

CE Course Handout

Have you Met Alice? Understanding Dementia

Thursday, June 9, 2016
9:30 a.m.-12:30 p.m.



COURSE TITLE: Have You Met Alice? Understanding Dementia*

COURSE INSTRUCTOR: Doreen Naughton, RDH, BSDH

COURSE CREDITS: 3.0 CEUs

COURSE DATE: Thursday, June 9, 2016, 9:30 am to 12:30 pm

COURSE DESCRIPTION: Still Alice, the novel and the movie is an emotional portrait of a woman with Alzheimer's disease. You have likely already met Alice in your practice, or perhaps you have and didn't know it, or you soon will meet her... or Alex, or Abe or Anna. Given the increasing age of Americans and the fact that today there are at least 5 million adults with age-related dementias, it is important for dental professional to care for these patients in private practices or in alternative living setting. This course will help dental professionals gain a better understanding of dementia. It will include: a review of basic brain anatomy and physiology related to memory; a discussion of early warning signs of dementia and reversible causes of symptoms; a differentiation among various dementia types, identification of risk factors and promotion of prevention strategies; and information about current research and medications used for the treatment of dementias. Finally it will offer treatment strategies for safe treatment and quality of life for adults with dementia.

LEARNING OBJECTIVES:

- Define dementia
- Discuss aging and the occurrence of dementia
- Review basic brain anatomy/physiology related to memory
- Differentiate between reversible and irreversible dementia
- Identify symptoms of Alzheimer's disease and other dementias
- Discuss medications and recent research
- Identify risk factors and promote prevention strategies
- Use basic diagnostic screening tools
- Consider treatment approaches for safety and quality of life

INSTRUCTOR: Doreen Naughton, RDH, BSDH is a clinician, educator, consultant, author, presenter, and the sole proprietor of Dental Hygiene Health Services. For twenty-seven years she has provided dental hygiene services for over 3500 elderly or disabled adults in alternate living facilities. She has served as president of the Washington State Dental Hygienists' Association and as District XII Trustee for ADHA and has received recognition and awards including the ADHA Excellence in Dental Hygiene Award in 2000.

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1  **Welcome!**


2  **Have you Met Alice? Understanding Dementia**

3  **Objectives:**

- Define dementia
- Discuss aging and the occurrence of dementia
- Review basic brain anatomy/physiology related to memory
- Differentiate between reversible and irreversible dementia
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- Consider treatment approaches for safety and quality of life
-

4  **Define "Dementia"**

- Taber's Medical Dictionary
 - A progressive, irreversible decline in mental function.
- Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5); 2013
 - Dementia = Major Neurocognitive Disorder

5  **Major Neurocognitive Disorder**

- Criteria –
 - One or more acquired significant impairments in cognitive domains such as:
 - Memory (amnesia)
 - Language (aphasia)
 - Execution of purposeful movement (apraxia)
 - Recognition/familiarity (agnosia)
 - Visuospatial function (topographical disorientation)
 - Self control/management (executive functions impairment)
 - Other examples:
 - Mathematics (dyscalculia)
 - Emotional expression/comprehension (dysprosody)
 - Writing (agraphia)

6  **DMS – IV vs. DMS-5:**

- 1 • DSM-5 (2013):
 - Complex attention
 - Executive function
 - Learning & memory
 - Language
 - Perceptual-motor
 - Social cognition
- 2 • DSM-IV (1994):
 - Memory impairment
 - Aphasia
 - Apraxia
 - Agnosia
 - Executive dysfunction

7  **How prevalent is dementia?1**

- 1 • Worldwide
 - 47.5 million
 - aged ≥ 60
 - 5 to 8 cases per 100 people
 - 58% live in low- and middle-income countries
 - 2015 cost
 - US\$818 billion
- 2 – Projections
 - 75.6 million by 2030
 - 135.5 million by 2050
 - 7.7 million new every year
- Major cause of
 - disability
 - dependency among older people

8  **How prevalent is dementia in U.S.?2**

- Age ≤ 60 = 1%
- Age 65-75 = 5-8%
- Age 75-85 = 15-20%
- Age ≥ 85 = 50%
- Age ≥ 90 = 33% do not have dementia


9  **Demographics of Aging in America**

Over age 65:

- 1900 4% 3 million
- 1980 11% 25 million
- 1990 12% 31 million
- 2000 13% 39 million
- 2010 14% 40 million
- 2020 18% 52 million
- 2030 21% 60 million

10  **Dementia –
A Public Health Crisis**

- 1 • Occurrence
 - 5 million ≥ age 65 (2013)
 - 13.8 million (2050)
- Risk factor
 - #1 is Aging
 - Doubles every 5 years after age 65
- 6th cause of death (US)
- 2 • Cost
 - \$213 Billion direct costs
 - Medicare cost for last 5 yr of life \$287,038
 - Caregivers (non-paid)
 - 15 million Americans average 21.9 hours/wk in care of family member

11  **Healthy Brain Initiative (2013-2018)**

- Outlines how state and local public health agencies and their partners can promote cognitive functioning
- Address cognitive impairment for individuals living in the community

- Help meet the needs of care partners

12  **Human Brain**

13  **Lobes of Cerebrum**


- Frontal
- Parietal
- Occipital
- Temporal

14  **Midsagittal**

- Cerebellum
- Limbic System
 - Thalamus
 - Hypothalamus,
 - Amygdala
 - Hippocampus
- Corpus callosum
- Cerebral cortex

15  **Cellular Components of Brain1**
 16  **Neurons and Glial Cells**

17  **Cellular Components of Brain2**

- 1  • Neurons
 - Half volume CNS/ 10^{11}
 - Types
 - Sensory
 - Motor
 - Interneurons
 - Neurogenesis
 - Neuroplasticity

18  **Neurons**

- Multipolar neurons
 - Dendrites receive impulses
 - Cell body contains nucleus
 - metabolism
 - Axon conducts impulse
 - Electro-chemical impulse
 - Terminal ending synapse
- Chemical transmitters
 - Neurotransmitters
 - Acetylcholine
 - Gamma-amino butyric acid (GABA)
 - Serotonin
 - Dopamine
 - Norepinephrine
 - Endorphin
 - Stimulate/inhibit cell activity

19  **Glial Cells**
AKA neuroglia or glia cells

- 1 • Non-neural
 - 10-15 times # of neurons
 - Types
 - Astrocyte
 - Oligodendrocyte
 - Microglia
- 2 • Functions
 - Maintain homeostasis
 - Functional/structural neuron support
 - Support/protect neurons
 - Form myelin/insulate neurons
 - Eliminate necrotic neurons
 - Phagocytose pathogens

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21  **Glial cells1**

- 1 • Astrocytes
 - Star shaped
 - Physical support
 - Isolate synapses
 - Phagocytes
 - Store glycogen
 - Metabolize glucose to lactate
 - Release into extracellular fluid
 - Absorbed by neurons for energy

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Brain Anatomy - Glial cells2

- 1 • Microglia
 - Large cells
 - Part of immune system
 - Phagocytes
 - Immune defense for CNS
 - Mediates inflammatory response

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Brain Anatomy - Glial cells

- Oligodendrocytes
 - Support and insulate axons
 - Formation of myelin sheaths
 - Enables saltatory conduction at nodes of Ranvier
 - May regulate ionic homeostasis





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**Glymphatic System –
 Neural Waste Disposal**
 Incoming fluid

Outgoing fluid

25 

Human Memory1
 • Acquire

-
- Consolidate
-
- Retrieve
- 26  **Human Memory2**
 - Acquire
 - Information Perceived and Processed
 - Sensory-store memory
 - Cerebral cortex
 - Seconds to a minute
 - Short term memory (working memory)
 - Selective memory
- 27  **Human Memory3**
 - Consolidate
 - Strengthen and reinforce neuronal connections
 - Hippocampus
 - Long-term memory
 - Practice and rehearse
 - Pre-existing relationship
 - Pair with other information
 - Stimulating or meaningful
 - Precedes a good night sleep
 - REM aides in consolidation
- 28  **Human Memory4**
 - Retrieve
 - Accuracy vs. inaccuracy
 - Reconstruction for logic
 - Recall may vary
 - Belief in accuracy
- 29  **How to improve memory**
 - 1 • Get organized
 - Calendar
 - To do lists
 - Write items down
 - Sleep 7-8 hr
 - Brain games
 - Challenge brain 20 min/day
 - Master a new skill
 - Foreign language
 - Interesting tasks hold your attention
 - Brain dyes to detect ALZ
 - 2 • Learn something just before bedtime
 - Write it down 3 times
 - Exercise more
 - Increases growth of new neurons
 - Drink more milk
 - 5-6 glasses/wk
 - Better on memory tests
 - Diet
 - Fruits, veggies, grain,
 - Stay mentally active

- Mix it up
- Stimulate brain by using alternate routes

30 **Modern Biological Theories of Aging**

- 1 Programmed
 - 2 • Programmed Longevity
 - sequential switching on/off of certain genes
 - Endocrine
 - hormonally regulated
 - insulin/IGF-1 signaling (IIS) pathway
 - Immunological
 - decline over time
 - peaks at puberty
- 3 Damage or Error
- 4 • Wear and tear
 - Rate of living
 - oxygen basal metabolism
 - hard-wired antagonism of growth
 - stress resistance
 - Cross-linking theory
 - Free radicals
 - Somatic DNA damage

31 **Normal Aging/AAMI1**

- Begins in 40's –50's
- Brain weight
 - Increases until 25
 - Decrease by age 70
 - 5% in females
 - 10% loss in men
 - Decrease by age 80
 - 17-20% weight in both sexes
- Small cognitive loss
- Wisdom, judgment, language skills stable

32 **Normal Aging/AAMI2**

- 1 • Neuronal loss
 - Synaptic loss
 - Synaptoclastic/ synaptoblastic imbalance
 - Neurogenesis
 - Increased mental activity
 - Reduce stress
 - Neuroplasticity
 - New neural connections
 - Compensate for injury/ disease
 - Adjust to environment
- 2 • Cerebrovascular
 - Arteriosclerosis
 - Elasticity decreases
 - Capillaries
 - Decrease in number
 - Decrease in thickness
 - Abnormal formations

- Cerebral blood flow
 - Decrease in amount
 - Decrease glucose utilization
- Hypertension
- Chronic inflammation
- Metabolic syndrome/Insulin resistance

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Reversible Dementia?

- 1
 - Psychological
 - Depression
 - Anxiety
 - Delirium
 - Medication
 - Side effects
 - Drug interactions
 - Overdoses
 - Drug abuse
 - Alcohol abuse
 - Traumatic brain injury
 - Chronic epilepsy
 - Vitamin/mineral deficiency
- 2
 - Infections
 - UTI
 - Pneumonias
 - Metabolic imbalances
 - Dehydration
 - Kidney failure
 - COPD
 - Hormonal
 - Thyroid disease
 - Normal pressure hydrocephalus
 - Degenerative disorders
 - Others...

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Types of Dementia

- 1
 - Alzheimer’s disease (AD)
 - Vascular cognitive impairment (VCI)
 - Parkinson’s dementia (PDD)
 - Lewy Bodies Dementia (LBD)
 - Frontal temporal Lobe diseases (FTLD)
 - Huntington’s Chorea (HC)
 - Creutzfeldt-Jakob disease (CJD)
 - Prion Diseases
- 2
 - Secondary dementias
 - Others...

40  **Alzheimer's Disease (AD)1**

- 1 • Identified 1907 by
Alois Alzheimer
- Afflicts 5.4 million Americans (2016)
 - 5.1 million over age 65
 - 200,000 younger onset
 - 6 leading cause of death (5th for over 65)
- Age is principle risk factor
 - Early onset in 40-50's largely genetic
 - Late onset in 60+
- 2 • 50-70% of all dementias
- Memory impairment
- Exact cause unknown
- No known cure
- Cost \$236 billion annually

41 42 43 44 45  **Alzheimer's Disease3**

- Early mild symptoms
 - Poor sense of smell
 - Falls, balance, gait change
 - Confusion/moderate working memory loss
 - Language problems
 - Depression
 - Disorientation/getting lost in familiar places
 - Changes in personality
 - Changes in judgment
 - Awareness of symptoms

46  **Alzheimer's Disease4**








- Moderate symptoms
 - Increased loss working memory
 - Long term memory loss
 - Difficulty with activities of daily living (ADL)
 - Anxiety, suspiciousness, agitation, aggression
 - Sleep problems
 - Wandering/pacing
 - Difficulty recognizing family/friends

47  **Alzheimer's Disease5**

- Advanced severe symptoms
 - Dependent on others for all care
 - Loss of language ability
 - Complete loss of memory/intellect
 - Loss of appetite/weight loss
 - Loss of bladder/bowel control
 - Bedridden/vegetative state/terminal

48  **Positron Emission Tomography PET Scan**

- PET shows the activity of brain cells in different regions of the brain. The red, orange and yellow areas are the most active areas. The green, yellow and violet areas are the least active. *In AD the back portions of the brain have the least activity. These areas*

- process language and memory.
- 49  **Alzheimer's 3 subtypes1**
- Inflammatory
 - Non-inflammatory
 - Cortical Alzheimer's disease
- 50  **Alzheimer's 3 subtypes2**
- Inflammatory
 - Increased
 - C-reactive protein
 - TNF-alpha
 - Serum albumin:globulin ratios
 - Primarily Innate immune system
 - Evidence of systemic inflammation in some pts.
- 51  **Alzheimer's 3 subtypes3**
- Non-inflammatory
 - Inflammatory markers not elevated
 - Metabolic abnormalities present
 - Insulin resistance
 - Fat middle obesity
 - Diabetes type II
 - Level of glucose elevated
 - Hyperhomocysteinemia
 - Deficiencies B6, B9, B12
 - Hormonal loss due to early ovary removal
- 52  **Alzheimer's 3 subtypes4**
- Cortical Alzheimer's disease
 - Affects younger adults (40-60)
 - Appears more widespread in brain
 - Loss of language skill predominates
 - Memory loss not first sign of disease
 - Not dependent genetic predisposition (APOE4 etc)
 - Associated with significant zinc deficiency which is related to aging, cognitive performance, insulin resistance, Inflammation
- 53 
- 54  **Good/Bad Modifiable Risk Factors for AD1**
- Good factors
 - Coffee
 - Vitamins C & E
 - Folate (B9)
 - NSAIDS
 - Statins
 - Antihypertensive meds
 - Estrogen supplementation
- 55  **Good/Bad Modifiable Risk Factors for AD2**
- 1 • Bad factors
 - High body mass index in MID life
 - Carotid artery disease

- Hypertension
- Depression
- Frailty
- 2 –
- Less than high school education
- High blood homocysteine level (low B vitamins)
- Smoking for Asians
- Diabetes type II

56 **Alzheimer's Disease – Therapeutics**

- 1 • No known cure
- Slow/temporarily halt
- Cholinesterase inhibitors
 - Prevents the breakdown of acetylcholine
 - Mild to moderate AD
 - Donepezil (Aricept®)
 - Galantamine (Razadyne®)
 - Rivastigmine (Exelon®)
- 2 • N-methyl D-aspartate (NMDA) antagonist
 - Blocks the toxic effects associated with excess glutamate /regulates glutamate activation
 - Moderate to severe AD
 - Memantine (Namenda®)
- Combination drugs
 - Moderate to severe AD
 - Namzaric® (memantine extended-release and donepezil®)

57 **Alzheimer's Disease – Treatments for Behaviors**

- 1 • Non-drug approaches
 - Promote physical/ emotional comfort
- Drug approaches
 - Know risks/benefits
 - Target specific symptom
 - Low doses
 - Monitor side effects
- 2 • Antidepressants
 - Low mood and irritability
- Anxiolytics
 - Anxiety, restlessness, verbally disruptive behavior, resistance
- Antipsychotics
 - Hallucinations, delusions, aggression, agitation, hostility, uncooperativeness

58 **Alzheimer's Disease – Treatments for Behaviors**

- 1 • Antidepressants
 - citalopram (Celexa)
 - fluoxetine (Prozac)
 - paroxetine (Paxil)
 - sertraline (Zoloft)
 - trazodone (Desyrel)
- Anxiolytics

- lorazepam (Ativan)
- oxazepam (Serax)
- 2 • Antipsychotic medications
 - aripiprazole (Abilify)
 - clozapine (Clozaril)
 - haloperidol (Haldol)
 - olanzapine (Zyprexa)
 - quetiapine (Seroquel)
 - risperidone (Risperdal)
 - ziprasidone (Geodon)

59 **Vascular Cognitive Impairment (VCI)**

- "A syndrome where there is evidence of clinical stroke or subclinical vascular brain injury and cognitive impairment affecting at least one cognitive domain."
- Includes all cognitive disorders associated with CVD, from mild deficits to dementia
- VCI diagnosed thru linkage of:
 - Neurological testing
 - Neuroimaging demonstrating VCI
- Memory may be intact
- Other cognitive deficits present

[http://JNeurolSci.2004.Nov.15;226\(1-2\):81-7](http://JNeurolSci.2004.Nov.15;226(1-2):81-7)
www.ncbi.nlm.nih.gov/pubmed/21778438

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61 **Vascular Cognitive Impairment (VCI)2 Stroke**

- 795,000 Americans have strokes yearly (new/recurrent)
 - Thrombotic stroke (80%)
 - Hemorrhagic stroke (20%)
 - Multi-infarct, TIA, RIND
- Fifth death cause in US
 - 129,000/yr
 - Someone dies every 4 minutes
 - 40% male/60% female
- Leading cause of disability
- 2nd leading cause of dementia in US
- Dementia occurs 25-30% post stroke(s)

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63 **Other Signs of Stroke**





- Sudden visual disturbances
- Weakness/numbness on one side
- Sudden confusion
- Language problems
- Dizziness/stumbling
- Severe headache




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Risk Factors for Stroke

- 1 • High BP
- Diabetes
- Heart disease
- Smoking
- Age & Gender

- Race & Ethnicity
- Personal or family history of stroke or TIA
- Carotid or peripheral artery disease
- Atrial fibrillation
- Brain aneurysms or arteriovenous malformations
-
- 2 • Alcohol and illegal drug use
 - cocaine, amphetamines, and other drugs
- Certain medical conditions
 - Sickle cell disease, vasculitis, bleeding disorders
- Physical inactivity
- Overweight/Obesity
- Stress and depression
- Unhealthy cholesterol levels
- Unhealthy diet
- Use of nonsteroidal anti-inflammatory drugs
 - ibuprofen and naproxen
 - not aspirin
- 65  **Treatment of Stroke**
 - Recognize symptoms
 - Seek medical help
 - Diagnostic treatment
 - Non-contrast head computerized tomography (CT)
 - Magnetic resonance imaging (MRI)
 - Computerized tomography Angiography
 - Tissue plasminogen activator (tPA)
 - abciximab (ReoPro) and reteplase (Retavase)
 - Angiography/Endovascular procedures
 - Follow-up therapy
- 66  **AHA/ASA Guidelines for Prevention w/Previous TIA or Stroke**
 - 1 • Cardiac considerations
 - Blood pressure control
 - $\leq 140/90$ mm
 - Antiplatelets/anticoagulants
 - ASA, warfarin (Coumadin), dabigatran (Pradaxa), pixaban (Eliquis), rivaroxaban (Xarelto)
 - Measure C-reactive protein level (CRP) (tissue damage)
 - Screen for Diabetes II
 - Statin therapy
 - LDL-C level ≥ 100 mg/dL
 - 2 • Diet
 - Salt ≈ 2.4 g/d
 - Mediterranean-type diet
 - Manage weight (BMI)
 - Evaluate for sleep apnea
 - Avoid smoking/smoke
 - Alcohol
 - 2 men; 1 women

- Exercise
 - 3-4/wk; 40 minutes
- 67  **Parkinson's Disease (PD)1**
 - Described by James Parkinson in 1817
 - Parkinson's Disease
 - progressive neurological disorder
 - Onset in 60's,
 - Increasing prevalence with age
 - 1% of over 65 to 2.5% of over 80
 - Slightly higher prevalence in man
 - Affects ~ 1 million people in US
 - Incidence out one-tenth of Alzheimer's
 - 10 genes linked to PD
 - Some dementia occurs in 20-60 %
 - Memory loss
 - Slow thinking
- 68  **Parkinson's Disease2**
 - Costs
 - \$25 Billion in US
 - Medication
 - \$2,500 annually per individual
 - Therapeutic surgery
 - \$100,000 per individual
- 69  **Parkinson's disease (PD)1**
 - Symptoms
 - Bradykinesia (slowness)
 - Rigidity
 - Tremor
 - Gait changes
 - Postural instability (Balance/coordination loss)
 - Chewing/swallowing difficulty
 - Drooling
 - Flat affect with
 - Lack of facial expression
- 70  **Parkinson's Disease2**
 - 1 • Etiology unknown/no cure
 - Oxidative stress
 - Mitochondrial dysfunction
 - Inflammation
 - Excitotoxicity
 - Apoptosis cascade
 - Environmental factors
 - Gene mutations
 - Epigenetic factors
 - 2 • Pathogenesis
 - Dopaminergic neurons degenerate
 - Proliferation of astrocytes
 - Intracytoplasmic inclusions of Lewy bodies (alpha-synucleinm formations)
 - Found in midbrain
 - Brain stem
 - Olfactory bulb

- Intestines
- Non-motor symptoms
- 71  **Parkinson's Disease³**
 - 1 – Non-motor symptoms
 - Anxiety
 - Depression
 - Mood swings
 - Constipation
 - GI problems
 - Pain
 - Orthostatic hypotension
 - Excessive sweating
 - Weight loss
 - Dementia
 - 2
 - Pain
 - Psychosis
 - Hallucinations
 - Loss of energy
 - Disturbances
 - Sleep
 - Smell
 - Vision
 - Memory
- 72  **Parkinson's Disease – Therapeutics¹**
 - 1
 - No neuroprotective properties
 - No disease modifying properties
 - Relieves PD symptoms (5-10 yrs)
 - Do not slow PD progression
 - Early vs. late treatment
 - More effective early?
 - Minimize complications
 - 2
 - Non-symptomatic vs. symptomatic
 - Rate of progression varies in early stages
 - Slower in less affected patients
 - Intervention in early states may be more successful
 - Concerns w/drugs
 - dyskinesia (involuntary movements)
 - fluctuations in motor response
 - Other drugs used to tx non PD symptoms
- 73  **Parkinson's Disease – Therapeutic Classes²**
 - 1
 - Carbidopa-levodopa Therapy's carbidopa-levodopa (Sinemet®), (Rytary®)
 - Levodopa
 - precursor for dopamine
 - Carbidopa
 - slows conversion of levodopa
 - No nausea
 - Dopamine Agonists' ropinirole (Requip®), pramipexole (Mirapex®), rotigotine (Neupro®)

- Stimulate dopamine sensitive areas
- Not as effective as carba/levodopa
- Less likely cause dyskinesias
- Psychosis symptoms
 - Pimavanserin (Nuplazid®)
- 2 • Anticholinergics' trihexyphenidyl (Artane®), benztropine mesylate (Cogentin®)
 - Reduce tremor and dystonia
- MAO-B inhibitors' selegiline (also called deprenyl (Eldepryl® and Zelapar®, rasagiline (Azilect®)
 - block brain enzyme that metabolized levodopa
 - Can delay need of or enhance carbidopa-levodopa
- COMT inhibitors' entacapone (Comtan®) tolcapone (Tasmar®)
 - prolong effect of levodopa by blocking its metabolism

74 **Parkinson's Disease – Surgical Considerations**

- Deep brain stimulation (DBS)
 - Electrodes implanted in targeted areas
 - MRI or CT scan
 - neurophysiological mapping
 - Impulse generator or IPG
 - Implanted under clavicle
 - provide impulse to brain's motor function area
 - Controller checks battery
 - » lasts 3-5 yrs
 - » replaced under local anesthesia

75 **Lewy body Dementia**

- Histopathology
 - Lewy inclusion bodies in cerebral cortex
 - Alpha syneuclein proteins
- 7-26% of dementia cases
- Clinically similar to AD
- Visual hallucinations
 - Early and prominent
- Parkinsonian features
- Sensitivity to anti-psychotics
- More rapid evolution

76 **Lewy Body Dementia**

- 1 • Treatment
 - No specific drugs approved by FDA
 - Responsive to cholinesterase inhibitors
 - Parkinsonian symptoms drugs
 - Antipsychotics may worsen cognitive and Parkinsonian symptoms

77 **Frontotemporal Lobar degeneration (FTLD)**

- 1 • Multiple subtypes of FTLD
 - Pick's disease
 - Behavioral-variant FTLD
 - Primary progressive aphasia
 - Corticobasal degeneration
 - Progressive supranuclear palsy

- Degenerative dementia
- 2nd most common early onset
 - Onset under age 65
- 2 • Incidence/prevalence unknown
- Early symptoms
 - Changes in
 - Personality changes
 - Inappropriate behaviors
 - Communication difficulty
 - speaking and comprehending
 - Memory intact
- 20% aberrant motor issues

78  **Frontotemporal Lobar degeneration (FTLD)**

- Pathology
 - Vary in subtypes
 - Tau proteins in upper cortex layer
 - Atrophy in frontal and temporal lobes
 - “dementia lacking distinct histopathological features”
- Treatments
 - None FDA approved
 - None effective

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80  **Dementia -Three Step Evaluation**

- Screening
 - Any Mental Health or Medical Provider
- Assessment
 - Licensed Medical Provider
- Diagnosis
 - Specialist (Neurologist, Psychiatrist or Geriatrician + Neuropsychologist)

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Screening

- Note if client/patient is:
 - Odd or poor historian
 - Disheveled, inappropriately dressed, dirty
 - Repeatedly late for or misses appointments (e.g., wrong time/day)
 - Has unexplained weight loss or vague symptoms
 - Poorly adaptive to stress
 - Defers to family/caregiver to answer questions directed to him/her
 - Consider Family Questionnaire

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84  **Assessment**

- Conduct:
 - Standard Medical History
 - Physical Exam
 - Functional Status (FAQ)
 - Mental Status (MMSE, GDS)

- Labs
 - CBC, electrolytes, Glucose, BUN-Creatinine, TSH, Drug levels
- Caregiver Interview
 - personal strain, patient behavior changes

85 86  **Diagnosis**

- Diagnostic exam
-
- Testing
-
- Formal neurocognitive testing

87 **Dementia Diagnosis**

- 1 • Evaluation
 - Medical, drug and family history
 - AD starts decades before symptoms appear
 - Lab tests to rule out other causes
 - Lab tests for neuropathological cellular changes
- 2 • Neurological examination (Mini Mental, ADAS)
 - MRI scans
 - PET scans
 - Genetic testing
 - 90% accuracy in clinical diagnosis of DAT
 - Definitive diagnosis is made at autopsy

88 **MEND Program****Metabolic Enhancement for Neuro Degeneration**

- 1 • Eliminate
 - Simple carbohydrates
 - Gluten if sensitive
 - Processed food
- Add more
 - Vegetables
 - Fruits
 - Non-farmed fish
- Take activated folate, vitamin B-6, B-12; D3, E, minerals
- Fast for 12 hrs
- 2 • Reduce stress
 - Mediate BID
 - Yoga
 - Walk
 - Music
- Exercise
 - 30-60 mins qd
- Sleep 7-8 hours
- Stimulate your brain


89 **Other Prevention Considerations**

- 1 • Melatonin
- Fish oil
- Coenzyme Q10
- Avoid excessive alcohol
- Control blood sugar
- Oral hygiene

- Power brushing
- Interproximal cleaning
- 2 • Reduce inflammation
- Reduce or eliminate proton-pump inhibitors
- Hormone replacement
 - Estrogen
- Anti-hypertensive drugs
- Vitamin C
- NSAIDs
- Statins
- Coffee

90  **Providing Care for**

Patients with Dementia

91  **Best ways to communicate**

- Identify yourself
- Call the person by name
- Use short, simple words and sentences
- Speak slowly and distinctively
- Patiently wait for a response
- Repeat information or questions as needed
- Turn questions into answers
- Avoid confusing and vague statements

92  **Helping a Patient Communicate**

- Be patient and supportive
- Offer comfort and reassurance
- Avoid criticizing or correcting
- Avoid arguing
- Offer a guess
- Encourage unspoken communication
- Limit distractions
- Focus on feelings not facts
-

93  **Guiding Principles for Patients with Agitated Behavior1**

- Anticipate behaviors
- Have tolerance for behaviors
- Do not agitate the patient

94  **Guiding Principles for Patients with Agitated Behavior2**

- 1 • Anticipate behaviors
 - Anxiety
 - Movement
 - Confusion
 - Paranoia
 - Hallucinations
 - Complaining
 - Verbal outbursts
 - Cursing
 - Reaching out/touching

- Sexual inappropriate
- 2 –
- Grabbing
- Biting
- Coughing
- Choking
- Spitting
- vomiting
- Sleepiness
- Inability to keep mouth open
- Combativeness
- Resistance to care
- ...

95  **Guiding Principles for Patients with Agitated Behavior3**

- 1 • Have tolerance for behaviors
 - New environment
 - Fear of falling/safety
 - Inability to understand
 - Inability to answer questions
 - Inability to express needs
 - Repetitive questions/ conversation
 - Inappropriate conversation
- 2 • Look for clues
 - Lights
 - Temperature – too warm cold
 - Positioning
 - Breathing difficulty
 - Thirsty
 - Need to spit
 - Tired
 - Toilet needs
 - Too noisy
 - Too many 'hands in mouth'

96  **Guiding Principles for Patients with Agitated Behavior4**

- Do not agitate the patient
 - Provide simple explanations before beginning each procedural step
 - Work calmly and quietly
 - Allow rest periods
 - Redirect patient's attention
 - Provide a security object
 - Hands, blanket, doll
 - Limit restraint
 - Soft touch, restraints
 - Acknowledge/respond to requests
 - Remove cause of agitation

97  **Guiding Principles for Patients with Agitated Behavior3**

- Avoid being confrontational
- Avoid over-stimulation /background
 - noise, conversations, interruptions
- Explore various solutions
- Consider pain control

- Change treatment plan
- Discontinue care
- Consider pre-sedation
 - Review current medications
 - Consider consultation with physician/ARNP
 - start low, go slow
 - Benzodiazepines
 - Driver, fall risk
- Don't take patient behavior personally

98  **Cognitive Function and Oral Health**

- "Living environment was not associated with oral health measures, indicating that oral health had declined before in dementia patients before they were placed in nursing homes."
- "Community-dwelling elders with lower cognitive function scores have greater deterioration of oral health."

99  **Treatment Protocols**

- Four categories of Care:
 - No treatment
 - Establish realistic home care routine
 - Caregiver and professional monitoring
 - Emergency care
 - Alleviation of pain and infection
 - Intermediate care
 - Medical model vs. surgical model
 - SDF
 - IRT
 - Comprehensive treatment

100  **Treatment tips**

- Prepare your staff and office space for visit.
- Obtain health and medication list before appointment day.
- Determine if a translator is needed.
- Ask what patient/guardian wants or needs.
- Determine if caregiver presence is helpful or distracting.
- Prioritize for each appointment. Function over esthetics?
- Set realistic goal for each appointment.
- Set overall goals as patient declines.
- Plan frequent visits when possible. Be aware of other costs.
- Maintain as many teeth and as much hard tooth structure as possible.
- Choose a toothbrush first! Remove food, plaque, then calculus.
- Evaluate what patient/caregiver can realistically accomplish at home.
- Admit what is not working and change plan.
- Evaluate what provider can realistically accomplish.

101  **Informed Consent and Advocacy**

- Protect patient rights and confidentiality
- Evaluate patient's ability to understand and provide informed consent
- Recognize patient may overcompensate cognitive deficits with habitual social skills

- Identify and contact power of attorney
- Obtain a translator if needed

102  **"Hope through Research"**

- National Alzheimer's Project (AD and related dementias)
 - Clinical studies
 - Drug development
 - Exercise
 - Genetics
 - Brain Imaging
 - International efforts
 - Proteins
 - Sleep
 - Stem cells

103  **Specific Research/Trials/News1**

- 1 • Drug trails
 - Solanezumab-anti-amyloid drug
 - A4 anti-amyloid treatment for asymptomatic stage
 - AZD0530 in older adults w/ mild AD (saracatinib-enzyme inhibitor)
 - MK-8931-inhibit beta amyloid
 - Prazosin for agitation
 - SNIFF transnasal Insulin to improve memory
 - CSP-1103 microglia modulator to target inflammation
 - ADMET2-methylphenidate (Ritalin®),
- 2 • Genetics
 - Gene match program
 - ApoE and DIAN TU gene studies
- Vascular components
 - M²OVE AD
 - Bioengineered blood vessels

104  **Specific Research/Trials/News2**

- 1 • Imaging
 - Tau Pet –new radioactive compound
 - Identify risk
 - Distinguish normal/pathologic brain changes
 -
- 2 • Stress/Exercise
 - SIRT3 enzyme
- Immune System
 - Antibodies that trigger microglia cells to phagocytize plaques
 - AADvac1 vaccine attacks tau
- Stem cells
 - iPSC to reprogram skin cells to other cell types

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106  **Save the Date!**

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