.004

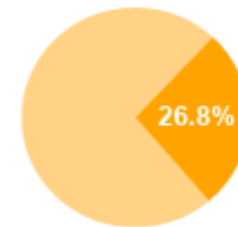
Percent of Those Aged 45+ with Subjective Cognitive Decline

All	Gender		Age					Educational Attainment			
	Men	Women	45-59	60-64	65-74	75-79	80+	< High School	High School	Some College	College Grad
11.7%	9.8%	13.4%	12.2%	8.8%	9.4%	16.8%	17.4%	17.4%	13.8%	10.6%	7.5%

Percent with memory problems who say it created difficulties and burden

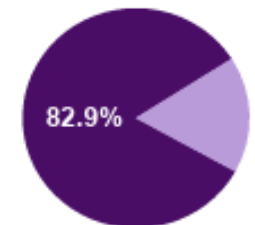


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Percent with memory problems who live alone

Percent with memory problems who have at least one other chronic condition*



*Defined as arthritis, asthma, COPD, cancer, cardiovascular disease, and diabetes

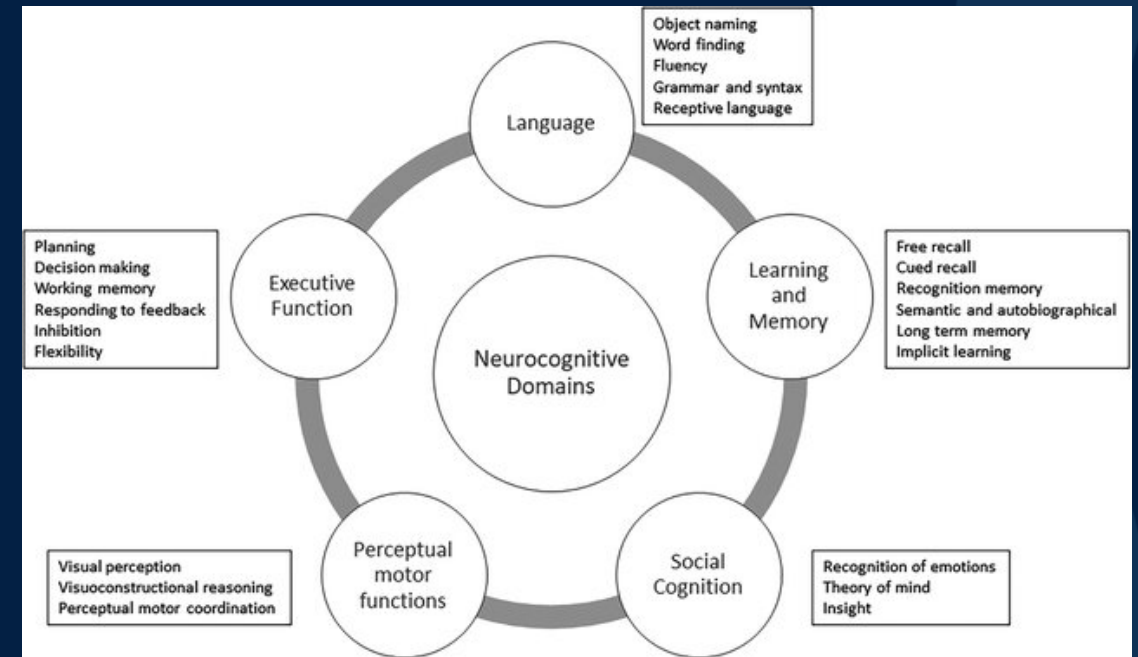
Cognitive Domains and Subtypes

Recognizing Cognitive Decline Across Conditions

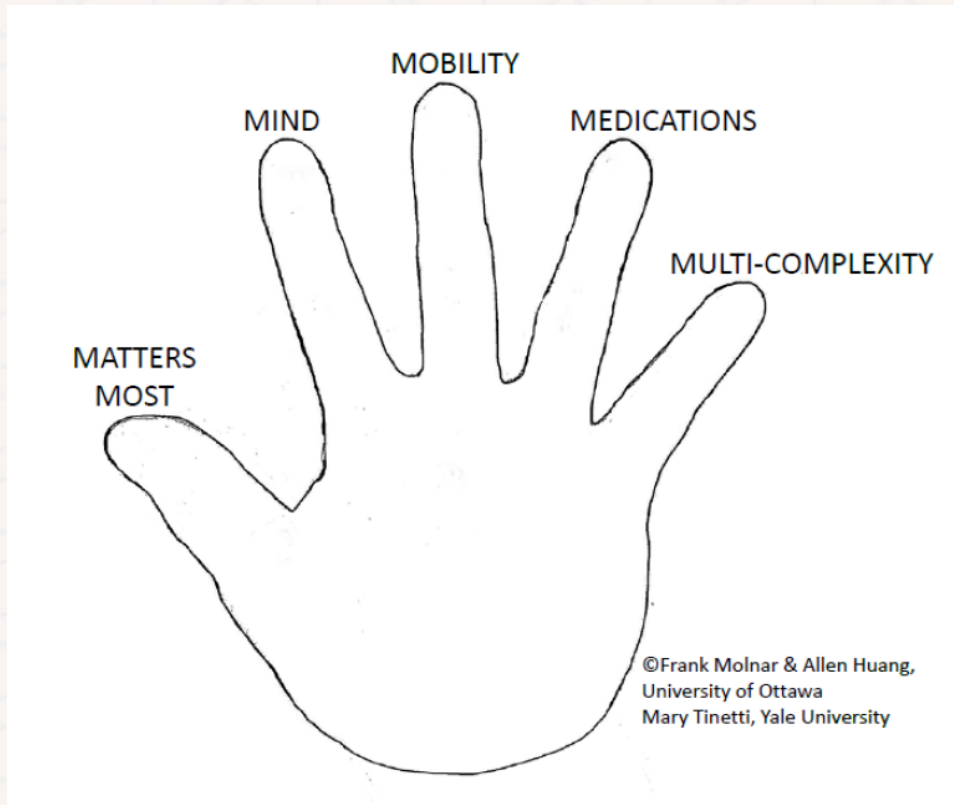
- IC CODE (Norman et al., 2021) highlights that cognitive disorders present differently depending on the neurological condition.
- Understanding these cognitive domains is essential in assessing cognitive impairment and differentiating between normal aging, mild cognitive impairment, and dementia.

Clinical Relevance

- Similarly, in dentistry, missed recognition of dementia-related decline can compromise *oral hygiene, consent, treatment cooperation, and long-term outcomes.*



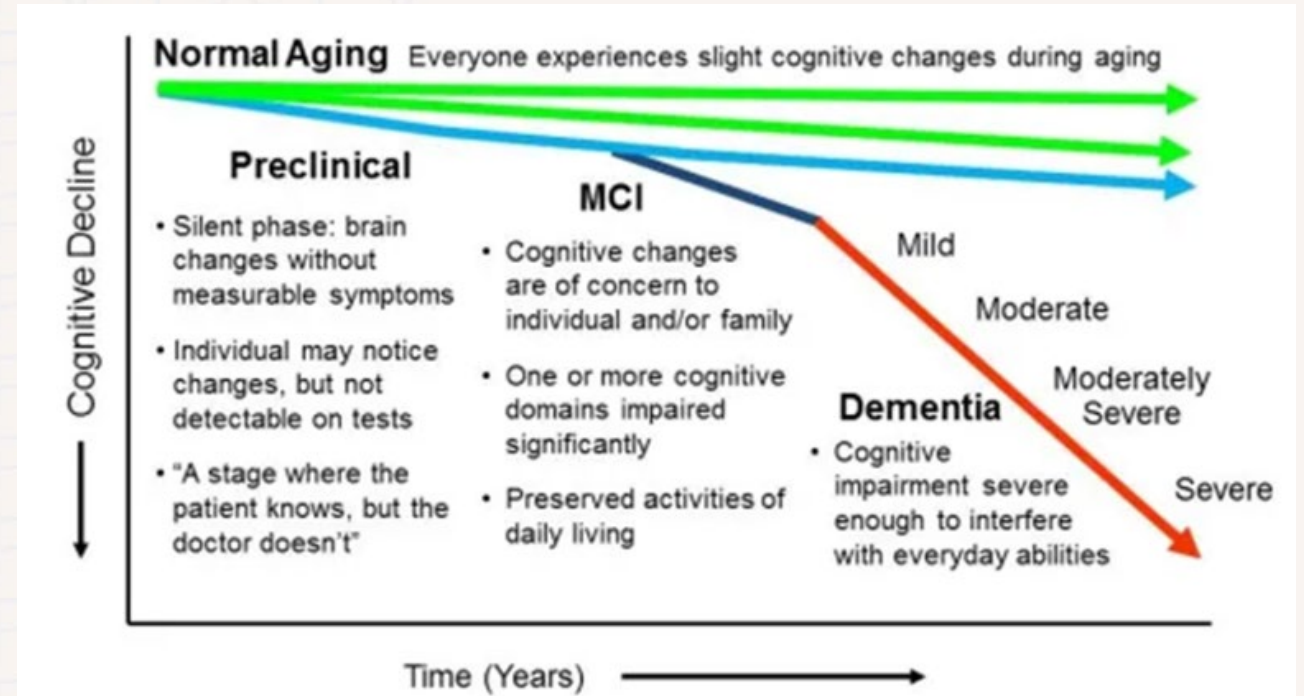
Normal Aging vs Cognitive Impairment



- Normal aging
Primarily declines in processing speed
- Mild cognitive impairment
Cognitive decline
Doesn't interfere with independent function
- Dementia
Substantial cognitive decline
Deficits **impact function**

Mild Cognitive Impairment

- MCI is an **acquired persistent disorder** usually affecting one cognitive domain (most often memory)
- Causes objective performance below the normal values for the individual's age
- **Can function independently and stay active socially**
- Diagnosed by excluding other conditions that might be causing the signs and symptoms
- There is a high risk of developing dementia from MCI, but the variation is unclear



<http://mind.uci.edu/dementia/mild-cognitive-impairment>

Depression and Dementia

DEPRESSION	DEMENTIA
Cognitive decline is relatively rapid	Cognitive decline happens slowly
Knows the correct time, date, and where he or she is	Confused and disoriented; becomes lost in familiar locations
Difficulty concentrating	Difficulty with short-term memory
Language and motor skills are slow, but normal	Writing, speaking, and motor skills are impaired
Notices or worries about memory problems	Doesn't notice memory problems or seem to care



Delirium

Delirium affects 15 to 50% of hospitalized people aged 70 or older

- A **temporary state** of mental confusion and fluctuating consciousness
- Characterized by anxiety, disorientation, hallucinations, delusions, and incoherent speech
- Evoked by an event or cause
(Ex: fever, medication, altered electrolytes, thyroid hormone high or low, **hospitalization**)



Comparing Delirium & Dementia

FEATURE	DELIRIUM	DEMENTIA
Development	Sudden, sometimes with a definite beginning point	Slow, with an uncertain beginning point
Cause	Almost always with another condition	Usually, a brain disorder
Early Symptom	Inability to pay attention	Loss of memory, esp. recent events
Effect at night	Almost always worse	Often worse
Surroundings	Varies	Impaired
Effect on language	Slowed speech, often with incoherent and inappropriate language	Sometimes difficulty finding the right word
Memory	Varies	Lost, especially for recent events
Progression	Causes variations in mental function people are alert one moment and sluggish and drowsy the next	Slowly progresses, gradually but eventually greatly impairing all mental functions
Duration Days	Days to weeks, sometimes longer	Almost always permanent
Treatment	Immediate	Needed but less urgently

Dementia

Patient shown picture. Asked, "Which is the happy face?"



Patient answers, "I don't know, they are all the same"

Dementia is a persistent or progressive decline in two or more cognitive domains that interfere with activities of daily living

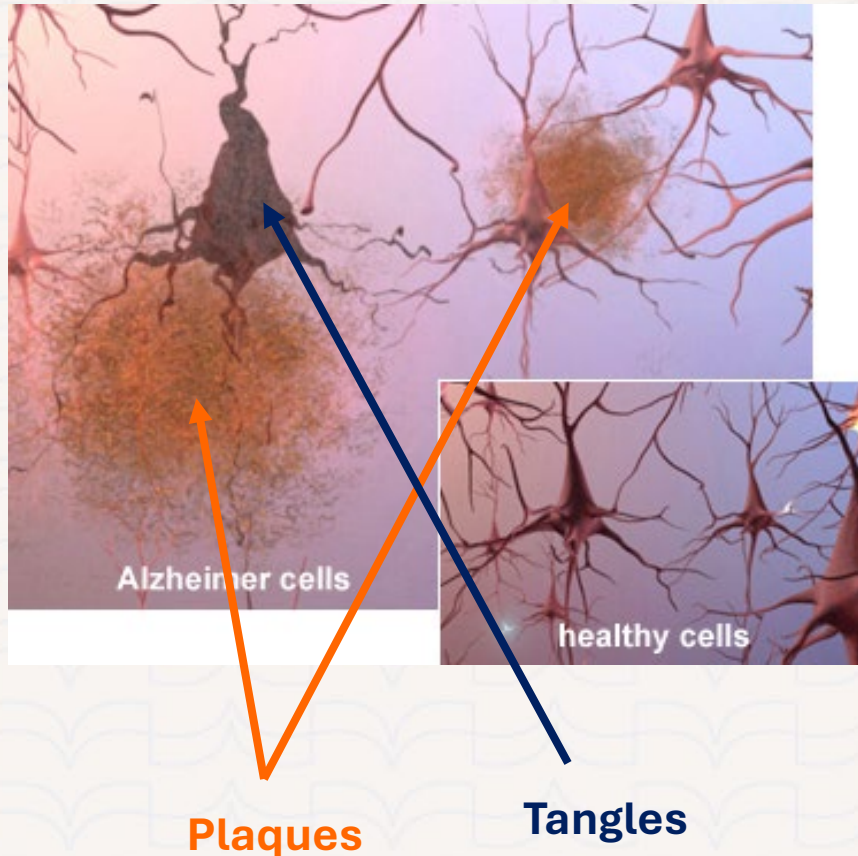
Cognitive Domains include learning, attention/concentration, memory, language, executive functioning, visual perception, motor functioning, personality functioning

Dementia is a disorder, not a part of normal aging

Types of dementia

	Dementia Type	Primary Cause	Key Symptoms	Progression Rate	Incidence Rate
1	Alzheimer's Disease	Beta-amyloid plaques & Tau tangles	Memory loss, confusion, disorientation, personality changes	Gradual (over years)	60-70% of dementia cases
2	Vascular Dementia	Blood vessel damage, strokes	Difficulty planning, slowed thinking, mood changes, stepwise decline	Stepwise (depends on strokes)	10-20% of dementia cases
3	Lewy Body Dementia	Alpha-synuclein protein deposits (Lewy bodies)	Visual hallucinations, fluctuating cognition, Parkinsonian	Fluctuating but progressive	5-10% of dementia cases
4	Frontotemporal Dementia	Frontal & temporal lobe degeneration	Behavioral changes, personality shifts, poor judgment, speech problems	Gradual but faster than AD	5-10% of dementia cases
5	Mixed Dementia	Combination of AD, vascular, or Lewy body pathology	Symptoms of AD + vascular or Lewy body dementia	Varies depending on types involved	10-15% (combination of types)
6	Parkinson's Disease Dementia	Lewy bodies in Parkinson's disease	Slow movement, rigidity, tremors, cognitive decline	Gradual, follows Parkinson's progression	Up to 80% of Parkinson's patients develop dementia

Alzheimer's disease



Brain tissue under the microscope:

- ✓ Alzheimer tissue has many fewer nerve cells and synapses than a healthy brain.
- ✓ **Plaques**, abnormal clusters of protein fragments, build up between nerve cells.
- ✓ Dead and dying nerve cells contain **tangles**, which are made up of twisted strands of another protein.

Scientists are unsure what causes cell death and tissue loss in the Alzheimer brain, but **plaques** and **tangles** are prime suspects.

Geriatric Evaluation Overview

Performance-based screening tools designed for measuring cognitive issues in older adults

Mini Mental State Exam-the most common tool

<http://www.fammed.usouthal.edu/Guides&JobAids/Geriatric/MMSE.pdf>

Lawton IADL scale

Katz ADL scale

Stanford Health Assessment Questionnaire

- 8-item Disability Index

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC165587/>

Rapid Cognitive Screening Tools with Comparable Performance in Detecting Mild NCD

- Mini-Cog

[\(https://mini-cog.com/mini-cog-instrument/standardized-mini-cog-instrument/\)](https://mini-cog.com/mini-cog-instrument/standardized-mini-cog-instrument/)

- Clock Drawing Test

- Three-Item Recall Test: in Older Patients

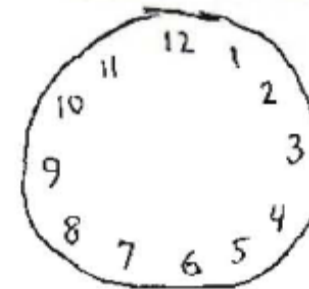
C. Memory

Doctor: "Here are three objects: a pipe, a pen and a picture of Abraham Lincoln. I want you to remember them and in 5 minutes, I will ask you what they were"



5 minutes later.
Patient: "I'm sorry, I can't remember. Did you show me something?"

"Draw a clock face for me"



Good



Abnormal

Recognizing Cognitive Decline

Pre-diagnosis:

- ☐ No cognitive decline, normal function, no memory loss
- ☐ Not noticeable at this stage

Early/Mid:


- ☐ Mild cognitive decline, forgetting recent events, struggling with words, losing track of days/dates, problems with distance and balance, reduced social interactions





Clinical Staging for Individuals on the Alzheimer's Disease Continuum

Stage 0 Asymptomatic, deterministic gene*	No evidence of clinical change. Biomarkers in normal range.
Stage 1 Asymptomatic, biomarker evidence only	Performance within expected range on objective cognitive tests. No evidence of recent cognitive decline or new symptoms.
Stage 2 Transitional decline: mild detectable change, but minimal impact on daily function	Normal performance within expected range on objective cognitive tests. Decline from previous level of cognitive or neurobehavioral function that represents a change from individual baseline within the past one to three years, and has been persistent for at least six months. May be documented by evidence of subtle decline on longitudinal cognitive testing, which may involve memory or other cognitive domains but performance still within normal range. May be documented through subjective report of cognitive decline. May be documented with recent-onset change in mood, anxiety and/or motivation not explained by life events. Remains fully independent with no or minimal functional impact on activities of daily living (ADLs).
Stage 3 Cognitive impairment with early functional impact	Performance in the impaired/abnormal range on objective cognitive tests. Evidence of decline from baseline, documented by the individual's report or by an observer's (e.g., study partner) report or by change on longitudinal cognitive testing or neurobehavioral assessments. Performs daily life activities independently but cognitive difficulty may result in detectable functional impact on complex ADLs (i.e., may take more time or be less efficient but still can complete — either self-reported or corroborated by an observer).
Stage 4 Dementia with mild functional impairment	Progressive cognitive and mild functional impairment on instrumental ADLs, with independence in basic ADLs.
Stage 5 Dementia with moderate functional impairment	Progressive cognitive and moderate functional impairment on basic ADLs requiring assistance.
Stage 6 Dementia with severe functional impairment	Progressive cognitive and functional impairment, and complete dependence for basic ADLs.

Cognitive Warning Signs


- Trouble remembering conversations and appointments
- “Poor historian”
- Coming to appointments at wrong time or day
- Failing to follow instructions, esp. with medications
- Deferring to family members to answer questions during visits
- Increasing difficulty with self-care, bathing, safety, nutrition
- Unexplained weight loss or vague symptoms (dizziness, weakness)
- Getting lost in familiar places





SUBSCRIBE

B. Smith, Restaurateur And Lifestyle Icon, Dies At 70 Of Early Onset Alzheimer's

February 24, 2020 · 4:46 AM ET
Heard on [Morning Edition](#)


 KAREN GRIGSBY BATES

 3-Minute Listen [+ PLAYLIST](#)  

The world is less generous and less welcoming because B. Smith, former model, entertainer and lifestyle doyenne, has left it.

At age 70, Smith succumbed to early onset Alzheimer's, which she had been battling for years. She died Saturday at her Long Island home with family nearby.

Plenty of media have described Smith as the “[black Martha Stewart](#).” And superficially, one could see why: Both women had been models (Smith appeared on the covers of several fashion magazines, the first brown-skinned black model to be featured on *Mademoiselle's* cover in the 1970s). Both had a genius for cooking and entertaining. Both eventually built an empire based on their skills (food, decorating, entertaining, home keeping). And when people (mostly white people) called Smith the black Martha, they meant it as a



Barbara Elaine Smith, better known as B. Smith, began her career as a model, going on to be a restaurateur, celebrity chef, author, entertainer and lifestyle doyenne.

Cognitive clues in the dental setting

Routinely assess cognitive status

Warning signs during patient interactions

Signs and Symptoms of Alzheimer's disease and related dementias

1. Memory loss that disrupts daily life
2. Challenges in planning or solving problems
3. Difficulty completing familiar tasks
4. Confusion with time or place
5. Trouble understanding visual images and spatial relationships
6. New problems with words in speaking or writing
7. Misplacing things and losing the ability to retrace steps
8. Decreased or poor judgement
9. Withdrawal from work or social activities
10. Changes in mood and personality

Assessing Capacity: The four C's

- Context: Understanding the situation
- Choices: Ability to express options
- Consequences: Understanding outcomes
- Consistency: Stability of decisions over time

**“Not knowing where I am
doesn't mean I don't know what I like”
- Mozley et al. 1999**



[Int J Geriatr Psychiatry](#). 1999 Sep;14(9):776-83.

'Not knowing where I am doesn't mean I don't know what I like': cognitive impairment and quality of life responses in elderly people

C G Mozley ¹, P Huxley, C Sutcliffe, H Bagley, A Burns, D Challis, L Cordingley

Affiliations + expand

PMID: 10479750

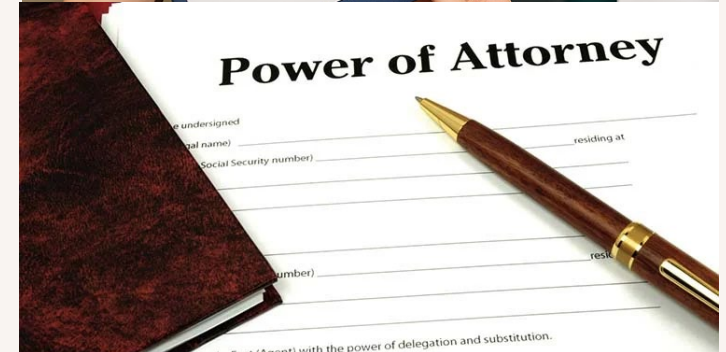
Informed Consent and Decision-Making

- Signs decision-making capacity may be lacking:
 - Lack of comprehension of relevant information
 - The ability to identify or state risks and benefits of dental treatment is unclear
 - Impaired communication of a choice, or rational manipulation of information in context
- Role of caregivers and legal proxies
- Substitute judgment vs. best interest standard
- Documentation



Informed Consent

- **Competency** is a legal term only determined by the courts
- **Decision-making capacity** is what pt needs to provide informed consent
- Effective informed consent:
 - Education of oral disease and progression
 - Treatment options including risks, benefits, cost and prognosis, and the consequences of electing no treatment
 - Disclosure of all facts related to the treatment interventions and comprehension by the patient of all relevant information
 - Needs to be voluntary
 - **Consent must be given by a patient who has the capacity to participate in the process**
 - Decision needs to be documented

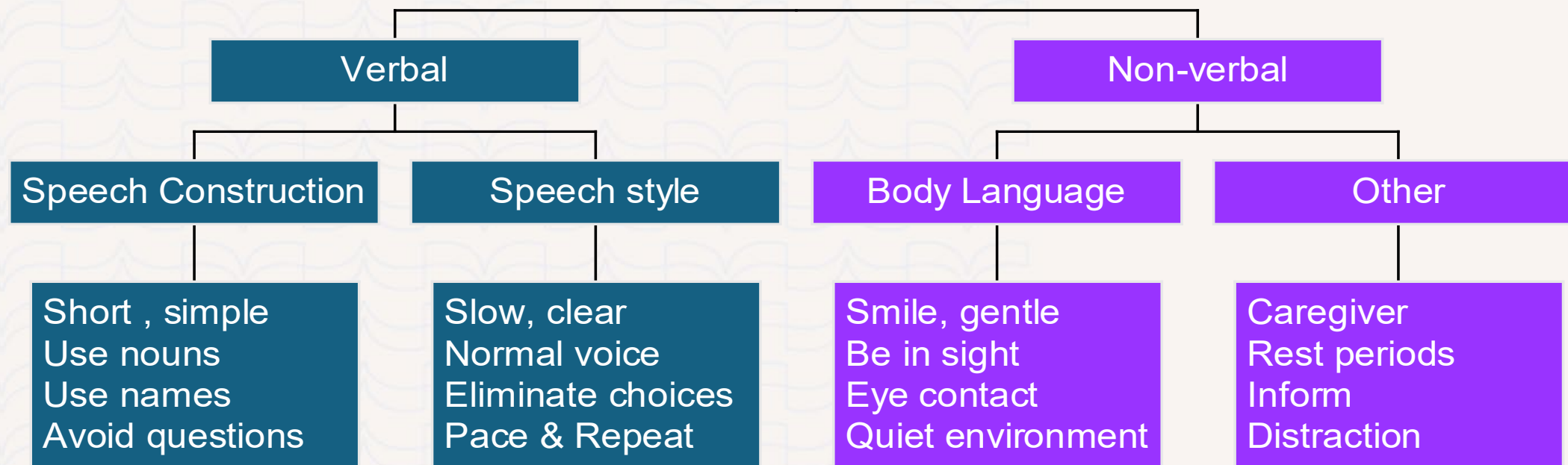


Medical & Financial Arrangements

- Dental office need to keep a copy of medical power of attorney, guardianship, and/or financial power of attorney
- If there is any doubt to pt having capacity to making treatment decisions, **treatment needs to be delayed**, and medical evaluation needs to be scheduled
- As is common among geriatric patients even with capacity, some do have FPOA arrangements and these can be written in a way to restrict anyone else getting to the patient's funds, including the patient
- **Keep in mind when the patient, MPOA, or Guardian consents, they may be consenting to treatment, but not payment**



Communication Skills



Behavior Management in the chair

- Medical History
- Determine Level of Impairment

Recognize triggers of agitation (noise, lighting, time of day)

Strategies:

Early appointments
Simplified procedures
Caregiver involvement
Calm, reassuring tone



With advancing dementia, patient more likely to exhibit:

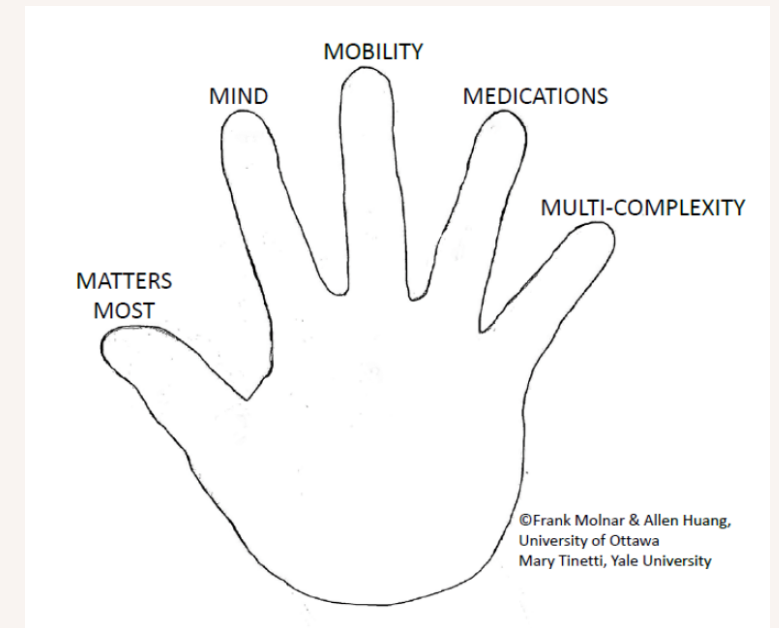
Withdrawal
Overactive hands
Screaming
Perceptive alterations
Aggression

Dental team may consider:

Communication Skills
Medical
immobilization/protective
stabilization (*Restraint*)
Help from family member
or caregiver

Dental Management: Goals of Treatment

- Develop timely, preventive and therapeutic strategies compatible with patient's physical and functional ability
- Be aware of patient's social, psychological and emotional needs and desires
- Maintain ethical, moral and professional standards of care



Oral Treatment Considerations

Develop preventive and therapeutic strategies compatible with the patient's physical and functional ability

- Restore caries lesions under crowns or redo crown?
- Reline denture or fabricate a new denture?
- Extract teeth with chronic periapical radiolucencies if the patient exhibits no symptoms of discomfort?



Resin composite restoration

Active root caries lesion

Oral Treatment Considerations

Medication Oral Side Effects

Xerostomia (caries)

Dysgeusia (poor nutrition)

Tardive Dyskinesia (bruxism, oral trauma)

As dementia progresses,
increased risks for:

Aspiration

Dysphagia

Aphasia



Dental Treatment Considerations

- Unrecognized cognitive decline can lead to neglected oral care and daily task difficulties.
- Dental treatment risks increase, including complications with sedation, anesthesia, and pain assessment
- Limited adherence to post-treatment instructions affects long-term outcomes.

Actions	Level of dependency Medium: Patients with a chronic system condition, demanding to be seen at home or who do not have transport to a dental clinic.	Level of dependency High: Patients with complex medical problems preventing them from moving to receive dental care at a dental clinic.
Assessment	<ul style="list-style-type: none"> • Social and other medical services • Reassess long-term viability of oral health-related preventative strategies 	<ul style="list-style-type: none"> • Physical, cognitive and social context for barriers to emergency palliative and elective oral care • Burden of oral care on the patient
Prevention	<ul style="list-style-type: none"> • Provide Interprofessional healthcare • Increase concentration of fluoride • Decrease risk of adverse effects from polypharmacy • Provide relief from dry mouth 	<ul style="list-style-type: none"> • Management of pain and infection • Frequent concentration of fluoride • Preventative strategies to manage mucositis and the risk of respiratory infections
Treatment	<ul style="list-style-type: none"> • Repair and maintain important teeth with conservative treatments (e.g. atraumatic restorative technique (ART)) • Design oral prostheses to simplify oral hygiene • Simplify hygiene and maintenance 	<ul style="list-style-type: none"> • Palliative treatment on demand • Control pain and infection • Managing oral infections and disorders, and of controlling pain and comorbidity
Communication	<ul style="list-style-type: none"> • Participation of interprofessional healthcare team • Reinforce daily oral care plan 	<ul style="list-style-type: none"> • Integration of all caregivers, patient, family, and interprofessional team • Palliative care

Therapeutic Strategies: Early Dementia Stage



Routine dental care with only minor modifications

Treatment plan to anticipate oral decline (preventive strategies)

Restore to function as soon as possible

Can adapt to a newly fabricated removable prosthesis

Therapeutic Strategies: Moderate Dementia Stage

- Treatment plan with minimal change, but possibly not full rehabilitation (ex: reline versus remake)
- Expect some uncooperative behavior; consider using mouth props
- Short appointments as pt can become agitated
- May not adapt to a new removable prosthesis left out if unable to care for properly
- Complex exam and care may not be possible





<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3880541/>

Chu, et al. Jan 2014



Source: Open Wide



Therapeutic Strategies: Late Dementia Stage



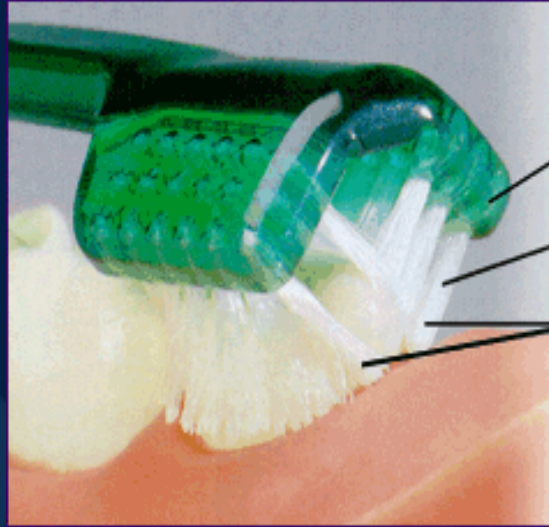
- Problem focused exams
- No complex dental treatment
- May need hospital care for necessary dental care
- Pain and infection
- **Palliative care (comfort)**
- Consider having a removable prosthesis left out if unable to care for properly
- Patient may be more docile instead of combative with care

Importance of Caregivers

- 83% of the help provided to older adults in the United States comes from family members or friends
- A caregiver is a family member or paid helper who regularly looks after a child or a sick, older, or disabled person.
- Provide daily personal, health, and supportive care
- Give vital information to healthcare providers
- Affect the treatment the providers recommend
- Health care surrogate designation
- Have a family member or caregiver in the operating room
- Patient may feel more comfortable and be more cooperative
- One of our roles is to educate caregivers on the importance of oral health



Tools for Caregivers



Compact head helps make brushing comfortable.

Bristles are soft and end-rounded.

Two brush heads help remove more plaque - especially on the tongue side of teeth.

The Twin Toothbrush



Plak Vac Suction Toothbrush



Collis Curve Toothbrush



78 years old Mrs. GM presents to the clinic with her husband

Chief concern: “I want to fix my missing tooth”



CASE I: Mrs. G.M.- Capacity & Consent

Mrs. GM

Medical History

- Early Alzheimer's disease (diagnosed 1 year ago)
- Hypertension
- Hyperlipidemia
- No known drug allergies

Medications:

Lisinopril 10 mg daily, Atorvastatin 20 mg nightly

Social History:

- Married; lives with spouse who provides transportation and support
- Retired engineer
- Nonsmoker, occasional glass of wine with dinner

Clinical findings:

- Missing 19; adjacent teeth sound.
- Periodontal status stable.

Vitals

BP:130/78 mmHg

HR: 74 bpm



Mrs. GM with early Alzheimer's, is deciding between a fixed bridge and a dental implant. She asks appropriate questions but repeats some within 10 minutes and initially misremembers one of the options. After clarification, she correctly restates the procedures and makes a consistent choice aligned with her values. **What is the most appropriate conclusion about Mrs. GM's decision-making capacity?**

- ☐ A. She lacks capacity because he forgot some information during the discussion
- ☐ B. She has capacity because he understands, reasons, and makes a consistent choice after clarification
- ☐ C. She requires caregiver consent for all dental procedures
- ☐ D. She should be referred for full neuropsychological testing before making any decision

Case 1





Capacity

- ☐ Always assess decision-making capacity before proceeding
- ☐ Use Four C's to guide assessment
- ☐ If capacity is lacking involve legally authorized representative

Use short simple explanations and repeat key phrases

Document capacity assessment findings, caregiver's role in decision making

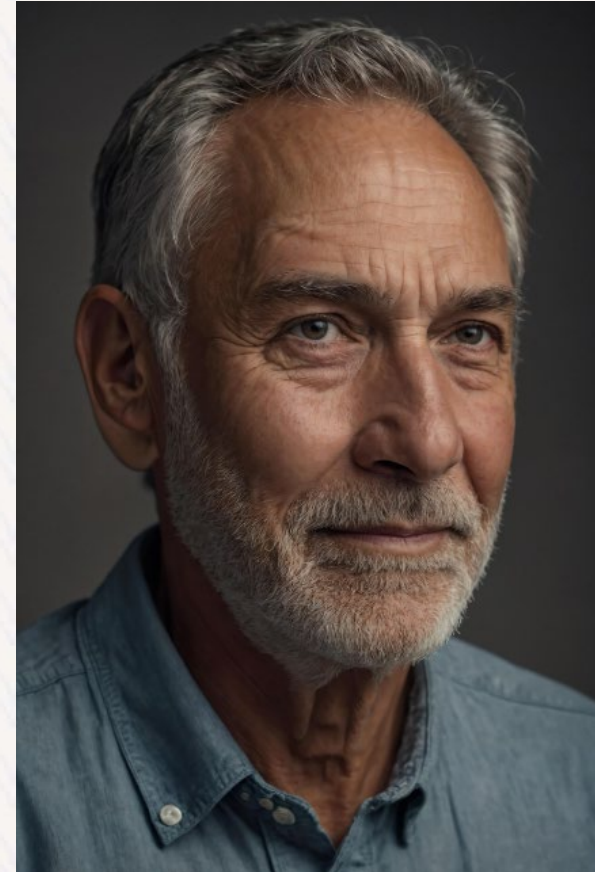
Final treatment plan and rationale

82-year-old man

Lives at home with his niece, who is the **legal healthcare proxy (MPOA)**. Requires assistance with most activities of daily living.

Chief concern: Per family, “He needs teeth to eat properly. His lower tooth is swollen and really hurting. We need to get it checked.”

Lost his CD approximately 3 months ago



Case II: Mr. J Advanced Dementia & Dentures

Mr. J

Medical History

- Moderate Alzheimer's disease (diagnosed 7 years ago)
- Hypertension, well controlled
- Type 2 diabetes, diet controlled
- No known drug allergies

Medications:

Donepezil 10 mg nightly, Lisinopril 10 mg daily Low-dose aspirin 81 mg daily

Social History:

- Lives with niece
- Requires daily assistance with meals, medications, and transportation
- Attends an adult day program twice weekly for supervised activities
- Former smoker (quit 25 years ago), No alcohol
- Retired postal worker

Vitals

BP:132/76 mmHg

HR: 74 bpm

A1c: 6.7%

Mr. J, 82, with moderate Alzheimer's, presents with an abscessed tooth needing urgent extraction. He cannot recall the reason for his visit. His niece, the legal healthcare proxy, understands and agrees to treatment.

What is the most appropriate next step?

- ☐ A. Proceed with extraction after patient agrees
- ☐ B. Delay until patient understands fully
- ☐ C. Obtain proxy consent and proceed
- ☐ D. Prescribe antibiotics and postpone

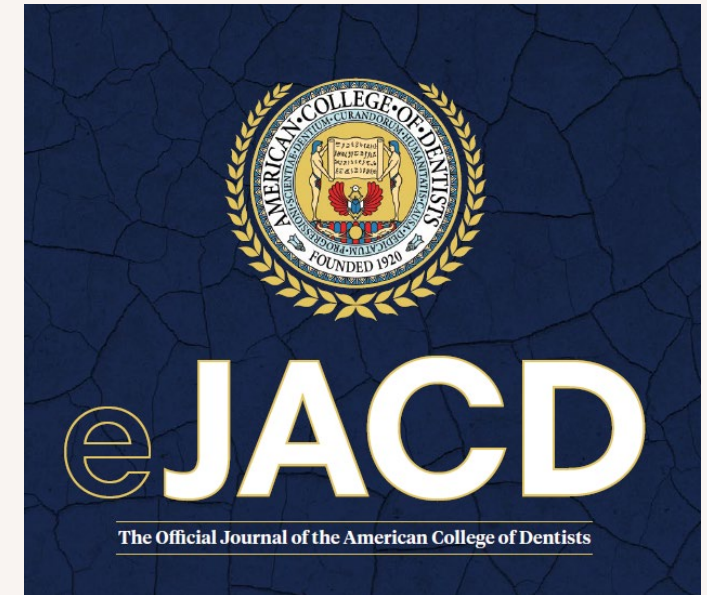
Case II Mr. J





Ethical Obligations with Questionable Decision-Making Capacity

- Capacity is decision-specific — not all or nothing.
- Respect autonomy but balance with beneficence/nonmaleficence.
- Modify communication to support understanding.
- Avoid overtreatment or financial exploitation of vulnerable patients.
- Engage caregivers/proxies where appropriate.
- Document capacity concerns, discussions, and rationale for treatment decisions.



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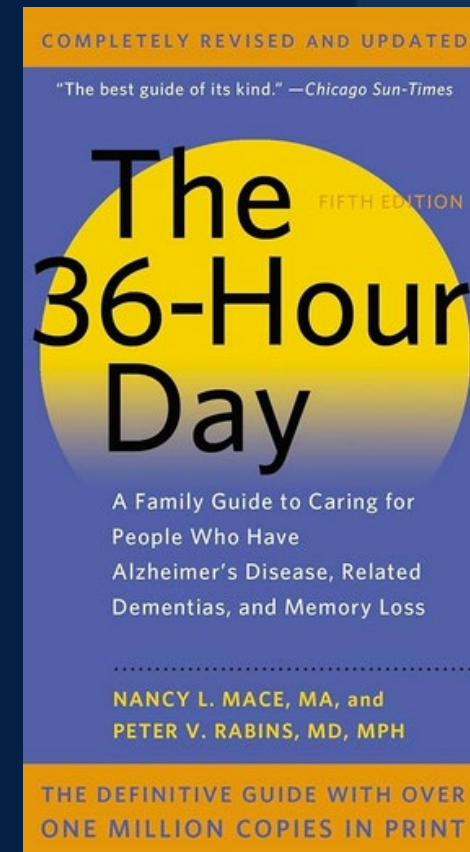
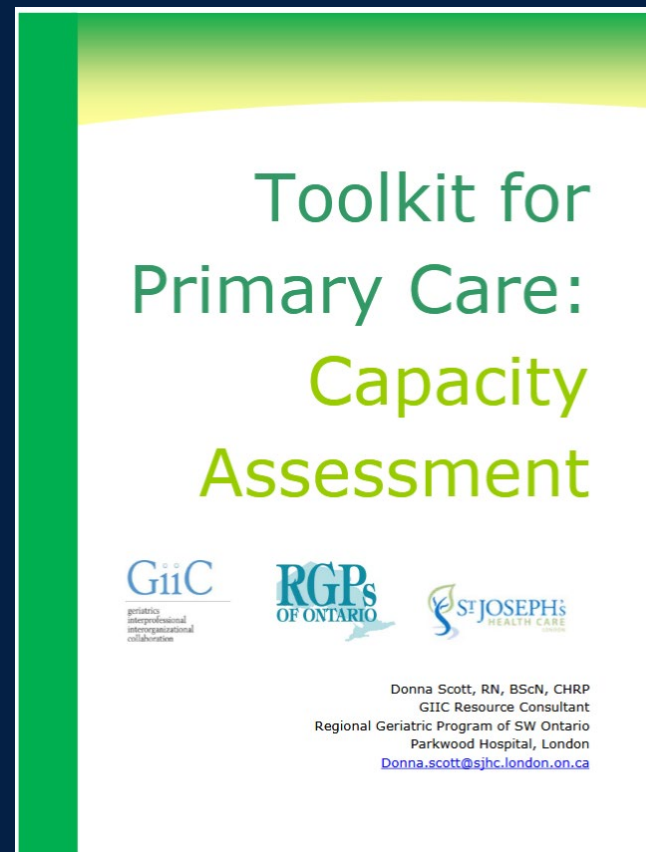
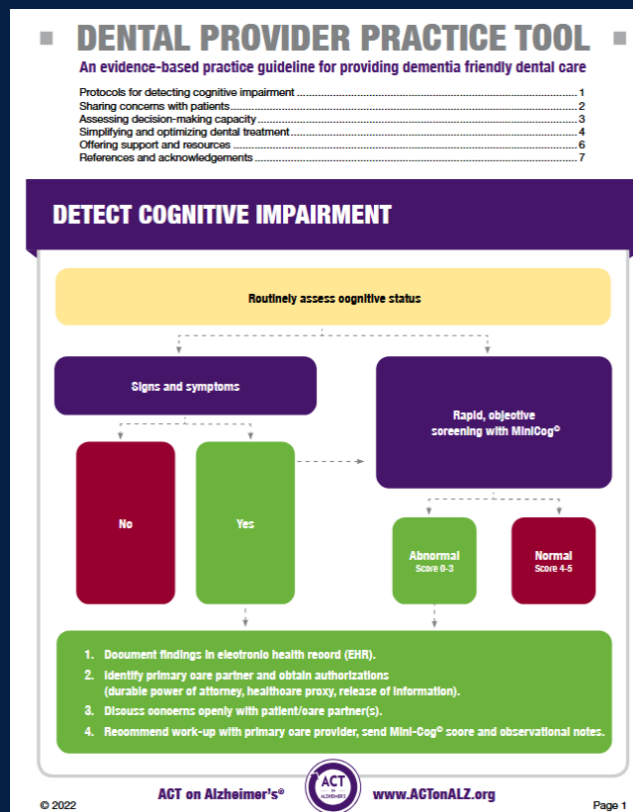
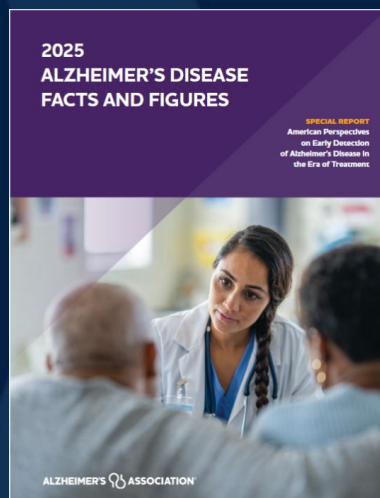
ETHICAL MOMENT | GERIATRIC DENTISTRY · Volume 154, Issue 8, P771-772, August 2023

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Ethical obligations treating a patient with questionable decision-making capacity

[Paul Palo, DMD, FAGD, ACD, ICD](#)

Resources for Clinicians



References

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