The Village at Gainesville
A SantaFe Senior Living Community

NORTH FLORIDA REGIONAL HEALTHCARE

7th Annual Geriatric Symposium

May 4, 2016

Welcome!

OPENING AND WELCOME

Brian Cook, CEO
North Florida Regional Medical Center

Rebecca Catalanotto, Director Health Services
North Florida Retirement Village

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NORTH FLORIDA REGIONAL HEALTHCARE

BATHROOMS

- Through the Atrium on the left
- Turn left in the Atrium – Left hallway, on the left (past 'Back 9 Lounge')

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CEUs

6.0 CEUs - Partial CEUs are not provided

CE Broker

Physical Therapy CEUs pending

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WIFI "nfrv-café"

SMOKE FREE Campus

Veranda Door will LOCK!

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PRESENTATION MATERIALS

http://www.seniorprimarycare.com
https://www.thevillageonline.com

NORTH FLORIDA REGIONAL HEALTHCARE
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Geriatric Symposium
for Healthcare Professionals

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NORTH FLORIDA REGIONAL HEALTHCARE

Dementia Redefined

Carolyn Lukert, CGCM
Vitality Manager and Memory Support Liaison
North Florida Retirement Village

PAC APPROVED CERTIFICATION™ POSITIVE APPROACH™ TO CARE

Objectives

By the end of this session, you should be able to:

- Demonstrate understanding of the key differences between cognitive changes to be anticipated as one ages, compared with changes that are not typically age-related.
- List the 4 most common diseases/conditions that cause progressive dementia and some typical characteristics of each;
- Reframe dementia as a chronic disability versus a fatal illness, and recognize the experiential approach as one way to participate in the life and care of a person living with dementia; and,
- Change language to encompass / reflect a less-stigmatizing view of dementia.

Cognitive changes that typically occur as we age

- Working Memory – 5-8 pieces of information
- Name searching takes longer
- Takes more time to process thoughts
- Takes longer to learn new information/ skills
- Do better with fewer distractions
- Changing gears more of a challenge
- Natural slowing down of controlled Impulses

What changes are <u>not</u> considered "normal" aging?

- Gaps or holes in memory
- Lack of recognition of people and/or places
- Inability to hold on to new information
- Inability to do difficult but familiar tasks
- Inability to see things from another's perspective
- Worsening judgment and/or impulse control
- Changes in typical personality

So, if it's not normal aging, what could it be?

- Delirium caused by infections – meningitis, neurosyphilis, UTI, and others
- Depression
- Vitamin deficiencies –Thiamin, folic acid, B12
- Thyroid disorder
- Hypoglycemia
- Medication side effect
- Mild Cognitive Impairment
- Any of the many diseases that cause the symptoms that come under the dementia umbrella

The Realm of Possibilities

Alzheimer's Disease

- ***Young Onset***
- ***Late Life Onset***

Vascular Dementias
(Multi-infarct)

Lewy Body Dementia

Fronto-Temporal Lobe Dementias

Other Dementias
- Genetic syndromes
- Metabolic pxs
- ETOH related
- Drugs/toxin exposure
- White matter diseases
- Mass effects
- Depression(?) or Other Mental conditions
- Infections – BBB cross
- Parkinson's

Definitions of Dementia

- An acquired organic **mental disorder** with loss of intellectual abilities of sufficient severity to interfere with social or occupational functioning. The dysfunction is multifaceted and involves memory, behavior, personality, judgment, attention, spatial relations, language, abstract thought, and other executive functions. The **intellectual decline is usually progressive**, and initially spares the level of consciousness.
  - – ICD9Data.com
- General term for a variety of organic brain **disorde**rs characterized by a **decline in mental acuity**, personality, deterioration, memory loss, disorientation, and **stupor**. Certain types of dementia may be partially or completely reversible.
  - – Mosby's Dictionary of Complementary and Alternative Medicine © 2005,

Definitions of Dementia

- **Loss** of intellectual capacity accompanied usually by **irrational behavior.**
  - – Saunders Comprehensive Veterinary Dictionary, 3 ed. © 2007
- A **progressive, organic mental disorder** characterized by chronic **personality disintegration**, confusion, disorientation, **stupor, deterioration of intellectual capacity** and function, and **impairment of control of memory**, judgment and impulses.
  - – Mosby's Medical Dictionary, 9th edition, © 2009
- A general term for a diffuse, **irreversible condition** of slow onset seen in older patients, due to **dysfunction** of cerebral hemispheres; it is an **end stage mental deterioration** and is characterized by a **loss cognitive capacity**, leading to **decreased social &/or occupational activity**.
  - – Mcgraw-Hill Concise Dictionary of Modern Medicine © 2002

Dementia Redefined!

A shift in the way a person experiences the world around him/her where the ability to maintain one's own well-being is challenged.

Dementia Beyond Drugs – Changing the Culture of Care,

G. Allen Power, M.D.

Comparison of Models of Care

	Traditional/BioMedical	Experiential
Dementia Defined	Progressive, irreversible, fatal	Shift in perception of the world
Brain Function	Loss of neurons & cognition	Brain plastic, learning can occur
View of Dementia	Tragic, Costly, burdensome	Continued potential for life and growth
Growth/ Research	Almost entirely focused on prevention and cure	Also need to improve the lives of those with dementia
Environmental Goals	Protection, isolation	Maintain empowerment, well-being, autonomy

Living with Dementia – to change your mind about people whose minds have changed, Brilliant Image Productions, G. Allen Power, MD

Comparison of Models of Care

	Traditional/BioMedical	Experiential
Environmental Attributes	Disease specific living areas, programmed activities	Individualized, person-directed care, diverse engagement
Focus on Care	Tasks and treatment, less attention to care environment	Relationships, care environment is critical
Staff/ Family Role	Caregiver	Care partner
View of behavior	Confused, purposeless, driven by disease and neurochemistry	Attempts to cope, problem-solve, and communicate needs
Response to Behavior	"Problem" to be managed, medication, restraint	Care environment inadequate Conform to person

Living with Dementia – to change your mind about people whose minds have changed, Brilliant Image Productions, G. Allen Power, MD

Comparison of Models of Care

	Traditional/BioMedical	Experiential
Behavioral Goals	"Normalize" behavior Meet needs of staff and families	Satisfy unmet needs Focus on individual perspective
Non-pharmacologic Approach	Focus on discrete interventions	Focus on transforming the environment
Overall Result	High use of meds Continued suffering Decreased Well-being	Rare use of meds Attention to spiritual and emotional needs, and improved well-being

Living with Dementia – to change your mind about people whose minds have changed, Brilliant Image Productions, G. Allen Power, MD

Living with Dementia – To Change your Minds about People whose Minds have changed

THE STORY OF ALEX

Changing our Language

- The language we use to talk about dementia influences how people with dementia are viewed and also how they feel about themselves.
- People with dementia prefer words and descriptions that are accurate, balanced and respectful.
  - **The Dementia Engagement and Empowerment Project**

Words and Descriptions to Avoid

- Dementia sufferer, or person suffering from dementia
- Demented
- Senile or Senile Dementia
- Burden e.g. people are a burden or cause burden
- Victim, Victim of Dementia, or Dementia Victim
- Plague
- Epidemic
- Enemy of humanity
- Living death e.g. dementia is a living death
- Dementia is the long goodbye
- The person with dementia is fading away
    - **The Dementia Engagement and Empowerment Project**

Words and Descriptions to Use

- **Living with (or experiencing) dementia,**
  - instead of suffering from dementia
- **Behavioral Expressions**
  - instead of behavior problems
- **Care partner**
  - instead of care giver
- **Chronic Disability**
  - instead of fatal disease

Dementia Redefined - One More Time!!

A shift in the way a person experiences the world around him/her where the ability to maintain one's own well-being is challenged.

Dementia Beyond Drugs – Changing the Culture of Care,

G. Allen Power, M.D.

QUESTIONS

Forgetfulness… Is it Dementia?

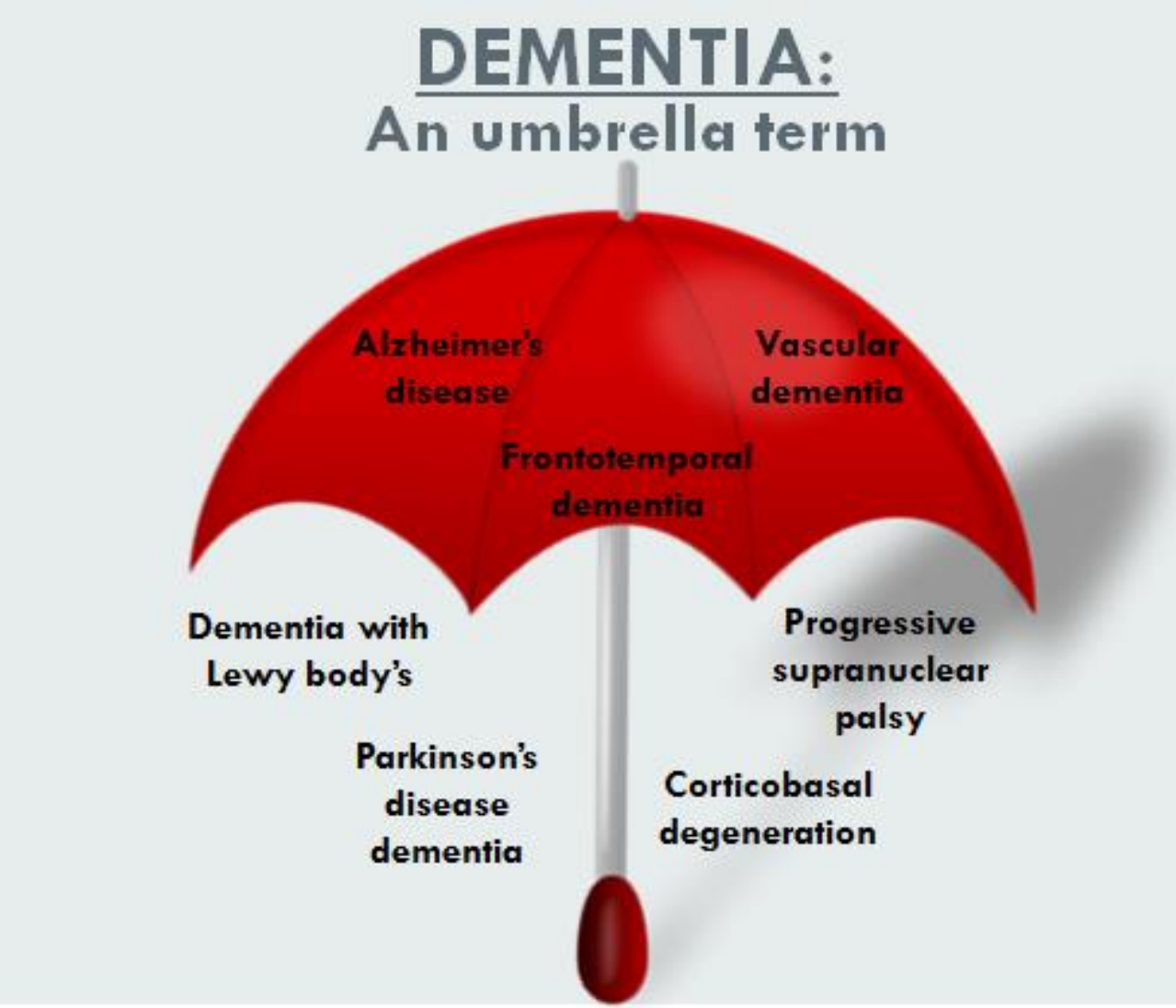
LaTeya Foxx, DO
Southeastern Neurology
Gainesville, FL
352-374-2222

Outline

- What is Dementia?
- Epidemiology/Gender Differences
- Dementia Subtypes
- Clinical Symptoms
- Diagnostics
- Alzheimer's Mechanisms
- Biomarkers
- Treatment Options
- Alternative Therapies
- Ongoing Research
- Summary

What is Dementia?

- Dementia is a general term that describes a group of symptoms-such as loss of memory, judgment, language, complex motor skills, and other intellectual function-caused by the permanent damage or death of the brain's nerve cells, or neurons.
- A progressive neurodegenerative process



http://neurowiki2014.wdfiles.com/local--files/group:dementia/dementia.PNG

Alzheimer's Disease

- 2015 Alzheimer's Facts and Statistics
- 5.3 million Americans
- Expected 16 million by 2050
- 2/3 women
- <45% of patients/caregivers aware of diagnosis
- 33% of patients are aware of the illness
- $226 billion in costs this year. 50% paid by Medicare
- 6th leading cause of death in the US
- 60% caregivers rate emotional stress as high/very high
- 40% of caregivers have depression

Lancet Neurology: European Data

- 2015; 47 million affected worldwide by dementia
- Expected to reach 75 million by 2030
- 131 million by 2050
- Estimated costs for society in Europe 2010: $238 billion
- Estimated only 20-50% of patient's living with dementia have documented diagnosis in primary care
- Several population studies suggested people age 65 + have median survival 3-9 years after diagnosis, some up to 20 years
- 94% live at home in low/middle income countries; 66% in high income countries
- By age 90 y/o, 60% died with dementia or severe cognitive impairment

Sex Differences

- Women disproportionately affected
- Brain development and structure/function, biochemistry differ by sex
- Sex determining genes, fetal hormonal programming
- 2015 study women positive for E4 allele of apolipoprotein E gene are at greater risk for developing AD then men with this allele
- Looking into dementia by sex may expand directions for personalized treatment
- Men-more aggressive behaviors, more comorbidity, higher mortality
- Women-more affective symptoms/disability, longer survival

Subtypes of Dementia

- Alzheimer's Disease
- Vascular Disease
- Mixed Dementia
- Dementia with Lewy Bodies
- Parkinson's Disease Dementia
- Frontotemporal Dementia
- Chronic Traumatic Encephalopathy
- Others

Normal Aging

- Tip of tongue phenomena,
- Slowed cognitive processing
- Difficulty multitasking

Alzheimer's Disease

- 60-80% of dementia cases
- 3 basic phases
- Early (1-2 years WHO)
  - Functioning Independently
  - Subjective memory lapses, forgetting familiar words, location of objects
  - Wording finding, remembering names, recent events
  - Trouble with planning, organizing
- Moderate (2-5 years)
  - Longest phase, may last many years
  - Increasing dependence
  - Confusing words
  - Behavioral issues, personality changes
  - Changing sleep patterns

Clinical Phases

- Moderate
  - Wandering/Becoming Lost
  - Suspicious/delusions
- Severe (5+ years)
  - Loss ability to interact with environment
  - Impaired conversations
  - Full time, 24/7 care
  - High level assistance with ADLs
  - Impaired movements, walking, standing, etc
  - Falls
  - Susceptibility to infection (pneumonia, etc)

  - May progress more quickly in people 75+ per some studies
  - Contrasting studies suggestion decline 1 pt per year on MMSE

Diagnosis

- DSM 5 criteria
- Major neurocognitive Disorder
  - Evidence of significant cognitive decline
  - Decline must interfere with independence in daily activities (ADLs: bathing, toileting, dressing, eating, etc. IADLS: managing finances, shopping, managing appointments, etc.)
- Minor neurocognitive Disorder
  - Evidence of moderate cognitive decline
  - Not interfering with activities of daily living
  - Activities typically require mental effort

Proposed Revised Diagnostic Criteria 2011

- National Institute of Aging and Alzheimer's Association
- Revised criteria included: preclinical phase and inclusion of biomarkers
- 3 phases
  - Pre-Clinical
  - Mild Cognitive Impairment
  - Dementia due to Alzheimer's Disease

Pre-Clinical

- May precede onset of symptoms by 20 years
- Presymptomatic phase
- Measurable Changes in Brain/CSF/blood (biomarkers)
- Not used widespread/No clinically useful correlate at this point
- Research Category

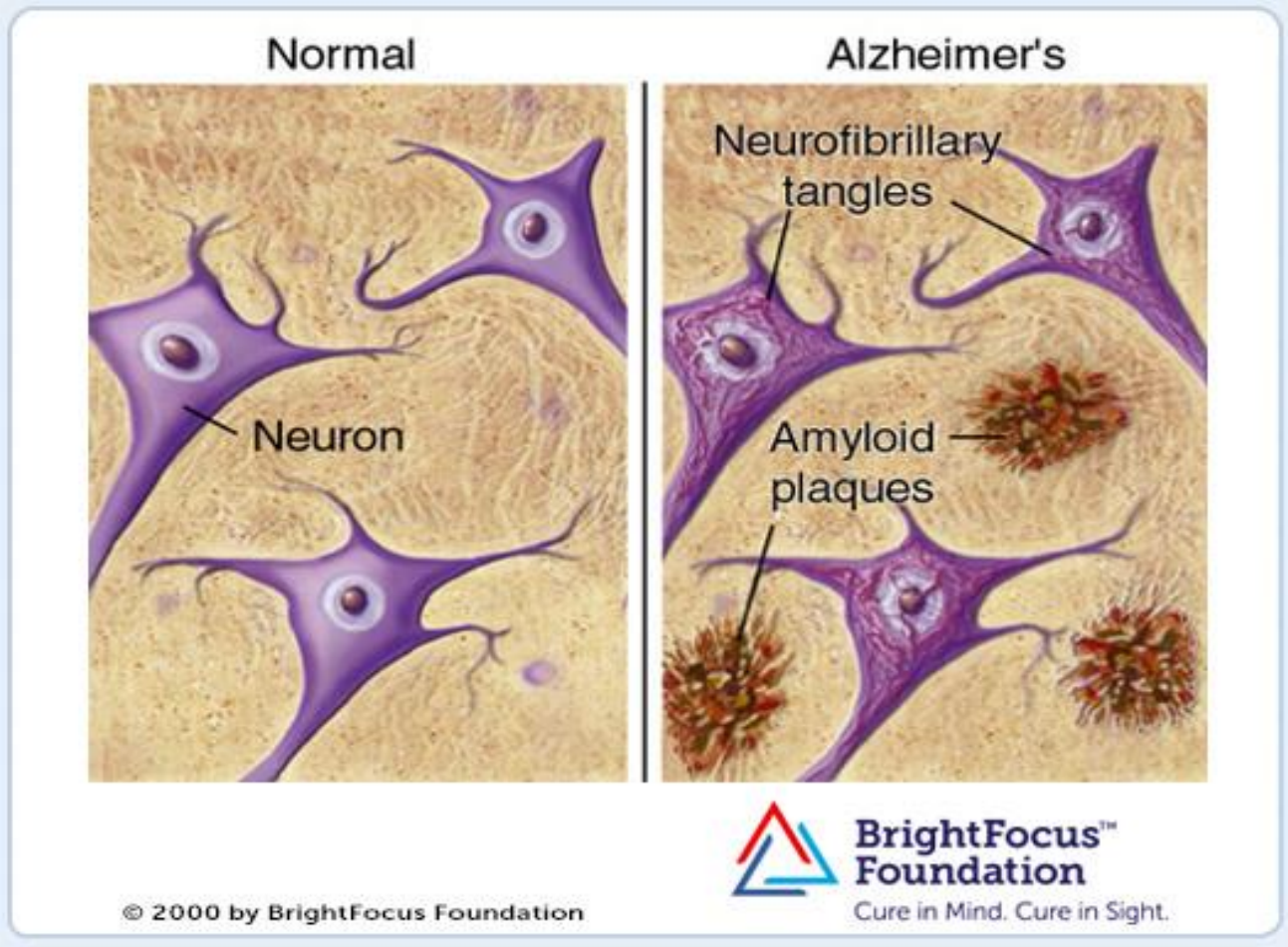
Mild Cognitive Impairment (MCI)

- Noticeable memory difficulties to patient and family
- Cognitive issues greater than expected for age/education
- Do not affect activities of daily living/function
- 10-20% over 65 have MCI
- 15% progress from MCI to dementia yearly
- 50% who have been evaluated by doctor progress to dementia in 3-4 years
- Some people without memory problems can convert back to normal cognitive status
- Biomarkers may be beneficial in this group
- Still not clinically utilizable at this point

Dementia due to Alzheimer's Disease

- Noticeable memory difficulties
- Impaired daily functioning
- Insidious onset over months to years
- History of progressive cognitive decline
- Amnestic form most common-impairment of episodic memory
- Other domains can be affected: language, visuospatial, executive functioning

Pathology



http://www.brightfocus.org/alzheimers/about/understanding/plaques-and-tangles.html

Other Factors

- Cholinergic neurotransmission
- Cholinergic deficiency implicated in cognitive decline and behavioral changes of AD
- Affected areas cerebral cortex, hippocampus, amygdala
- Cholinergic pathways (nucleus basalis of Meynert and diagonal band of Broca) lost in AD
- Enhancing cholinergic neurotransmission is current basis for treatment
- Oxidative stress and damage
- Estrogen loss?

90+ Study

Major findings

Researchers from The 90+ Study have published many scientific papers in premier journals. Some of the major findings are:

People who drank moderate amounts of alcohol or coffee lived longer than those who abstained.

People who were overweight in their 70s lived longer than normal or underweight people did.

Over 40% of people aged 90 and older suffer from dementia while almost 80% are disabled. Both are more common in women than men.

About half of people with dementia over age 90 do not have sufficient neuropathology in their brain to explain their cognitive loss.

People aged 90 and older with an APOE2 gene are less likely to have clinical Alzheimer's dementia, but are much more likely to have Alzheimer's neuropathology in their brains.

- See more at: http://www.mind.uci.edu/research/90plus-study/#sthash.kBzLDvYN.dpuf

Biomarkers

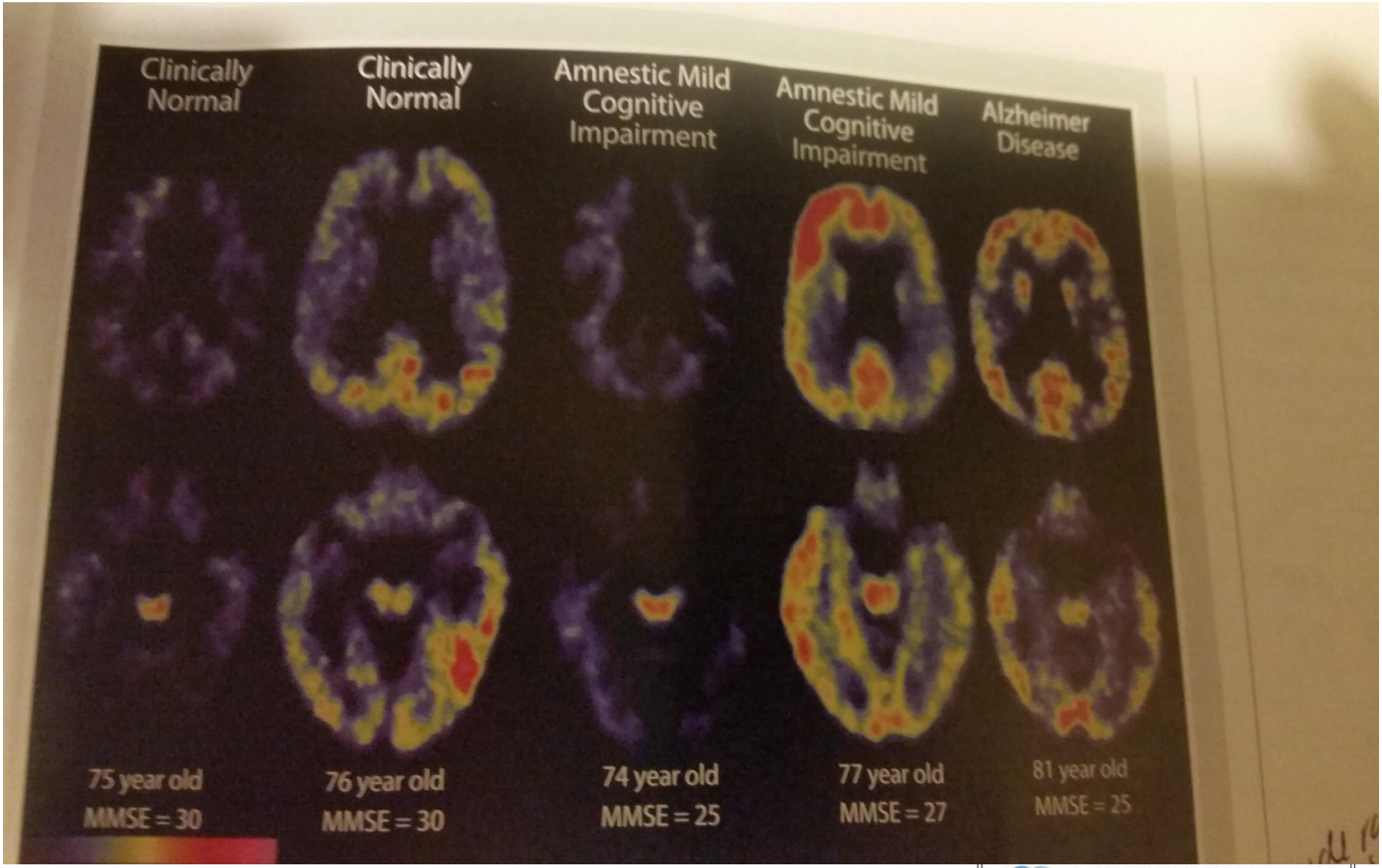
- 1) Markers of beta- amyloid accumulation in brain
- 2) Markers of neuronal injury and degeneration
- Ongoing research to validate accuracy and validity of biomarkers
- Which combination of biomarker testing will lead to accurate diagnosis?
- Disease modifying therapy indications?

Markers of Amyloid Beta Accumulation

- CSF assays of Aβ 1-42
- Positron emission tomography (PET) imaging
- AD associated with decreased CSF Aβ1-42
  - Aβ polymerizing and depositing as fibrillary plaques
- PET imaging –Amyloid beta
  - Pittsburgh Compound B (PiB) imaging
  - 18F-florbetapir, Florbetapir- FDA approved for detection of amyloid as diagnostic aid
- Strong correlation between these 2 markers
- CSF decrease in Aβ may precede evidence of deposition on PET amyloid imaging
- Negative amyloid PET indicates low likelihood of CI due to AD

Aβ Accumulation

- Positive PET felt to correspond to moderate to severely elevated levels of Aβ deposits
- Positive study is not definitive AD diagnosis alone
- Positive study in MCI, AD, LBD, normal people
- Positive study in 90% with AD diagnosis, 60% MCI, 30-40% of cognitively intact
- Similar rates of positivity for CSF Aβ
- ½ of MCI patients with positive imaging converted to AD in 1-3 years
- Cognitively normal adults with positive imaging termed "preclinical"
- Level of increased risk currently being researched


Clinically Normal
Clinically Normal
Amnestic Mild Cognitive Impairment
Amnestic Mild Cognitive Impairment
Alzheimer Disease
75 year old
MMSE = 30
76 year old
MMSE = 30
74 year old
MMSE = 25
77 year old
MMSE = 27
81 year old
MMSE = 25

Markers of Neuronal Injury/Neurodegeneration

- Molecular markers of neuronal injury
- Imaging markers of synaptic dysfunction
- Imaging markers of neuronal loss and atrophy
- CSF phosphyrlated tau (P-tau) 181 and total tau felt to reflect neuronal injury and neuronal death respectively
- Combination of elevated CSF P-tau and decreased Aβ1-42 felt to be signature of AD
- These marker are elevated in clinically normal carriers of AD familial AD

Neurodegeneration

- 18-F fluorodeoxyglucose (FDG-PET) measures glucose metabolism in brain- reflects synaptic acitivity
- AD- b/l temporoparietal hypometabolism, frontal dysfunction in later stages
- Single photo emission tomography (SPECT) imaging shows similar pattern; less utilized than PET due to resolution
- Role in preclinical AD unclear
- Does not always distinguish patterns between normal, MCI, AD
- Comorbid conditions-vascular disease
- Association with cognitive symptoms unclear
- Not clearly translated into clinical use
- Ongoing research
- F-MRI- less developed; no contrast/radiation

Biomarkers

- Still primarily research oriented and driven
- Many details remain unknown
- What to do with information at this day in time, especially preclinical data?
- Ongoing area of research
- May be useful in determining progression to next phase of disease (MCI to dementia)
- Standardization of testing across centers
- Validation
- Normative values

Assessments/Screening Tools

Functional Ability Assessment

- Basic ADL: grooming, bathing, dressing, eating, continence
- IADLs- functional assessment tools
- Safety issues: driving, medications, fall risk
- Bills, managing checkbook, bills, taxes
- Maintenance of household

Instrumental Activities of Daily Living (IADL)

Instructions: Circle the scoring point for the statement that most closely corresponds to the patient's current functional ability for each task. The examiner should complete the scale based on information about the patient from the patient him-/herself, informants (such as the patient's family member or other caregiver), and recent records.

A. Ability to use telephone	Score
1. Operates telephone on own initiative; looks up and dials numbers, etc.	1
2. Dials a few well-known numbers	1
3. Answers telephone but does not dial	1
4. Does not use telephone at all	0

B. Shopping	
1. Takes care of all shopping needs independently	1
2. Shops independently for small purchases	0
3. Needs to be accompanied on any shopping trip	0
4. Completely unable to shop	0

E. Laundry	Score
1. Does personal laundry completely	1
2. Launders small items; rinses stockings, etc.	1
3. All laundry must be done by others	0

F. Mode of transportation	
1. Travels independently on public transportation or drives own car	1
2. Arranges own travel via taxi, but does not otherwise use public transportation	1
3. Travels on public transportation when assisted or accompanied by another	1
4. Travel limited to taxi or automobile with assistance of another	0
5. Does not travel at all	0

C. Food preparation

1. Plans, prepares, and serves adequate meals independently	1
2. Prepares adequate meals if supplied with ingredients	0
3. Heats and serves prepared meals, or prepares meals but does not maintain adequate diet	0
4. Needs to have meals prepared and served	0

D. Housekeeping

1. Maintains house alone or with occasional assistance (e.g., "heavy work domestic help")	1
2. Performs light daily tasks such as dishwashing, bed making	1
3. Performs light daily tasks but cannot maintain acceptable level of cleanliness	1
4. Needs help with all home maintenance tasks	1
5. Does not participate in any housekeeping tasks	0

G. Responsibility for own medications

1. Is responsible for taking medication in correct dosages at correct time	1
2. Takes responsibility if medication is prepared in advance in separate dosages	0
3. Is not capable of dispensing own medication	0

H. Ability to handle finances

1. Manages financial matters independently (budgets, writes checks, pays rent and bills, goes to bank), collects and keeps track of income	1
2. Manages day-to-day purchases, but needs help with banking, major purchases, etc.	1
3. Incapable of handling money	0

(Lawton & Brody, 1969)

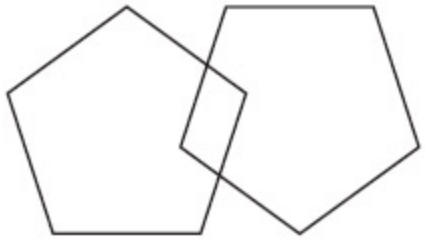
Scoring: The patient receives a score of 1 for each item labeled A – H if his or her competence is rated at some minimal level or higher. Add the total points circled for A – H. The total score may range from 0 – 8. A lower score indicates a higher level of dependence.

Sources:

- Cromwell DA, Eagar K, Poulos RG. The performance of instrumental activities of daily living scale in screening for cognitive impairment in elderly community residents. *J Clin Epidemiol*. 2003;56(2):131-137.
- Lawton MP. The functional assessment of elderly people. *J Am Geriatr Soc*. 1971;19(6):465-481.
- Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist*. 1969;9(3):179-186.
- Polisher Research Institute. Instrumental Activities of Daily Living Scale (IADL). Available at: http://www.abramsoncenter.org/PRI/documents/IADL.pdf. Accessed February 15, 2005.

Patient_____ Examiner _____ Date_____

Maximum	Score	
		Orientation
5	( )	What is the (year) (season) (date) (day) (month)?
5	( )	Where are we (state) (country) (town) (hospital) (floor)?
		Registration
3	( )	Name 3 objects: 1 second to say each. Then ask the patient all 3 after you have said them. Give 1 point for each correct answer. Then repeat them until he/she learns all 3. Count trials and record. Trials _____
		Attention and Calculation
5	( )	Serial 7's. 1 point for each correct answer. Stop after 5 answers. Alternatively spell "world" backward.
		Recall
3	( )	Ask for the 3 objects repeated above. Give 1 point for each correct answer.
		Language
2	( )	Name a pencil and watch.
1	( )	Repeat the following "No ifs, ands, or buts"
3	( )	Follow a 3-stage command: "Take a paper in your hand, fold it in half, and put it on the floor."
1	( )	Read and obey the following: CLOSE YOUR EYES
1	( )	Write a sentence.
1	( )	Copy the design shown.



_____ Total Score

ASSESS level of consciousness along a continuum _____

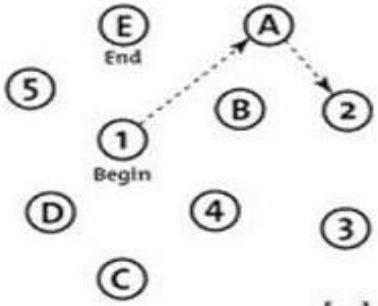
Alert Drowsy Stupor Coma

MMSE Score	Cognitive Function
27-30	normal cognitive function
21-26	mild cognitive impairment
11-20	moderate cognitive impairment
0-10	severe cognitive impairment

MONTREAL COGNITIVE ASSESSMENT (MOCA)

NAME :
Education : Date of birth :
Sex : DATE :

VISUOSPATIAL / EXECUTIVE



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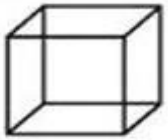


[ ] [ ]

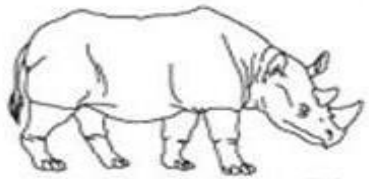
Draw CLOCK (Ten past eleven) (3 points)

[ ] Contour [ ] Numbers [ ] Hands

POINTS ___/5

NAMING

[ ]



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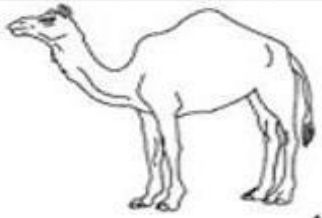

[ ] ___/3

MEMORY

Read list of words, subject must repeat them. Do 2 trials. 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

[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B ___/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 letters 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
	WITH NO CUE	[ ]	[ ]	[ ]	[ ]	[ ]	
Optional	Category cue						
	Multiple choice cue						

___/5

ORIENTATION

[ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City ___/6

www.mocatest.org

Normal ≥ 26 / 30

TOTAL ___/30

Add 1 point if ≤ 12 yr edu

MOCA SCORES

	Normal Controls (NC)	Mild Cognitive Impairment (MCI)	Alzheimer's Disease (AD)
Number of subjects	90	94	93
MoCA average score	**27.4**	**22.1**	**16.2**
MoCA standard deviation	2.2	3.1	4.8
MoCA score range	25.2 – 29.6	19.0 – 25.2	21.0 – 11.4
Suggested cut-off score	≥26	<26	<26ψ

ψ Although the average MoCA score for the AD group is much lower than the MCI group, there is overlap between them. The suggested MoCA cut-off score is thus the same for both. The distinction between AD and MCI is mostly dependent on the presence of associated functional impairment and not on a specific score on the MoCA test.

Neurocognitive Assessments

- MMSE- ease of use, familiar to physicians, moderate sensitivity for dementia diagnosis
  - Memory, orientation, working memory, language, visuospatial abilities
  - Staging, tracking disease progression
  - Insensitive for mild dementia, no alternative versions
  - Minimal assessment of executive function/visuospatial ability
- MOCA-increased sensitivity, broader assessment of cognitive domains
  - 7-10 minutes to administer
  - Available in 3 alternate versions, different languages
  - Attention, executive function, language, memory in more detail
  - Limited learning trials, may increase recall deficits, hearing impairments with repetitions

Early Identification Tool 1

Alzheimer's Association Ten Warning Signs

The Alzheimer's Association developed the following checklist of common symptoms. (Some of them also may apply to other dementing illnesses.) Individuals with several of these symptoms should see a physician for a complete examination.

_____ 1. **Memory loss**. One of the most common early signs of dementia is forgetting recently learned information. While it's normal to forget appointments, names, or telephone numbers, those with dementia will forget such things more often and not remember them later.

_____ 2. **Difficulty performing familiar tasks.** People with dementia often find it hard to complete everyday tasks that are so familiar we usually do not think about how to do them. A person with Alzheimer's may not know the steps for preparing a meal, using a household appliance, or participating in a lifelong hobby.

_____ 3. **Problems with language.** Everyone has trouble finding the right word sometimes, but a person with Alzheimer's disease often forgets simple words or substitutes unusual words, making his or her speech or writing hard to understand. If a person with Alzheimer's is unable to find his or her toothbrush, for example, the individual may ask for "that thing for my mouth."

_____ 4. **Disorientation to time and place.** It's normal to forget the day of the week or where you're going. But people with Alzheimer's disease can become lost on their own street, forget where they are and how they got there, and not know how to get back home.

_____ 5. **Poor or decreased judgment.** No one has perfect judgment all of the time. Those with Alzheimer's may dress without regard to the weather, wearing several shirts or blouses on a warm day or very little clothing in cold weather. Individuals with dementia often show poor judgment about money, giving away large amounts of money to telemarketers or paying for home repairs or products they don't need.

_____ 6. **Problems with abstract thinking.** Balancing a checkbook may be hard when the task is more complicated than usual. Someone with Alzheimer's disease could forget completely what the numbers are and what needs to be done with them.

_____ 7. **Misplacing things.** Anyone can temporarily misplace a wallet or key. A person with Alzheimer's disease may put things in unusual places: an iron in the freezer or a wristwatch in the sugar bowl.

_____ 8. **Changes in mood or behavior.** Everyone can become sad or moody from time to time. Someone with Alzheimer's disease can show rapid mood swings—from calm to tears to anger—for no apparent reason.

_____ 9. **Changes in personality.** People's personalities ordinarily change somewhat with age. But a person with Alzheimer's disease can change a lot, becoming extremely confused, suspicious, fearful, or dependent on a family member.

_____ 10. **Loss of initiative.** It's normal to tire of housework, business activities, or social obligations at times. The person with Alzheimer's disease may become very passive, sitting in front of the television for hours, sleeping more than usual, or not wanting to do usual activities.

Source:

Alzheimer's Disease and Related Disorders Association, Inc. 2003. *Ten Warning Signs of Alzheimer's Disease.* This tool can be accessed at http://www.alz.org/AboutAD/10Signs.htm.

Family Questionnaire

In your opinion does _____ have problems with any of the following?
Please circle the answer.

1.	Repeating or asking the same thing over and over?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
2.	Remembering appointments, family occasions, holidays?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
3.	Writing checks, paying bills, balancing the checkbook?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
4.	Shopping independently (e.g., for clothing or groceries)?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
5.	Taking medications according to instructions?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*
6.	Getting lost while walking or driving in familiar places?	*Not at all*	*Sometimes*	*Frequently*	*Does not apply*

Relationship to patient _____
(spouse, son, daughter, brother, sister, grandchild, friend, etc.)

Other Considerations

- Social support system
- Alcohol/Drug Exposure
- Physical Activity
- Vascular risk factors
- TBI
- Seizures
- PD
- MS
- Hearing/Vision Impairment
- Medications: anticholinergics, sedating meds

Other Assessments

- Computerized testings-still lacking some validation in clinical practice
- Clock drawing-judgment and planning (executive function) and visuospatial ability
- Assessment of memory domains: episodic, semantic, procedural
- List-learning
- Story Recall
- Major Recent Events
- Day to day details; recent meals, etc
- Attention: digit span
- Neurological examination

Evaluations/Imaging

- Neuropsychologic testing: difficult diagnosis, atypical presentation, confounding factors,
  - Competency assessment
- Labs: B12, TSH, CBC, Creatinine; Others: RPR, HIV
- LP: not routine; r/o meningitis/encephalitis, neurosyphillis, CSF pressure in NPH
- MRI (CT): atrophy, stroke, white matter changes, microhemorrhages (amyloid angiopathy), subdural hematomas
  - Hippocampal, focal atrophy of cortex, location of white matter changes
- MRI/LP indicated for rapidly progressing dementias
  - DWI- cortical ribbon
- No current guidelines for use of biomarkers in diagnosis

Dementia Subtypes

- Vascular- stepwise decline, hx of stroke or stroke-like episodes
- Acceleration of condition by medical illness, major surgery, etc
- FTD -behavioral, personality changes; preserved memory and visuospatial abilities
- Semantic dementia-progressive aphasia
- Dementia with Lewy bodies- visual hallucinations, waxing and waning, abnormal movements
- Parkinson's disease dementia- subcortical, executive function

Treatment Options

- Outpatient
- Modest cognitive benefit
- No current disease modifying/altering agents
- No agents to reverse memory loss

- Inpatient
- Reorientation
- Sundowning
- AVOID Benzodiazepines if possible. Caution with opiates and other sedating medications.

Cholinesterase Inhibitors

- Based on cholinergic hypothesis of memory impairment
- Donepezil (Aricept 10mg daily, start 5mg x 1 month)
  - Long acting reversible acetylcholinesterase inhibitor
  - Modest cognitive effects over 2 years, no significant effect on loss of function, nursing home placement
  - Indication for Mild to moderate AD
  - 23mg for Moderate to Severe AD
- Galantamine (Razadyne) 8-12 mg po bid
  - Reversible competitive ACHE Inhibitor, less butrylcholinesterase
  - Consistent positive effects of 3-6 months duration
- Rivastigmine (Exelon, patch) 3-6mg bid, po; 13.3mg/24hr
  - Pseudoirreversible cholinesterase inhibitor for ACHE and butyrlcholinesterase

Adverse Effects

- Nausea, vomiting, diarrhea, anorexia, weight loss
- Muscle cramps- donepezil
- Increased risk of GI bleed; increased gastric acid secretion
- Sinus bradycardia-syncope
- COPD/asthma exacerbation
- Urinary outflow obstruction
- Risk of seizures
- Prolongation of effects of succinylcholine type muscle relaxants

Long Term Safety Concerns

- Syncope hospitalizations twice as high in dementia patients on meds
- 69% increased risk of bradycardia
- 49% increased risk of pacemaker placement
- 18% increased risk of hip fractures
- Incidence is 2% treated patients per year

Efficacy

- 3 agents with similar efficacy data
- Most efficacy studies were conducted over 3-6 month time period
- Very modest benefits were seen on testing scales
- Benefit of 23mg donepezil dose unclear, significantly high risk of side effects

Treatments

- No medications currently indicated for mild cognitive impairment; though frequently used
- Memantine (Namenda 10mg BID, XR 28mg daily)
  - Indicated for moderate to severe AD
  - Noncompetitive NMDA receptor antagonist
  - Thought to protect against overstimulation of NMDA receptors and consequent glutamate/calcium mediated neurotoxicity
  - MMSE <15 in studies
  - Small beneficial effect
  - Long term efficacy has not been testing
  - AE: HA, dizziness, confusion, somnolence, hallucinations

Alternative Therapies

- Cerebrolysin- peptide and amino acid preparation from porcine brain. May have neurotrophic action
  - IV/IM 5days/wk x 4 wk
  - Cognitive effects x 3 months
  - Equivocal outcome in placebo controlled groups
- Ginkgo biloba-food supplements
  - Approved in Germany and France on formularies
  - Preclinical models that flavonoids and ginkgolides are antioxicants, appear neuroprotective, may inhibit Aβ42 induced neuron death and aggregations
  - Theoretical. Benefits not demonstrated in humans
  - Mixed results for those without dementia
  - Cochrane review of 35 clinical trials-inconsistent data

Alternate Therapies

- Medical food
  - Medium chained triglycerides (Axona)
  - Mitochondrial dysfunction
  - Food converted to ketones to enhance electron transport in mitochondria
  - 12 week trial- improved cognitive function after 6 weeks, lost at 12 weeks
  - Negative trial in MCI
  - AE: GI symptoms, ketoacidosis in at risk groups

  - Europe/Brazil-uridine, choline, omega 3 fatty acids, phospholipids, B vitamins, antioxidants
  - Most outcomes not significant, possible benefit in mild AD

Nonpharmacologic Therapies/Prevention

- Strong association between physical activity and maintenance of cognitive function
  - Possibly neuroprotective
  - Aerobic and resistance exercise may delay cognitive decline
- Cognitive Reserve
  - Higher education levels associated with decreased risk of dementia
  - Neuropathologic studies- increased neuronal density and cortical thickness
  - Cognitive activities (puzzles, reading, games)
- Social Networks/Activity
- Vitamins- no consistent benefits with folic acid, vitamin E, C, Gingko biloba, fatty acids
- Mediterranean diet (high antioxidants and Omega 3)-low risk of MCI and AD

Other Factors

- Nicotine possible short term benefit, smoking however increases inflammation and oxidative stress
- Moderate Alcohol Intake may lower risk
- Sleep disturbance
- Cardiovascular risk factors

Future Research

- Transition of biomarkers to clinical practice
- Biomarkers as link between pathology and clinical manifestations
- New drugs being researched:
- Monoclonal antibodies
- People with genetic mutations being studied for prevention
- Insulin Resistance, Intranasal insulin
- Beta secretase, Beta Amyloid, Tau-Vaccine, Inflammation (Microglia)

What's In the Works

2012 **First major clinical trial for prevention of Alzheimer's disease is initiated**

A multinational research consortium, the Dominantly Inherited Alzheimer Network, launches the first major clinical trial testing drug therapy to prevent the onset of Alzheimer's disease symptoms in people who inherited an autosomal dominant mutation putting them at high risk for the disease.

2013 **International Genomics of Alzheimer's Project (IGAP) researchers identify new genetic risk factors for Alzheimer's disease**

Hundreds of researchers from around the world collaborate to perform a meta-analysis of genome-wide association studies intended to identify genetic variations linked with an increased risk for Alzheimer's disease. The collaboration revealed 20 genetic variations associated with increased risk, 11 of which had not been linked with Alzheimer's before. Some of the newly identified genetic variations are thought to be specific to the immune system, adding to mounting evidence of a role for the immune system in Alzheimer's disease.

2014

Rates of death caused by Alzheimer's disease found to be much higher than reported on death certificates

Researchers at Rush University find that the annual number of deaths attributable to Alzheimer's disease in the U.S. among people at least 75 years old is about 500,000, much higher than the number reported on death certificates (<84,000).

Summary

- Dementia is increasing prevalent and expected to increase significantly
- Biomarkers and Transitions to Clinical Practice
- Available medications and limitations
- Modifiable Risk Factors
- Future Areas of Research
- Expanding collaboration and international networks

QUESTIONS?

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- http://www.alz.org/facts/downloads/facts_figures_2015.pdf
- http://www.alz.org/alzheimers_disease_stages_of_alzheimers.asp
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The Village at Gainesville
A SantaFe Senior Living Community

NORTH FLORIDA REGIONAL HEALTHCARE

BREAK

Advance Directives and End of Life Decision-Making

Shannon Miller, ESQ and Mary K. Wimsett, ESQ
The Miller Elder Law Firm, P.A.
www.MillerElderLawFirm.com
(352)-379-1900

The Village at Gainesville
A SantaFe Senior Living Community

NORTH FLORIDA REGIONAL HEALTHCARE

LUNCH

Which Came First?
Medications That Treat and Cause Dementia

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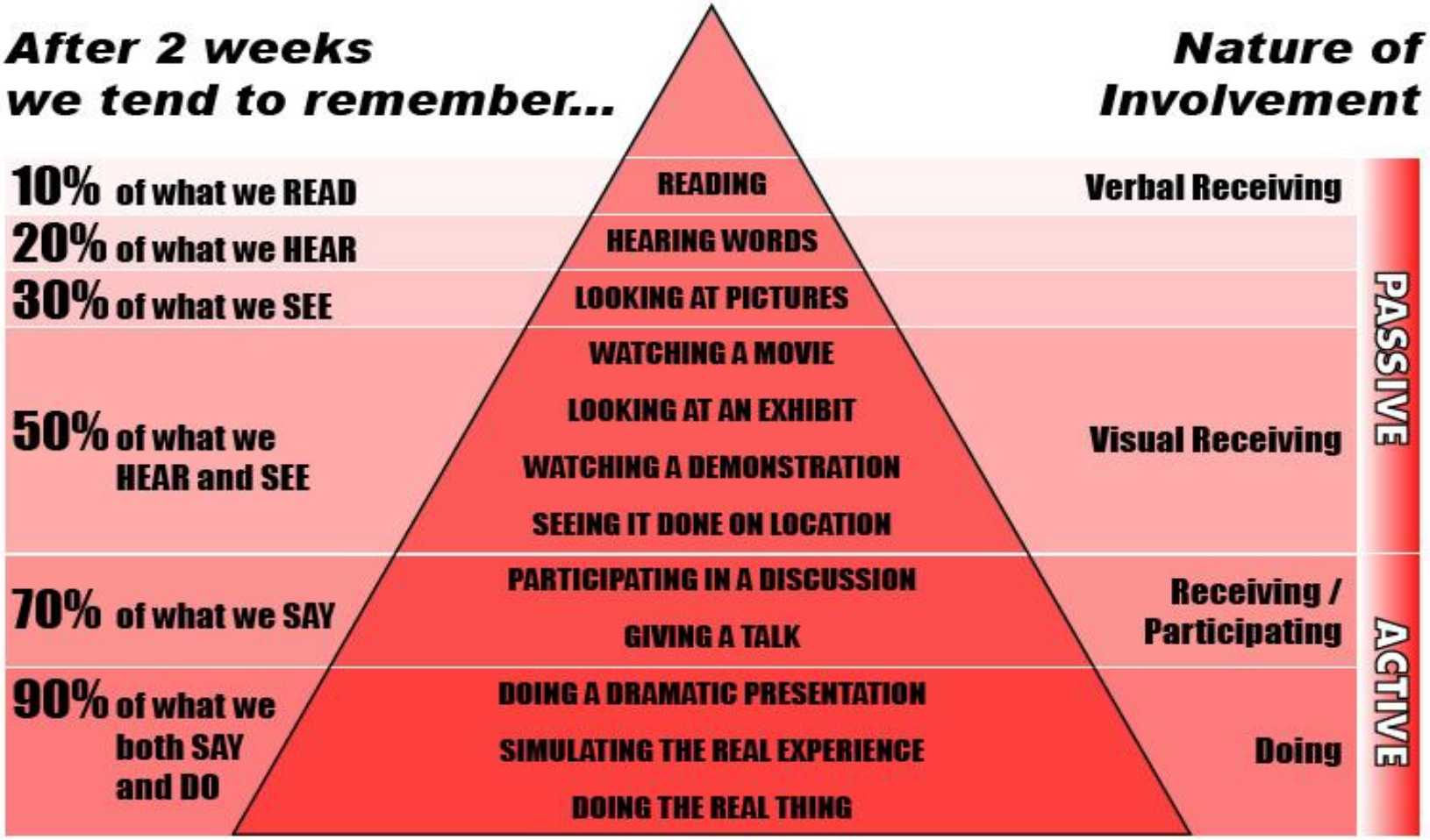
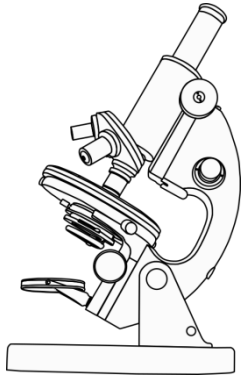
Cone of Learning (Edgar Dale)



Edgar Dale, *Audio-Visual Methods in Technology*, Holt, Rinehart and Winston.

Image source: *www.lowhaneyew.com*

Objectives



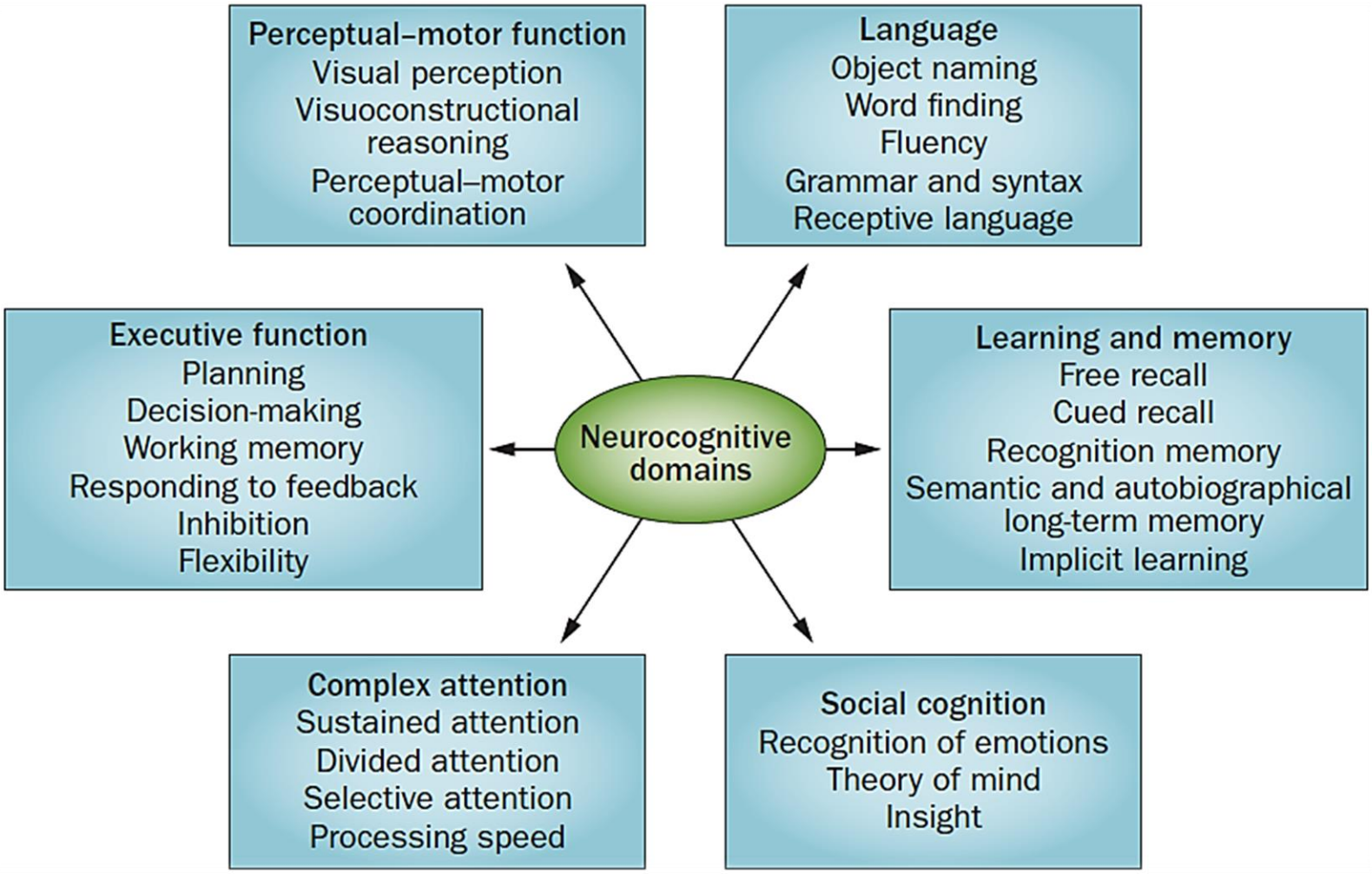
- Briefly review the epidemiology and pathophysiology of dementia
- Briefly review the different types of dementia – focusing on Alzheimer's Dementia (AD)
- Review medications used to treat dementia - focusing on Alzheimer's Dementia (AD)
- Review medications that may cause or worsen dementia

What is Dementia?

- Major Neurocognitive Disorder (DSM-5)
- "…Cognitive decline from a previous level of performance in at least two cognitive domains severe enough to interfere with independence in everyday activities…"
- Dementia is a syndrome

Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Rabins, PV et al. *Ann Intern Med* 2014; 1-16

Cognitive Domains



Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9

Epidemiology of Dementia

- 35.6 million people worldwide
- Mixed Dementia: 45%
- Prevalence in ages ≥ 65: 9-13%
- Annual Incidence in ages ≥ 65: 0.25% and doubles every 5 years
- 67% die in nursing homes
- $200 billion in healthcare cost

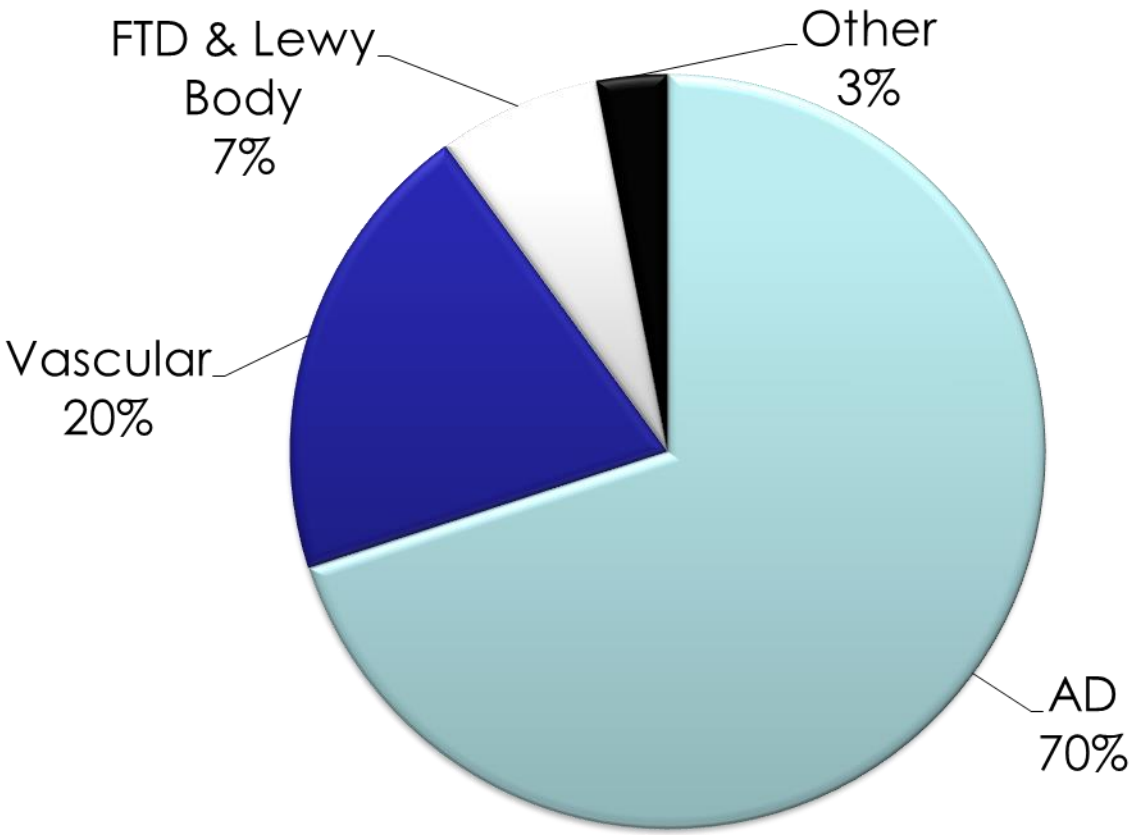
Rabins, PV et al. *Ann Intern Med* 2014; 1-16
Ngo J et al. *Age and Ageing*. 2014; 0: 1-9

Common Risk Factors

- **Non-modifiable**
  - Advanced age
  - Family history
  - Down Syndrome
- **Modifiable**
  - Hypertension
  - Hyperlipidemia
  - Diabetes
  - Depression
  - Smoking/alcohol abuse

Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Mayo Clinic. 2014

Types of Dementia



Rabins, PV et al. *Ann Intern Med* 2014; 1-16
Ngo J et al. *Age and Ageing*. 2014; 0: 1-9

Vascular Dementia (VaD)

- **Pathophysiology**
  - Conditions that block or reduce blood flow to the brain (e.g. cerebrovascular disease)
- **Domains:** complex attention, language, perceptual-motor function, and executive function
- **Signs/Symptoms**
  - Aphasia (difficulty speaking)
  - Hemiparesis (one-sided weakness)
  - Pseudobulbar Palsy (inability to control facial movements)
  - Visual field defects

Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Scott KR et al. *Expert Rev Neurother.* 2007; 7(4):407-22

Frontotemporal Dementia (FTD)

- **Pathophysiology**
  - Degeneration in the frontal and temporal lobes of the brain
- **Domains:** social cognition, executive function, and language
- **Signs/Symptoms**
  - Aphasia (difficulty speaking)
  - Disinhibition
  - Apathy
  - Inappropriate social conduct

Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Scott KR et al. *Expert Rev Neurother.* 2007; 7(4):407-22

Dementia with Lewy Bodies (DLB)

- **Pathophysiology**
  - Abnormal aggregation of proteins (mainly a-synuclien) that damage nerve cells over time
- **Domains:** perceptual-motor function, complex attention, language, and executive function
- **Signs/Symptoms**
  - Fluctuating lucidity
  - Visual hallucinations
  - Features of parkinsonism
  - Rapid eye movement (REM) sleep disorder

Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Alzheimer's Association 2014

Other Dementias

- **Non-reversible**
  - Mixed Dementia
  - HIV-associated Dementia
  - Parkinson's Disease
  - Traumatic Brain Injury (TBI)
  - Huntington's Disease
- **Reversible**
  - Medication-Induced
  - Metabolic/electrolyte abnormalities
  - Nutritional deficiencies

Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Scott KR et al. *Expert Rev Neurother.* 2007; 7(4):407-22

Alzheimer's Dementia (AD)

- **1906:** German physician Dr Alois Alzheimer first describes "a peculiar disease"
- *Auguste D., a patient who had profound memory loss, unfounded suspicions about her family, and other worsening psychological changes.*
- In her brain autopsy, he saw dramatic shrinkage and abnormal deposits in and around nerve cells.

Alzheimer's Association 2016

Alzheimer's Dementia (AD)

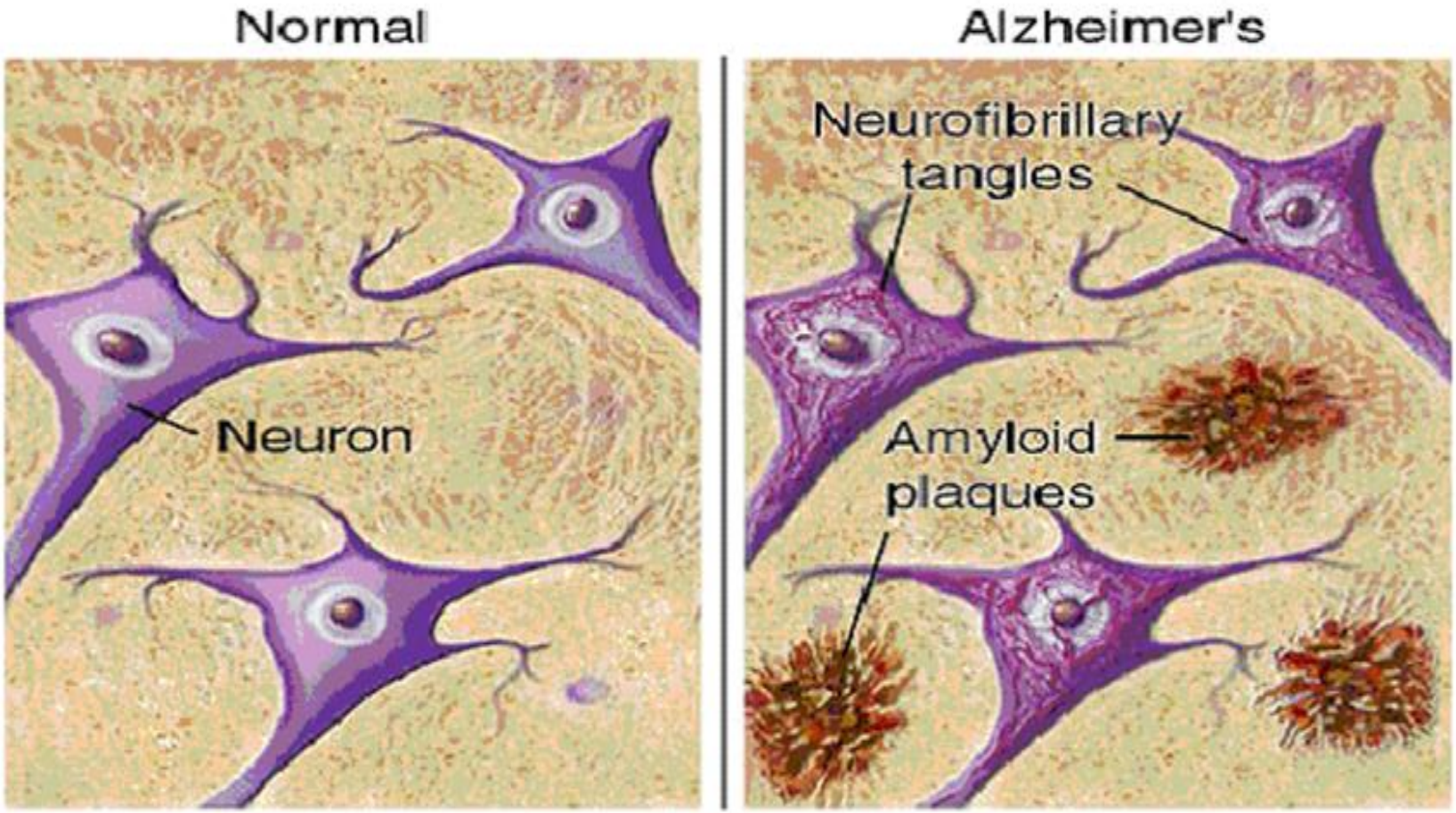


Image source: *healthanddisease12@blogspot.com*

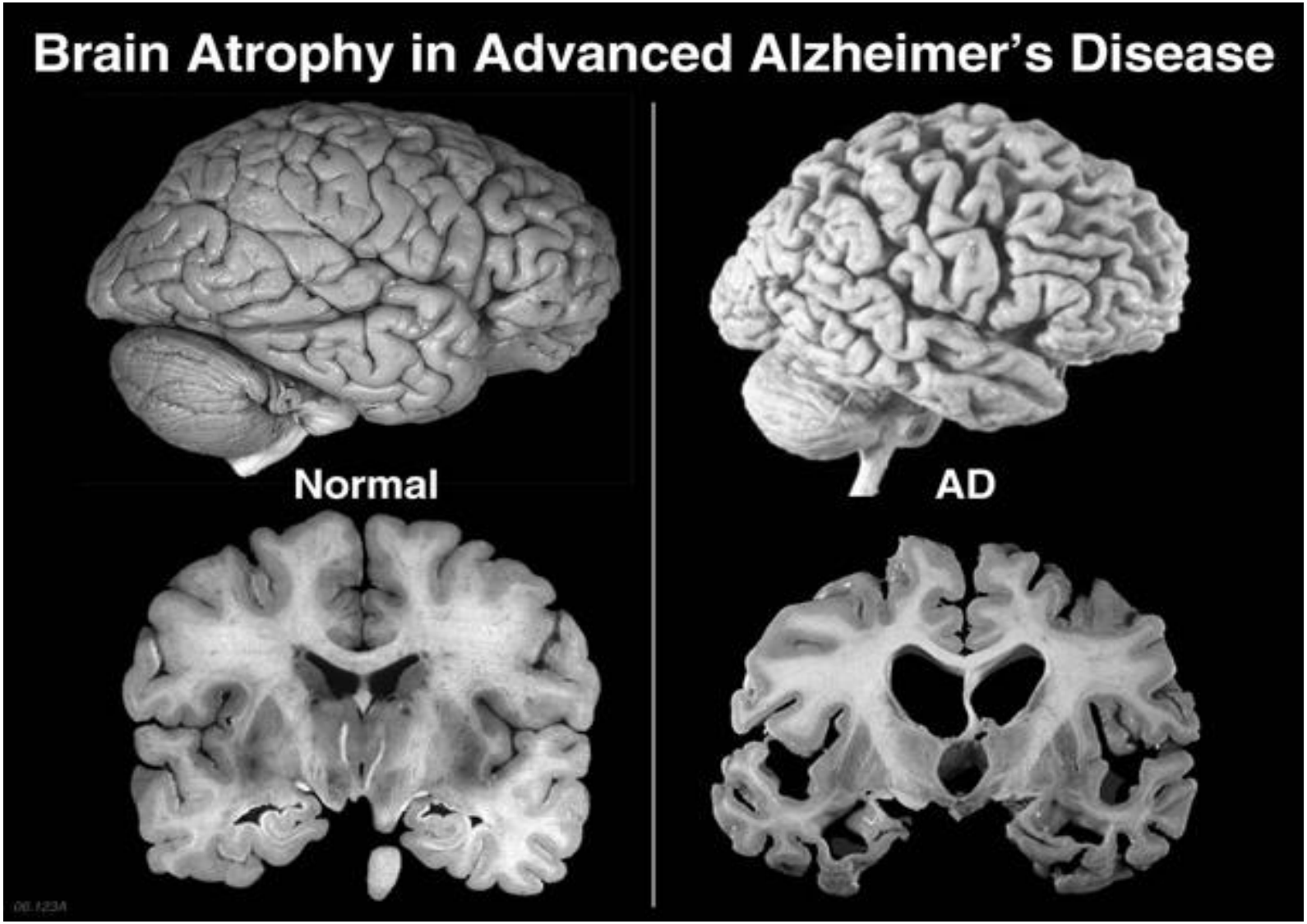


Image source: *www.brainmaxima.com*

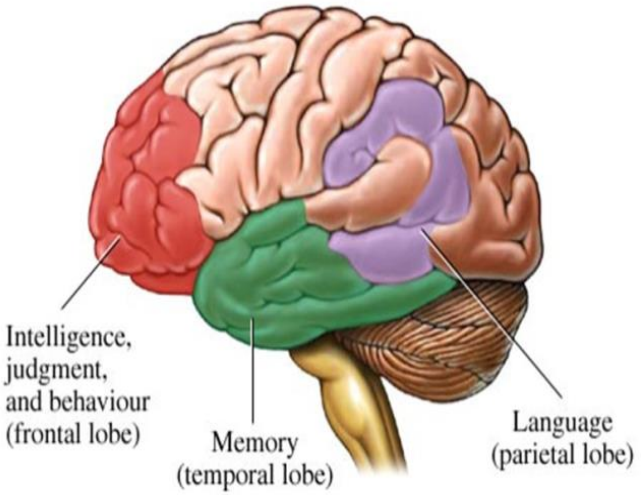
Alzheimer's Dementia (AD)

- **Pathophysiology**
  - Formation of plaques (β-Amyloid protein)
    - Block cell-to-cell signaling
    - Invoke immune response
  - Formation of tangles (Tau protein)
    - Disruption of nutrient transportation

Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Scott KR et al. *Expert Rev Neurother.* 2007; 7(4):407-22

Alzheimer's Dementia (AD)

- **Domains:** learning and memory, executive function, language, perceptual-motor function, and social cognition
- **Signs/Symptoms**
  - Difficulty remembering new information
  - Disorientation
  - Mood and behavior changes
  - Agnosia (inability to recognize objects, faces, voices, or places)
  - Aphasia (difficulty speaking)



Sachdev, PS et al. *Nat Rev Neurol* 2014; 1-9
Rabins, PV et al. *Ann Intern Med* 2014; 1-16

AD Assessment Tools

- **Cognitive Function**
  - Mini-Mental Status Examination (MMSE)
    - Orientation, registration, attention and calculation, recall, and language
  - Montreal Cognitive Assessment (MoCA)
    - Same areas of cognitive function as the MMSE
    - Clock drawing test and connect-the-dot test
- **Behavior**
  - Geriatric Depression Scale
    - Yes or No questionnaire

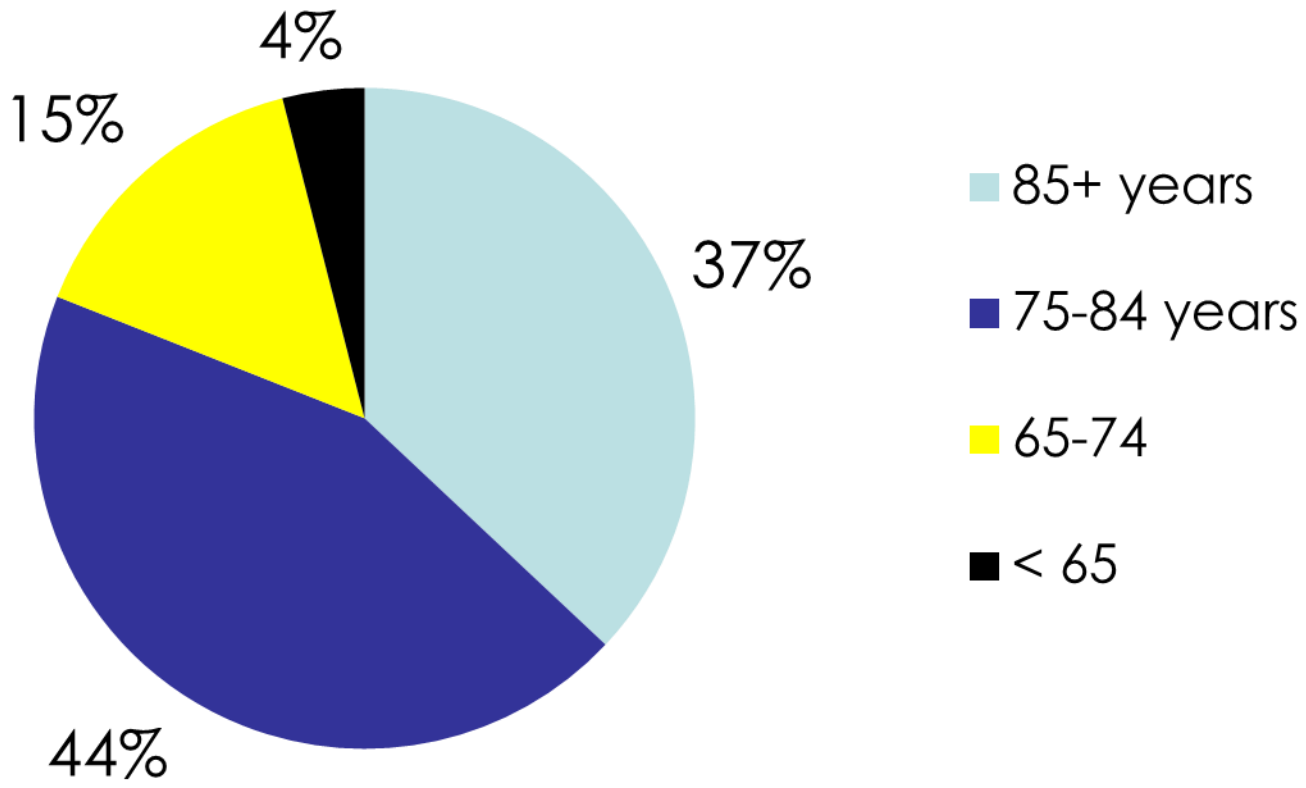
Folstein M, et al. *J Psychiatr Res.*1975; 12(3): 189-98
Kurlowicz L. *Hartford Institue for Geriatric Nursing.* 1999;(3)
Greenberg SA. *Hartford Institue for Geriatric Nursing*. 2012;(4)

Stages of AD

- **Mild (MMSE 21-23)**
  - Impairment of memory and executive function
  - Mild functional impairment
- **Moderate (MMSE 11-20)**
  - Cognitive deficits that impact language and recognition
  - Difficulties managing activities of daily living (ADL)
- **Severe (MMSE 0-10)**
  - Requires complete care for daily living

Pernezky R, et al. *Am J Geriatr Psychiatry.*2006; 14(2): 139-44
Reisberg B, et al. *Am J Psychiatry.* 1982; 139:1136-39

Ages of People with Alzheimer's Disease in the United States, 2016



Hebert, LE et al. *Neurol* . 2013;80(19):1778-83

TREATMENT

Medications Used to Treat AD

- Modulate Neurotransmitters
- **Acetylcholine (acetylcholinesterase inhibitors):**
  - Donepezil (Aricept®)
  - Rivastigmine (Exelon®)
  - Galantamine (Razadyne®)
- **Glutamate (partial N-methyl-D aspartate (NMDA) antagonist):**
  - Memantine (Namenda®)

Medications Used to Treat AD

Drug Name	Brand Name	Approved For	FDA Approved
Tacrine	Cognex®	Mild to moderate	1993 (2013)
Donepezil	Aricept®	All stages	1996
Rivastigmime*	Exelon®	All stages	2000
Galantamine	Razadyne®	Mild to moderate	2001
Memantime	Namenda®	Moderate to severe	2003
Donepezil and memantine	Namzaric®	Moderate to severe	2014

*Available as a patch

Acetylcholinesterase Inhibitors (AChEI)

- **Cholinergic Hypothesis:**
  - The destruction of brain cells due to the amyloid plaques and neurofibrillary tangles causes a shortage of neurotransmitters, leading to an even greater loss of brain cells.
- **Loss of neurotransmitters = loss of neurons**
- **Neurotransmitter = acetylcholine**

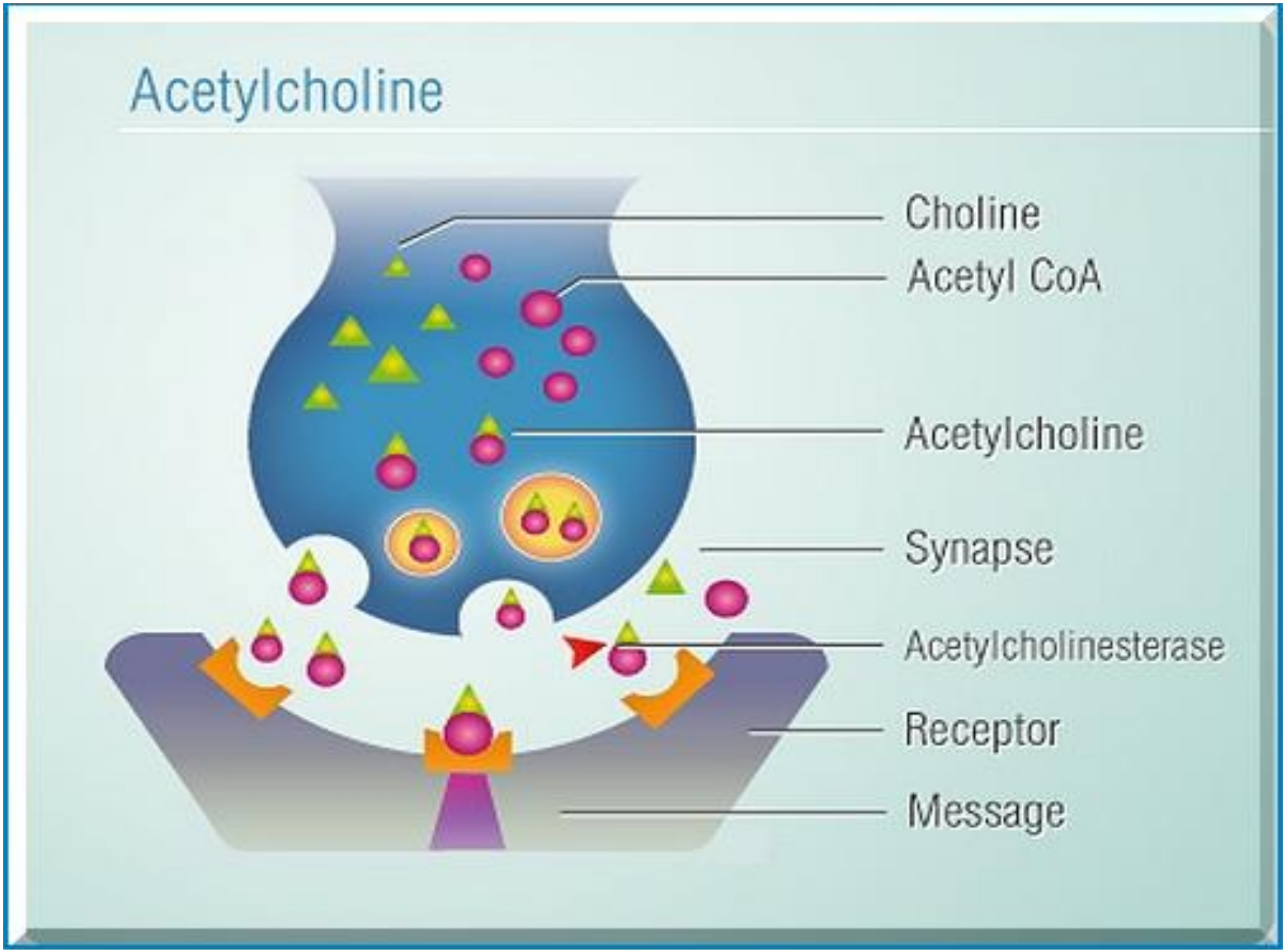


Image source: *www.dementiaguide.com*

AChEI – Benefits and Risks

- **Benefits:**
  - All severities of AD dementia
  - Affordability
  - Convenience
- **Risks:**
  - GI side effects
  - Dizziness/Syncope
  - Sleep disturbances
  - Questionable benefit outside of AD
    - Do not use for VD or FTD

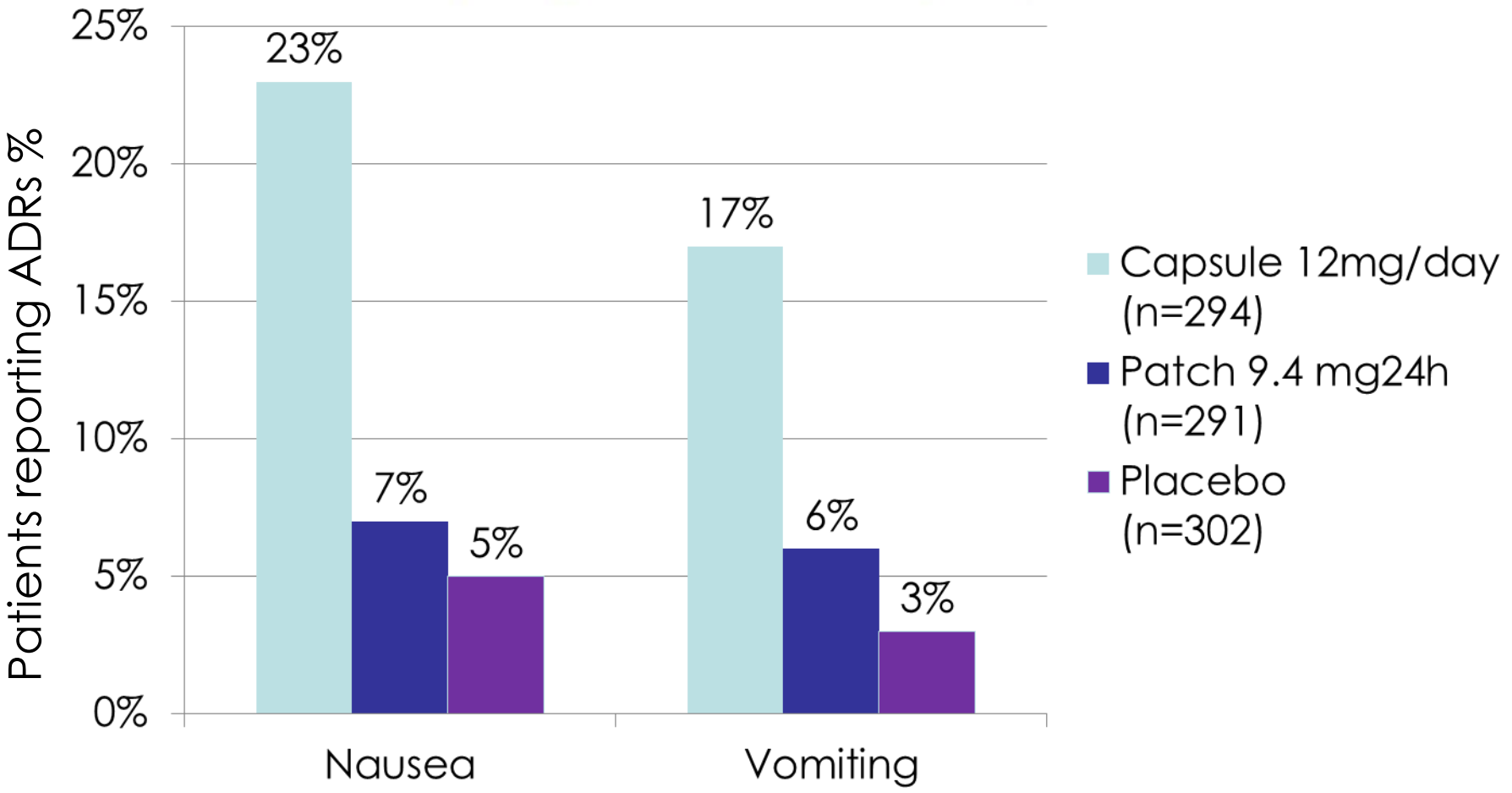
Ann Intern Med. 2014;161:ITC1.
Int Clin Psychopharmacol. 2013;28:346-8. | J Am Geriatr Soc. 2011;59:1019-31.
Am J Alzheimers Dis Other Demen. 2008;23:150-61.

AChEI - Available Agents

- **Donepezil (Aricept®)**
  - 5mg ↗ 23mg (ER)
  - Administered once daily
  - 20 mg divided dose therapy
- **Rivastigmine (Exelon®)**
  - Oral: 3mg/day ↗12mg/day
  - TD: 4.6mg/24hr ↗ 13.3mg/24hr
- **Galantamine (Razadyne®)**
  - 8mg/day ↗24mg/day
  - Name changed in 2004 (Reminyl®)

Ann Intern Med. 2014;161:ITC1. | Clin Ther. 2010;32:1234-51. | Drugs Aging. 2008;25:163-74.
Drugs Aging. 2014;31:639-49. | Drugs Aging. 2009;26:231-239 | Lancet Neurol. 2009;8:39-47

EXELON® PATCH
(rivastigmine transdermal system)



Exelon Patch Prescribing Information. Novartis Pharmaceuticals Corporation, East Hanover, NJ 2007
Image source: *dailymed.nlm.nih.gov*

NMDA Receptor Antagonist

- **Mechanism of Action:**
  - Block sustained activation of NMDA receptors caused by abnormal glutamatergic activity.
  - Sustained activation of NMDA receptors may lead to excessive calcium influx, neuronal dysfunction and cell death.

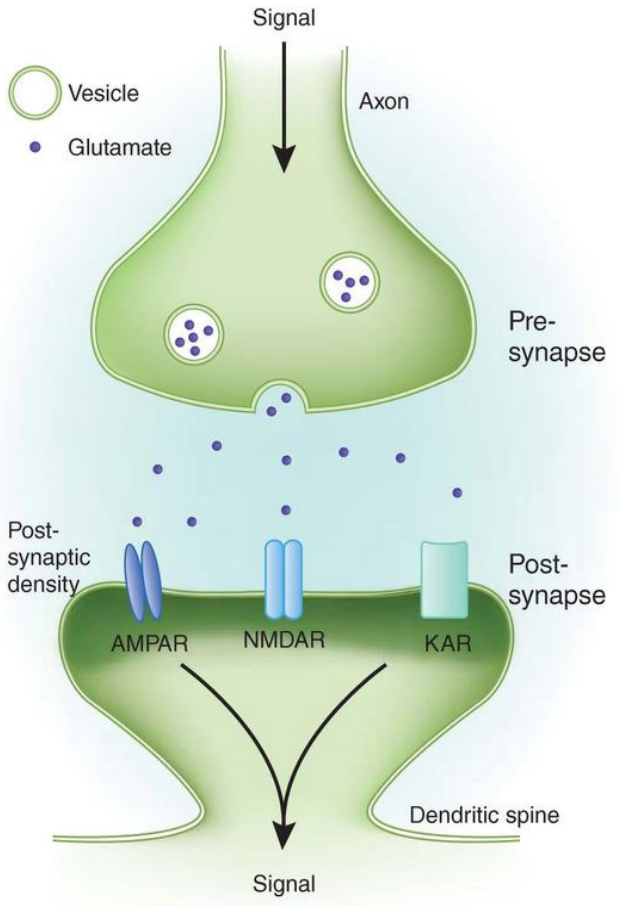


Image source: *www.nature.com*

NMDA Receptor Antagonist

- **Memantine (Namenda® and Namenda XR ®)**
  - 5mg/day↗20mg/day↗28mg/day (ER)
- **Benefits**
  - Demonstrated benefit alone or with AChEI
- **Risks**
  - No effect on patients with mild dementia
  - CNS effects (dizziness and HA)

Ann Intern Med. 2014;161:ITC1. | CNS Drugs. 2013;27:469-78. | Dement Geriatr Cogn Dis Extra. 2012;2:546-72.
N Engl J Med. 2012;366:893-903. | Arch Neurol. 2011;68:991-8. | J Am Geriatr Soc. 2011;59:1019-31.

Cognitive Agents and Expectations

- No reversal of decline
- No effect on mortality
- More for the caregiver than the patient
- Vanishing benefit

Ann Intern Med. 2014;161:ITC1. || Nat Rev Drug Discov. 2010;9:387-98. | Int Psychogeriatr. 2013;25:1559-60.

Depression

- Evaluate for co-morbid depression
- Begin with non-pharmacologic interventions
  - Cognitive behavioral therapy
  - Psychotherapy
- Pharmacologic management
  - Use only after non-pharmacologic approaches fail
  - Uncertain benefit
  - SSRIs are recommended
  - Avoid tricyclic antidepressants (TCAs)

Ngo J et al. Age and Ageing. 2014; 0: 1-9 | Ann Intern Med. 2014;161:ITC1. | Lancet. 2011;378:375-6. | JAMA. 2014;311:682-91.

Behavioral and Psychological Symptoms of Dementia (BPSD)

- Assessed at diagnosis and at regular intervals
- Identify and treat delirium
- Begin with non-pharmacologic interventions
  - Environmental modification
  - Music therapy
  - Massage therapy
- Pharmacologic management
  - Use sparingly and only after non-pharmacologic approaches fail

Ngo J et al. *Age and Ageing.* 2014; 0: 1-9

Antipsychotics

- **Second-generation/Atypical**
  - Risperidone (Risperdal) 0.5 mg BID
  - Olanzapine (Zyprexa) 5-10 mg/day
- **First-generation/Typical**
  - Haloperidol (Haldol)
    - 0.25 – 1 mg 1-2 times/day
    - Only benefit in aggression
- **Risks**
  - Death and decline

Ann Intern Med. 2014;161:ITC1. | Am J Geriatr Psychiatry. 2006;14:191-210.
Cochrane Database Syst Rev. 2002;(2):CD002852. | Cochrane Database Syst Rev. 2013 ;3:CD007726.

Medications To Avoid

- Anticholinergics
  - Antihistamines
  - Antimuscarinics (overactive bladder medications)
  - Antidepressants
- Benzodiazepines
- Steroids
- Pain Medication
- Chemotherapy
- Medications in question:
  - Statins (Lipitor®, Crestor®, Zocor®, Pravachol®)
  - Proton Pump Inhibitors (PPI) – Nexium®, Protonix®

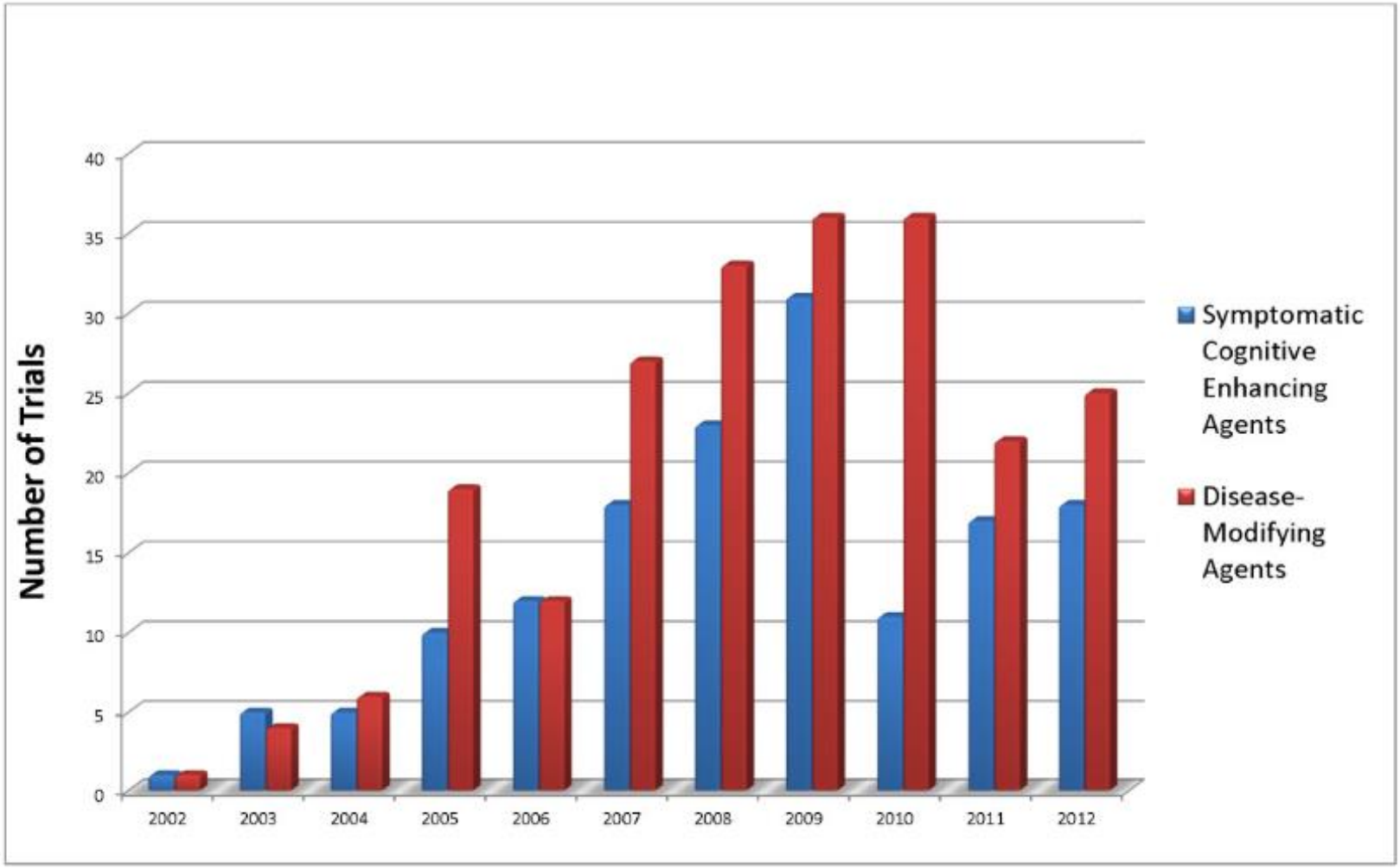
J Am Geriatr Soc 63:2227-2246, 2015
Swiger KJ et al. *Mayo Clinic Proceedings. 2013;88(11):1213-1221*
Gomm et al. *JAMA Neuro. 2016;73(4):410-416*

Beers Criteria - Anticholinergic Agents

Medication Class	Agents to Avoid
Antihistamines	Diphenhydramine, Hydroxyzine, Chlorpheniramine, Meclizine
Antidepressants	Amitriptyline, Imipramine, Doxepin, Paroxetine
Antipsychotics	Olanzapine
Antiparkinson	Benztropine, Trihexyphenidyl
Antimuscarinics	Oxybutynin, Tolteridine, Tropsium, Darifenacin
Antispasmodic	Dicyclomine, Hyoscyamine
Skeletal Muscle relaxants	Cyclobenzaprine, Orphenadrine

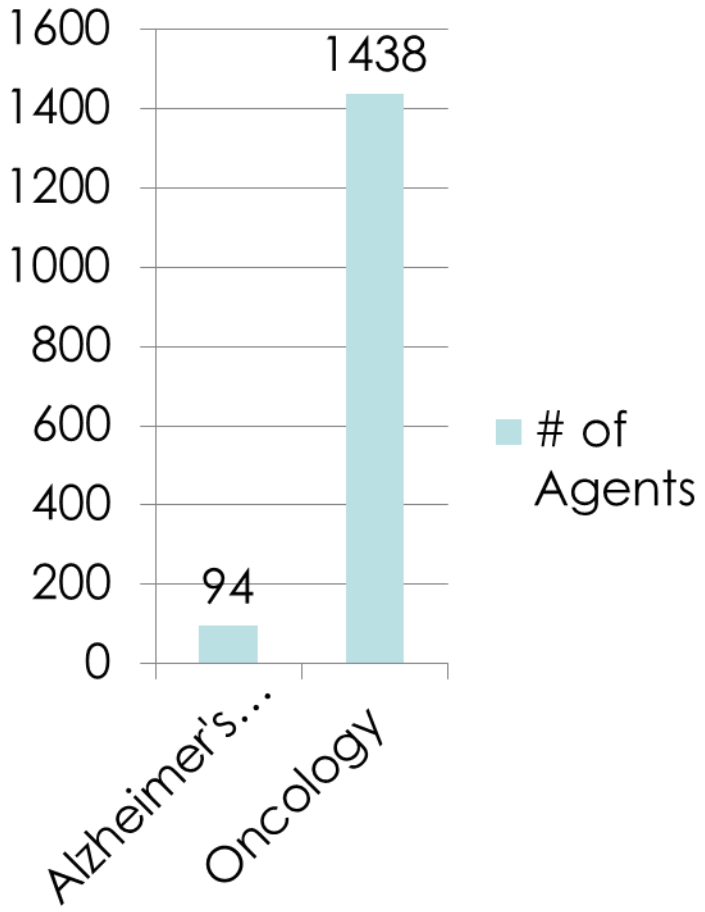
J Am Geriatr Soc 63:2227-2246, 2015.

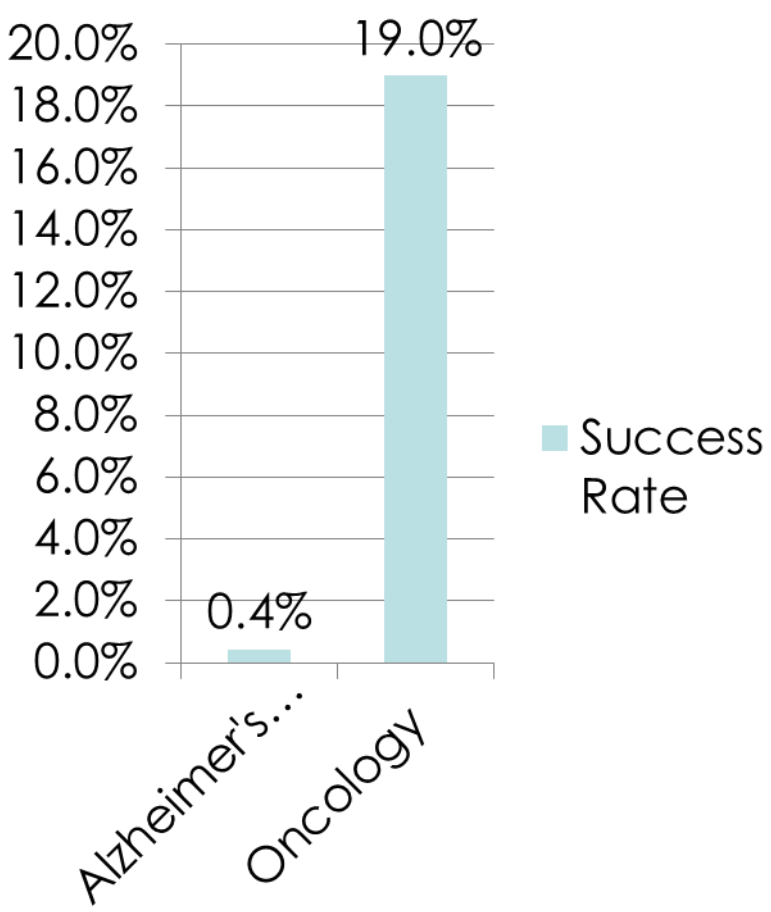
In the Pipeline



Cummings J et al. *Alzheimers Res Ther*. 2014;6:37

In the Pipeline





Cummings J et al. *Alzheimers Res Ther*. 2014;6:37

Questions?

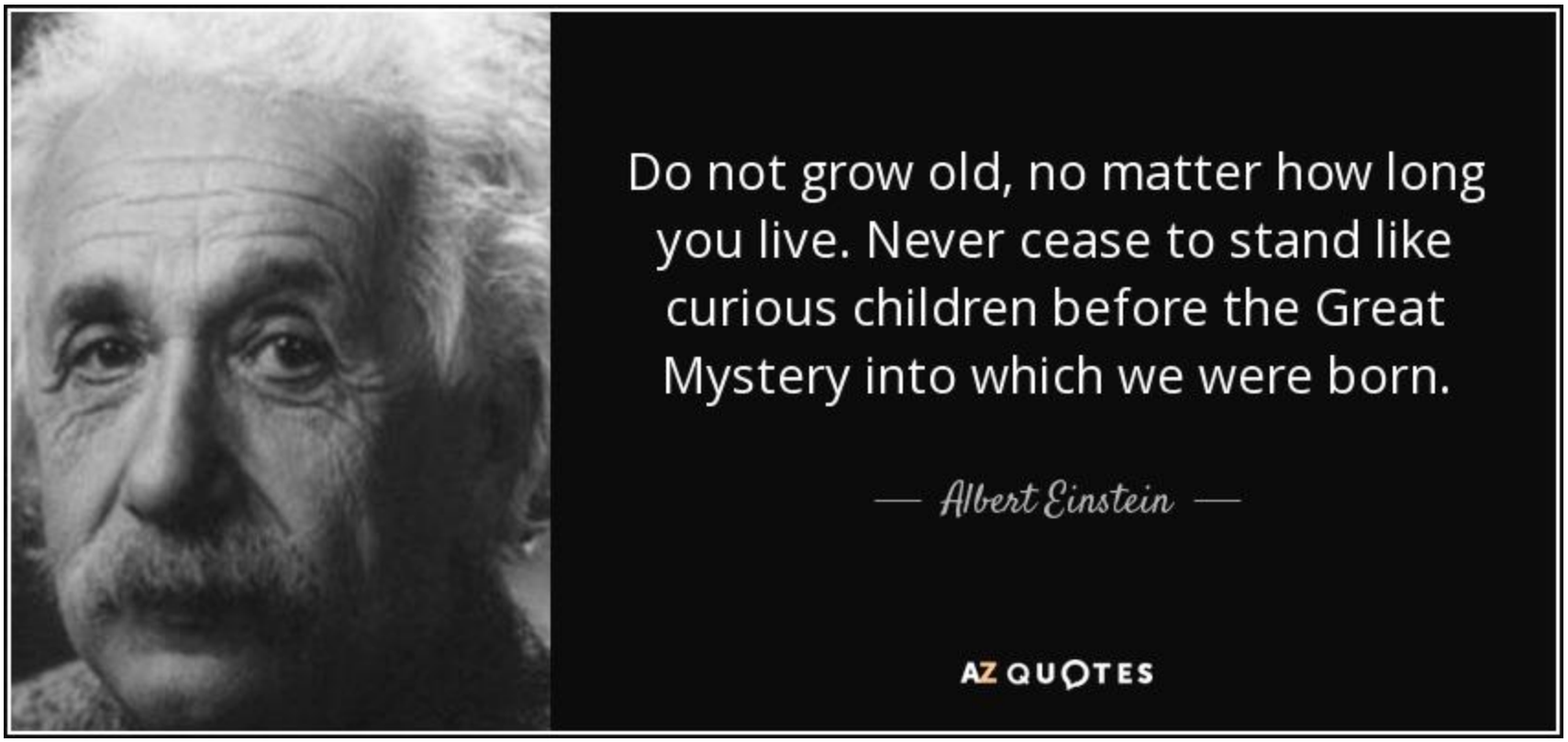


Image source www.azquotes.com

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NORTH FLORIDA REGIONAL HEALTHCARE

BREAK

Assessing Pain in Dementia Patients

Bobby Lafferty, DO
Senior Healthcare Center at Melrose
352-475-3794

PAIN
What is it?

- **Once thought to be a simple mechanism**: Nociceptive fibers connecting to Parietal Sensory cortex in the brain.
- Then came the identification of **Phantom, Chronic, and Central Pain**.
- More research showed different types of nerve fibers create different types of pain signals: A-delta=**Sharp Fast Pain**, C=**Slow Dull Pain**,
- **Thermoreceptors, Propioceptors, Mechanoreceptors, Nocioceptors etc.**
- However in the late 1800's the **Spinal Cord** was known to be modulating pain at each spinal segment. (Osteopathic Principles)

PAIN

- Now we know that Pain is an **infinite combination** of different factors.
- **Noxious** Stimuli
- Axial Nervous system modulation at the spinal nerve roots (Facilitated segments)
- Hypothalamic Modulation (Hormonal Responses) i.e. **adrenal** etc.
- Limbic System (Emotional modulation) Next slide

1 The Gerontologist vol. 40, No. 5, 574-581.

Limbic System

- "Primitive" Emotional Brain- Pain is not absolute but a highly variable experience.
  (Think Martial Arts, Firewalkers, Navy Seals or Olympic Athletes)
- Fight or Flight
- Anxiety and Depression
- Fear and Confusion
- Treatment example is using **anti-depressants** for adjunctive pain control for chronic pain.

Basically Pain Hurts

Contribution to Pain or Sequela of Pain:

- Fear
- Anger
- Anxiety
- Confusion
- Depression

Elderly Patients

- 86% of non-institutionalized rural elderly have had pain in the last year.
- 59% of them had Multiple pain complaints.
- Exceeds the percentage of younger patients who have pain.
- Only 15% of institutionalized patients get treatment of pain.
- Patients with **Cognitive Impairment** are often excluded from studies of pain in elderly persons!

Dementia

- Most studies looking at pain in dementia patients only study mild and moderate dementia.
- The reason is that Wong Baker requires verbalization skills and self reporting.
- Pain in Severe dementia is poorly understood and is often ignored.
- 40%-78% of nursing home residents have Dementia.
- 45%-84% of nursing home residents have Pain.

Journal of Pain and Symptom Management Vol. 25 No.1 January 2003.

Dementia Types

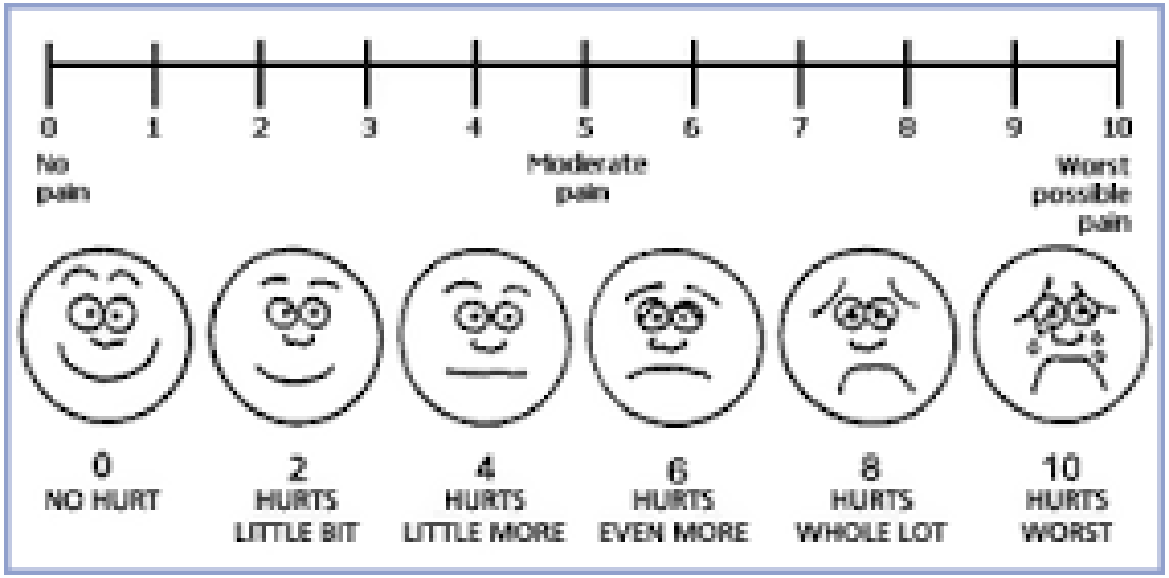
- **Alzheimer's Disease-** Progressive Memory loss and confusion, Regression to childlike state.
- **Vascular Dementia-** Multi-infarct, Large Vessel CVA- Speech is often preserved-Variable decline.
- **Frontotemporal Dementia-**Pick's Disease- Comprehension is impaired before speech.-compulsive behavior.
- **Parkinson's Dementia-**Physical decline before cognitive decline-Locked in syndromes common. Immobility usually occurs prior to sever dementia symptoms.
- **Lewy Body Dementia-**Characterized by Harmless hallucinations, ambulation is often preserved until the last stage of the disease. Frequently exhausts caregivers and staff.

Pain Assessment Scales

- The Most commonly used pain scale instruments are self reporting by patients. (Wong Baker 0-10) Visual analog Pain scale.
- The problem is what happens when the patient can't understand you or answer the questions?
- **Impaired Cognitive Ability-** Is a major risk factor for having untreated or uncontrolled pain!
- Just being over the **age of 75** is a risk factor for not having pain treated!

BMJ Volume 330 26 February 2005

WONG BAKER PAIN SCALE



PAIN AD scale

- **P**ain **A**ssessment **IN** **A**dvanced **D**ementia
- Published in 2003, Now in wide use because of simplicity and accuracy.
- The Key is accurate observation of the patient. However it can't be completed by reviewing the chart or looking at the computer.
- Can be accurately administered by everyone even untrained family members, caregivers, etc. (Almost as easy to use as wong baker visual analog pain scale)
- Gives the result in the universally understood 0-10 scale.

PAINAD score

Items*	0	1	2	Score
Breathing independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation.	Noisy labored breathing. Long period of hyperventilation. Cheyne-Stokes respirations.	
Negative vocalization	None	Occasional moan or groan. Low-level speech with a negative or disapproving quality.	Repeated troubled calling out. Loud moaning or groaning. Crying.	
Facial expression	Smiling or inexpressive	Sad. Frightened. Frown.	Facial grimacing.	
Body language	Relaxed	Tense. Distressed pacing. Fidgeting.	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract or reassure.	
			Total**	

Pain AD scale

- Simple
- Accurate
- Should probably be used to augment the Wong Baker scale in ambulatory non-impaired patients to help offset inaccurate self reporting.
- The only shortfall is that it must be administered with each pain assessment because the situation can change.
  Its **Observational**.

Pain Ad Scale

- If dosing of prn pain medication is q 4 hours then the scale needs to be done every 4 hours.
- Not necessary for **dosing** of long acting medications.
- Useful for assessment of Medication effectiveness.
- Easy and quick.

Case Study #1 Mary Mary Quite Contrary

87 year old non-verbal female with Alzheimer's disease.

- Always making a repetitive yodeling type sound but no respiratory distress
- Always smiling
- Occasionally would swat at someone but usually relaxed and cooperative.
- Sits with hands folded
- No change whether sitting alone or if someone sits with her.
- Score?

Mary Mary Quite Contrary

- One Day: I sat down with her she was non-verbal same as always then I held her hand. After about 5 minutes a "new" smile erupted……
- She pointed to her shoulder…….and made her "old" smile a Grimace!
- Now what is her scale?

Case Study #2 Arthur Author

- 97 year old male with Parkinson's Dementia
- Answers very loudly "YEA" to every question, No respiratory distress.
- Flat affect- never changed.
- In wheel chair "wheelchair derby" Never stops moving and wheeling himself around the facility.
- Annoying other residents, staff, visitors. Loved for others to talk to him.
- I was called to give the patient something for pain.

Arthur Author

- Pain AD scale: 2/10
- Normal breathing
- No repetitive negative vocalization
- Parkinson's blunts affect (1)
- Wheelchair "Pacing" (1)
- Being social isn't necessarily needing to be consoled.

Arthur Author

- After treatment (Companionship volunteer) Pain scale reduced to 1/10 due to flat affect, but he seemed to be smiling on the inside, so maybe 0/10!

Case Study #3 Hey SI!

- 76 year old Vascular Dementia patient
- Agitated every day, Striking, kicking, spitting out meds, growling, punching.
- Tearful at times, begging to go home. Yelling at staff to get away from him.
- Hx of severe lumbar spondylosis/spondylolisthesis
- Hyperventilating often when grimacing.
- Didn't responded to Ativan, seemed to get worse.

Hey Si

- Score 10/10
- On Lortab 10/325 q 4 hours prn. (Averaged 1 dose a day)
- Tapered off Ativan started Depakote reduced agitation quite a bit but scale was still 7/10
- Titrated pain medications up to MS contin 60 q 12 hrs, Lortab 10 q 4 hours prn with an ordered Pain AD scale every 4 hours.
- 1 week later pain score was 0/0, Pleasant, smiling, conversive, and remembering the old stories about Haysi. I recognized his accent.

Go Forth and Conquer

- "Healing Doesn't mean you live forever, but that you came, fulfilled your purpose and then went home". Bobby Lafferty DO
  - Hopefully you will help some others along the way.
    - Many Blessing!!!!!!!

    - Thank YOU!!!!!!!

Questions?

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NORTH FLORIDA REGIONAL HEALTHCARE

The Positive™ Approach to Care and Senior GEMS™

Carolyn Lukert, CGCM
Vitality Manager and Memory Support Liaison
North Florida Retirement Village

Objectives

By the end of this session, you should be able to:

- Demonstrate the key components of the Positive™ Approach to Care, a methodology that relies on using a consistent approach, supportive communication, and knowledge about an individual's past to connect and communicate effectively.

- List and understand the Senior GEMs™, a progression model based on the Allen Cognitive scale that focuses on the abilities that remain versus what have been lost.

Who is Teepa Snow?

Teepa L. Snow, MS, OTR/L, FAOTA

Dementia Can Be Treated

- With knowledge
- With skill building
- With commitment
- With flexibility
- With practice
- With support
- With compassion

Positive™ Approach to Care

Build Skill

- Positive Physical Approach™
- Hand Under Hand™
  - ✓ for connection
  - ✓ for assistance
- Supportive Communication
- Consistent & Skill Sensitive Cues
  - ✓ Visual, verbal, physical
- Open and Willing Heart, Head & Hands

Use Hand-Under-Hand™

- Connecting – comforting and directing gaze
- Guiding and helping with movement
- Getting eye contact and attention
- Providing help with fine motor
- Offering a sense of control, even when you are doing almost everything
- Substitution, Not Subtraction

Approach Matters

Use a consistent Positive Physical Approach™

- Pause at edge of public space
- Gesture and greet by name
- Offer your hand and make eye contact
- Approach slowly within visual range
- Shake hands and maintain Hand-Under-Hand™
- Move to the side
- Get to eye level & respect intimate space
- Wait for acknowledgement

Supportive Communication

Make a connection

- Offer your name – “I’m (NAME)… and you are…”
- Offer a shared background – “I’m from (place) …and you’re from…”
- Offer a positive personal comment – “You look great in that ….” or “I love that color on you…”

First Connect, Then Do "Remember the Cues"

- 1st – Visual
- 2nd – Verbal
- 3rd – Touch

For ALL Communication

If what you are trying is NOT working…

- STOP
- Back off
- THINK IT THROUGH…
- Then, re-approach
- And try something slightly different

Gem Dementia Abilities
Based on Allen Cognitive Levels

- A Cognitive Disability Theory – OT based
- Creates a common language and approach to providing:
  - ✓ Environmental support
  - ✓ Caregiver support and cueing strategies
  - ✓ Expectations for retained ability and lost skill
  - ✓ Promotes graded task modification
- Each Gem state requires a special 'setting' and 'just right' care
  - ✓ Visual, verbal, touch communication cues
- Each can shine

Sapphires – True Blue – Slower BUT Fine

Diamonds – Repeats & Routines, Cutting

Emeralds – Going – Time Travel – Where?

Ambers – In the moment - Sensations

Rubies – Stop & Go – No Fine Control

Pearls – Hidden in a Shell - Immobile

Sapphires

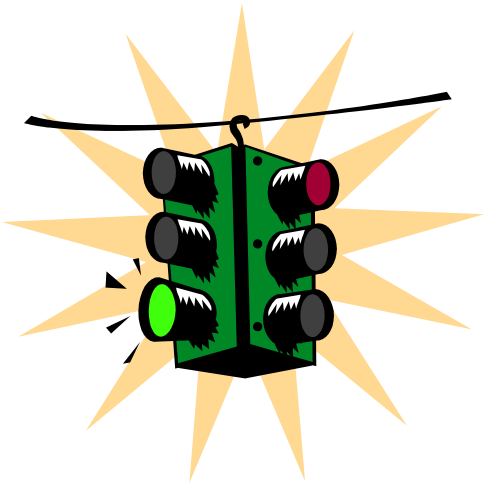
- Us on a good day…
- Clear & True to Themselves
- May feel ‘blue’ over changes
- Some are ‘stars’ and some are not
- They can CHOOSE

Diamonds

- Still Clear
- Sharp - Can Cut
- Hard - Rigid - Inflexible
- Many Facets
- Can Really Shine

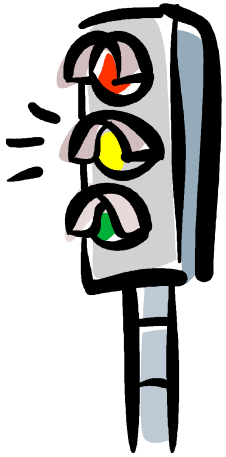
Emeralds

- Changing color
- Not as Clear or Sharp - Vague
- Good to Go – Need to ‘DO’
- Flaws are Hidden
- Time Traveling



Amber

- Amber Alert
- Caution!
- Caught in a moment
- All about Sensation
- Explorers



Rubies

- Hidden Depths
- Red Light on Fine Motor
- Comprehension & Speech Halt
- Coordination Falters
- Wake-Sleep Patterns are Gone

Pearls

- Hidden in a Shell
- Still & Quiet
- Easily Lost
- Beautiful - Layered
- Unable to Move – Hard to Connect
- Primitive Reflexes on the Outside

IN THE RIGHT SETTING, WITH THE RIGHT CARE, ANY GEM CAN SHINE!

QUESTIONS

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SURVEYS & CERTIFICATES


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We are with you for life.

THANK YOU


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