ALZHEIMER'S DISEASE IN THE COMMUNITY: A GERIATRICIAN'S PERSPECTIVE

2024 ANNUAL UPDATE

HAWAI'I ACADEMY OF FAMILY PHYSICIANS

FEBRUARY 16-18 GRAND NANILOA HOTEL

THE QUEEN'S HEALTH SYSTEM 1859

QUEEN'S UNIVERSITY MEDICAL GROUP

JOHN A. BURNS SCHOOL OF MEDICINE · UNIVERSITY OF HAWAII MANOA

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LAURYN ANDO, MD

ASSISTANT PROFESSOR, JABSOM

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Homdel, NJ

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Neurology
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Clinical Professor of Medicine (Neurology)
Graduate Faculty, Clinical & Translational Research
University of Hawaii John A. Burns School of Medicine

DISCLOSURES

Speakers:
Lauryn Ando, MD reports no financial relationships.
Lauren Okamoto, MD

- Geriatrics Workforce Enhancement program, DHHS, HRSA. 7/1/15-Present. Role: Co-investigator
- Geriatrics Academic Career Award, DHHS, HRSA. 7/1/23-Present. Role: Primary Investigator

Expert Panel
Sara Leonard, MD reports no financial relationships
Robert J. Varipapa, MD reports no financial relationships.

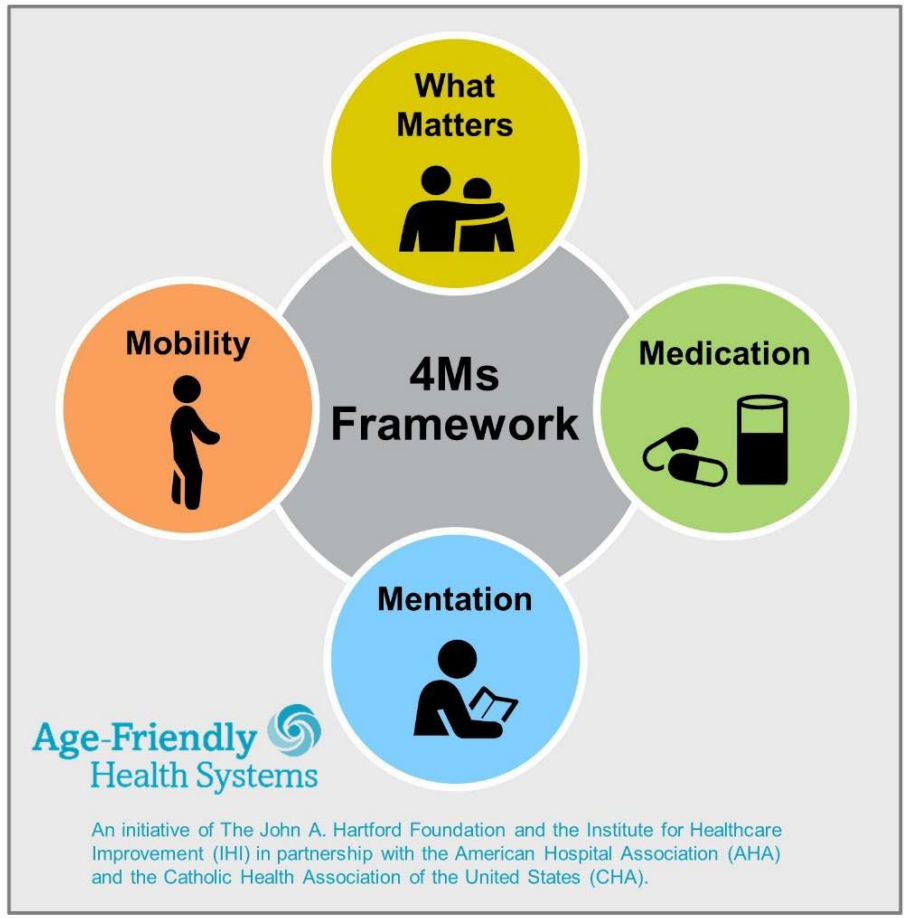
NJAFP Planners/Reviewers/Staff
Theresa Barrett, PhD; Emelyn Falcon; and Charles Goldthwaite, PhD; report no financial relationships.

The NJAFP course/program was supported by an educational grant from Genentech, Inc.

LEARNING OBJECTIVES

- Recognize the importance of screening and early detection of Alzheimer's Disease (AD)
- Understand the principles of evaluation, workup, and treatment of AD
- Engage in productive dialogue with patients and caregivers
- Utilize an interprofessional team to construct patient-centered care plans

AGE-FRIENDLY HEALTHCARE SYSTEMS



What Matters

Know and align care with each older adult's specific health outcome goals and care preferences including, but not limited to, end-of-life care, and across settings of care.

Medication

If medication is necessary, use Age-Friendly medication that does not interfere with What Matters to the older adult, Mobility, or Mentation across settings of care.

Mentation

Prevent, identify, treat, and manage dementia, depression, and delirium across settings of care.

Mobility

Ensure that older adults move safely every day in order to maintain function and do What Matters.

ALZHEIMER'S DEMENTIA

- Affects around 6.5 million (10.7%) US adults aged 65 and older
- Projected to rise to 12.7 million by 2050
- Average lifespan of 8-12 years from diagnosis
- US Prevalence = 6 million cases , >70 years
- Associated costs= $ 290 Billion
- One-third of Medicare beneficiaries dies with dementia
- 5th leading cause in those over 65
- 7th leading cause of death all adults

CLINIC PATIENT: MR. SATO

Mr. Sato is an 80-year-old man with HTN, HLD, Diabetes, coming in for a follow up on his Diabetes. He is accompanied by his daughter.

At the end of the appointment, the daughter takes you aside and notes concern about her father's memory.

He forgot to pick up the grandchildren yesterday. In the past few months, he has forgotten conversations and forgets where he parked the car.

CLINIC PATIENT: MR. SATO

He lives alone since his wife passed away 1 year ago from cancer. He has lost some weight.

He can still drive, make phone calls, take his meds and manage his finances. He usually buys Zippy's take out, and his refrigerator has a lot of ice cream. He is still independent in his ADL's. However, he doesn't go out on walks anymore and the bushes/shrubs are unkempt.

He is a retired professor in English Literature and doesn't seem interested in reading anymore. In fact, he has stopped many previous hobbies he used to do.

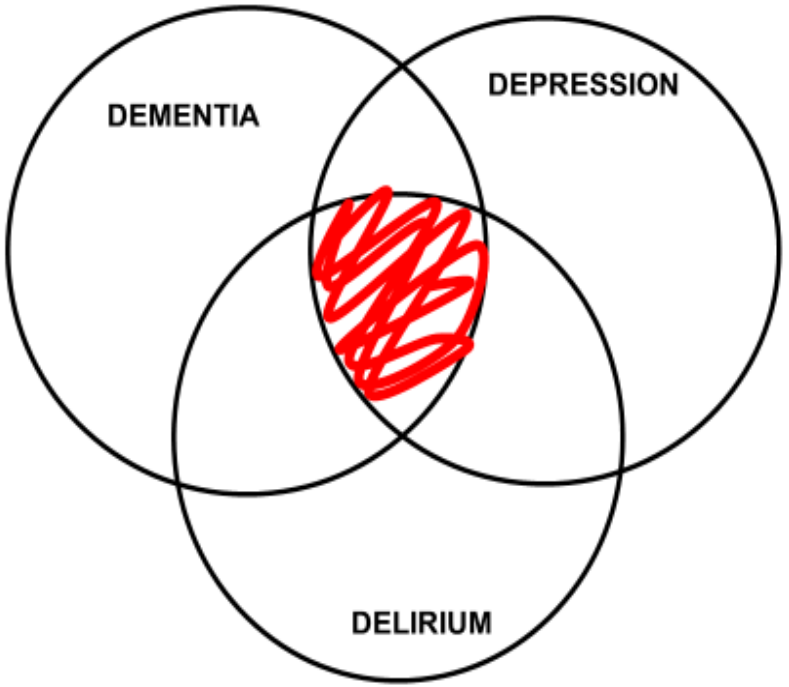
WHAT COULD BE CAUSING MR. SATO'S SYMPTOMS?

- Cognitive Impairment
- Dementia
- Delirium
- Depression
- Metabolic abnormality (Vitamin Deficiency, thyroid disorder, other)
- Stroke
- Medication side effect?

DIFFERENTIATING THE 3 D'S"

Delirium vs. Dementia vs. Depression

Features	Delirium	Dementia	Depression
Onset	Acute (hours to days)	Insidious (months to years)	Acute or Insidious (wks to months)
Course	Fluctuating	Progressive	May be chronic
Duration	Hours to weeks	Months to years	Months to years
Consciousness	Altered	Usually clear	Clear
Attention	Impaired	Normal except in severe dementia	May be decreased
Psychomotor changes	Increased or decreased	Often normal	May be slowed in severe cases
Reversibility	Usually	Irreversible	Usually



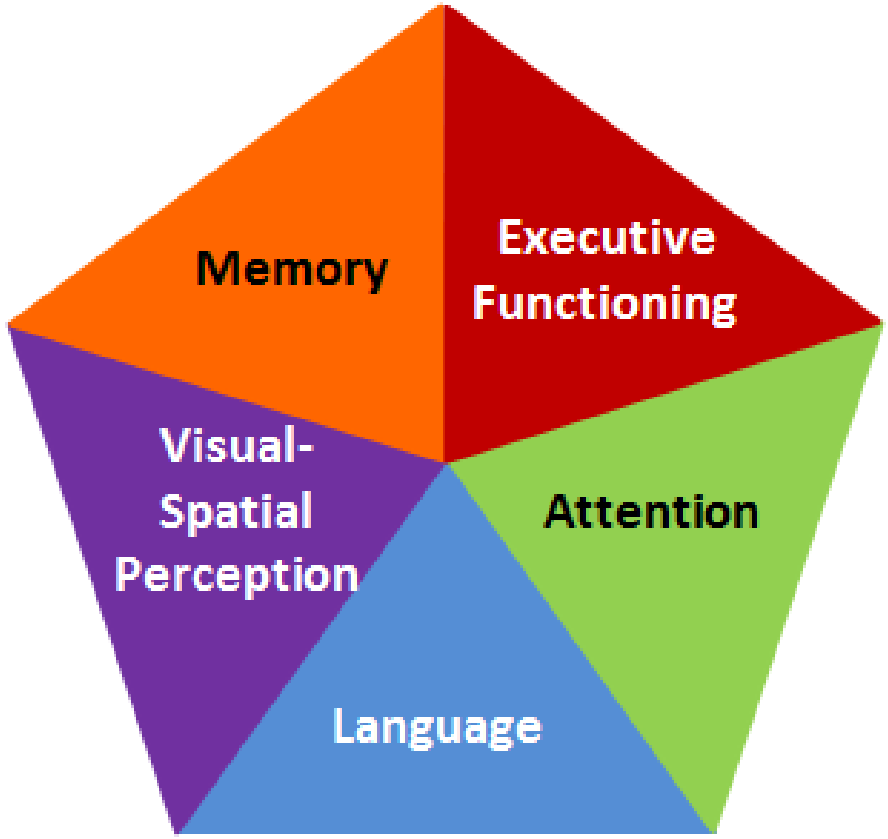
DEFINITION OF DEMENTIA

- Chronic acquired decline in one or more cognitive domain (memory + other domain)

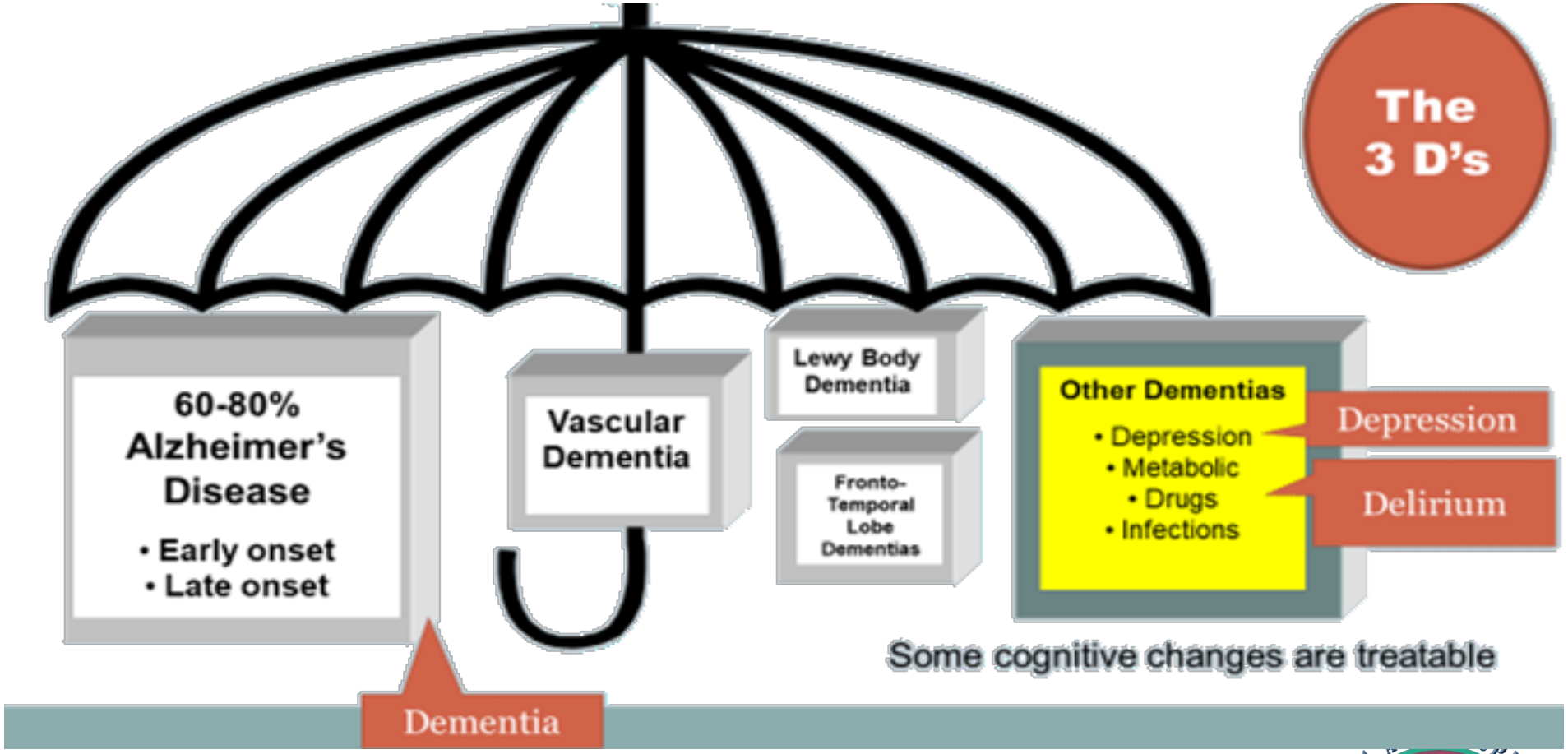
AND

- Functional deficit that interferes with daily life

- Does not occur in the context of delirium.
- Not otherwise explained by another mental disorder (Depression)



DEMENTIA


The 3 D's
60-80% Alzheimer's Disease
• Early onset
• Late onset
Vascular Dementia
Lewy Body Dementia
Fronto-Temporal Lobe Dementias
Other Dementias
• Depression
• Metabolic
• Drugs
• Infections
Depression
Delirium
Some cognitive changes are treatable
Dementia

PATHOPHYSIOLOGY OF DEMENTIAS

Type	Brain Abnormalities	Symptoms	Typical Age at Diagnosis
Alzheimer's Disease	Deposits of **β-amyloid** protein and **tangles of tau** protein throughout brain	• Impaired memory, language, visual/spatial skills • Apathy and/or depression	65+; some cases mid-30s-early 60s
Frontotemporal Dementia	Accumulation of **tau** and **TDP-43 proteins** in frontal and temporal lobes	• Personality changes • Issues with language • Balance issues; palsy • Lack of emotional/impulse control	45-64
Lewy Body Dementia	Deposits of **alpha-synuclein** protein ("Lewy bodies") on cortical nerve cells	• Hallucinations • Sleep difficulties • Impaired thinking and motor skills	50 and older
Vascular Dementia	Disrupted blood flow to the brain	• Impaired motor skills & judgement • Memory issues • Hallucinations/delusions	Over 65

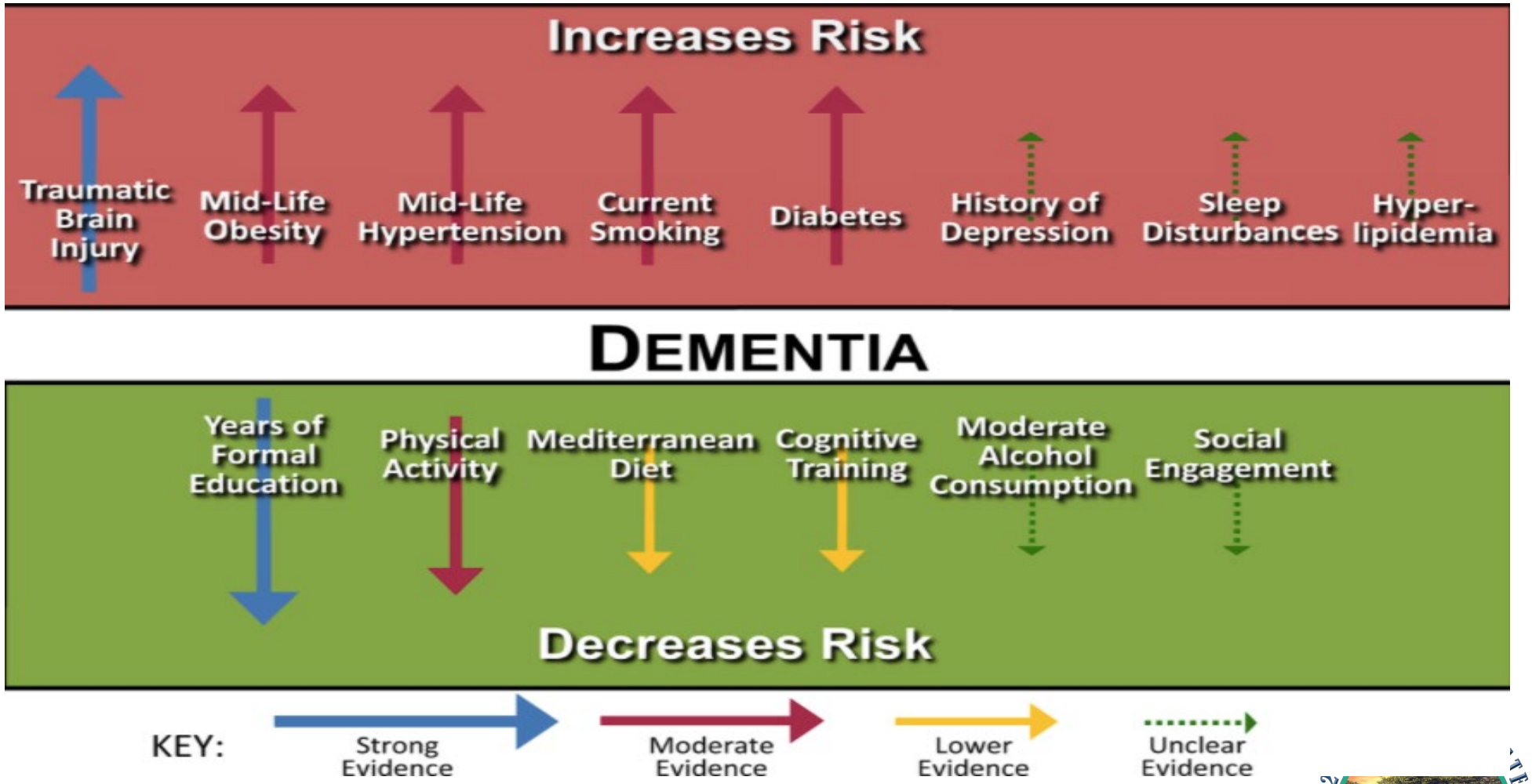
Source: National Institute on Aging. Understanding different types of dementia; 2023.

DEFINITE RISK FACTORS

DEFINITE

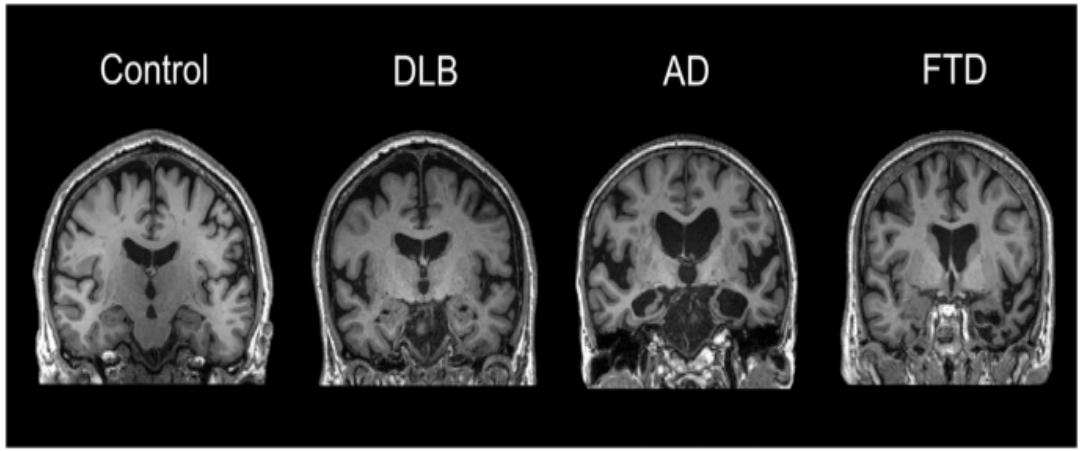
- Age
- Down syndrome
- Family History
- Genetics
  - APOE4 ε4 allele (Late onset disease)
  - Presenilin 1 or 2 (PSEN-1, PSEN-2) and Amyloid precursor protein (APP) associated with early onset (less than 1% of all AD cases)

MODIFIABLE RISK FACTORS



WORKUP

- History: Collateral history from family
- General Physical exam (Including neurological exam)
- Functional status
- Mental Status
- Lab work & Imaging
  - Vitamin B12, Folate, TSH with reflex.
  - Head CT or MRI
    - *FDG-PET radiopharmaceutical [^{18}F]fluorodeoxyglucose*
    - *Amyloid & Tau PET*
  - Additional but not required: HIV, RPR, UA, CBC, CMP



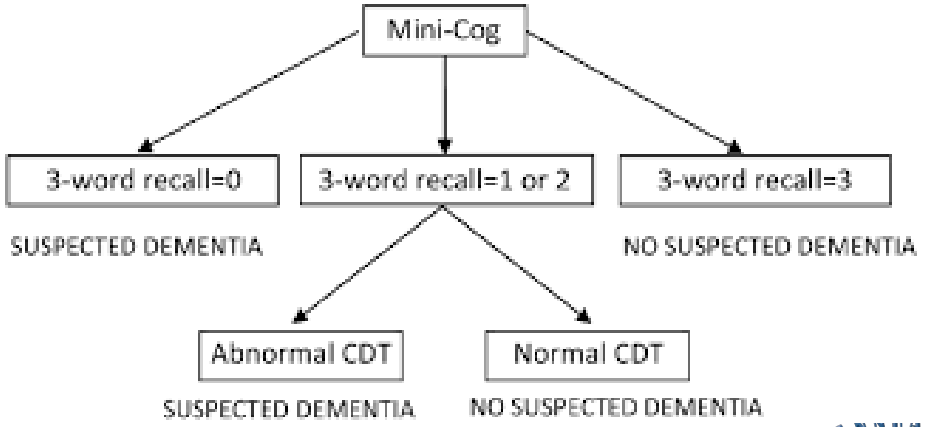
MINI-COG AS A SCREENING TOOL

THREE MINUTES TO ADMINISTER

- 3-word registration
- Clock drawing (ten minutes after eleven)
- 3-word recall

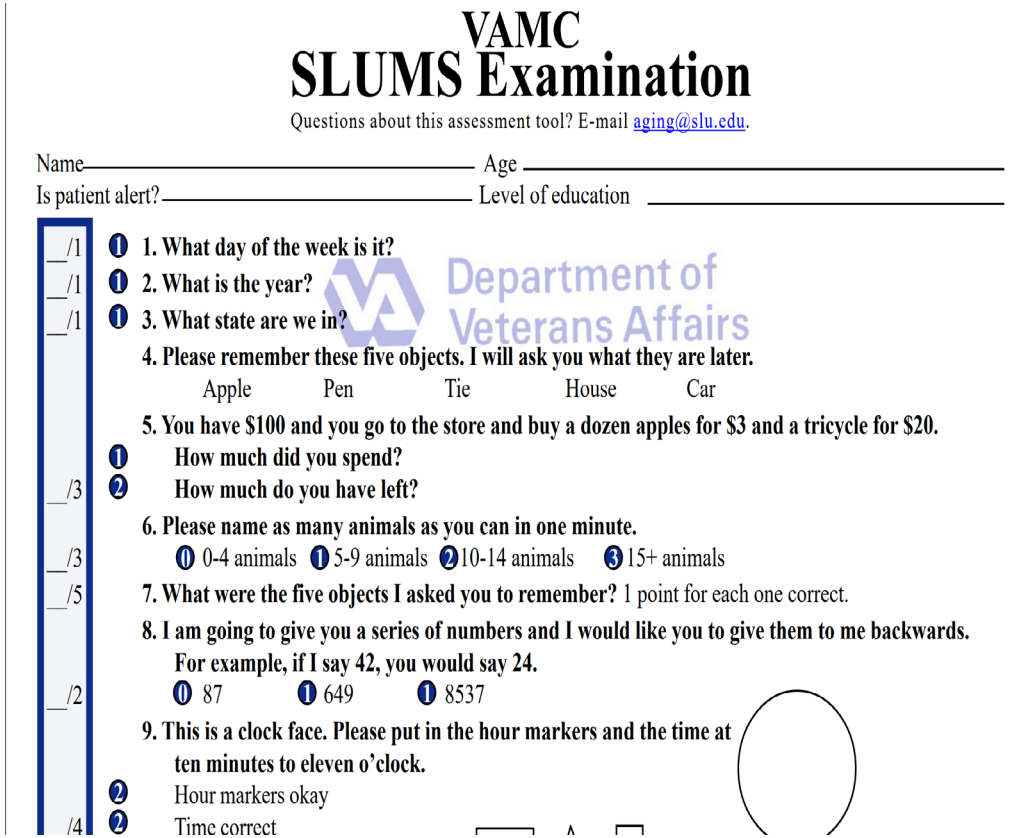
Scoring

Word Recall: _____ (0-3 points)	1 point for each word spontaneously recalled without cueing.
Clock Draw: _____ (0 or 2 points)	Normal clock = 2 points. A normal clock has all numbers placed in the correct sequence and approximately correct position (e.g., 12, 3, 6 and 9 are in anchor positions) with no missing or duplicate numbers. Hands are pointing to the 11 and 2 (11:10). Hand length is not scored. Inability or refusal to draw a clock (abnormal) = 0 points.
Total Score: _____ (0-5 points)	Total score = Word Recall score + Clock Draw score. A cut point of <3 on the Mini-Cog™ has been validated for dementia screening, but many individuals with clinically meaningful cognitive impairment will score higher. When greater sensitivity is desired, a cut point of <4 is recommended as it may indicate a need for further evaluation of cognitive status.



MENTAL STATUS EXAMS/ COGNITIVE TESTING

- **Saint Louis Mental Status Examination (SLUMS)**
- **Mini-Mental State Examination (MMSE):**
  - Need permission to use
  - Heavy emphasis on orientation
  - Decreased accuracy for certain populations
- **Montreal Cognitive Assessment (MOCA):**
  - Need training/certification/permission
  - Different languages and variations (blind, basic)
- **Neuropsychological testing**
  - Costly, timely to administer
  - May identify deficits not obvious on other exams



VAMC
SLUMS Examination

Questions about this assessment tool? E-mail aging@slu.edu.

Name_____ Age _____
Is patient alert?_____ Level of education _____

__/1 0 1. What day of the week is it?
__/1 0 1 2. What is the year?
__/1 0 1 3. What state are we in?
4. Please remember these five objects. I will ask you what they are later.
Apple Pen Tie House Car
5. You have $100 and you go to the store and buy a dozen apples for $3 and a tricycle for $20.
0 1 How much did you spend?
__/3 0 1 2 How much do you have left?
6. Please name as many animals as you can in one minute.
__/3 0 0-4 animals 1 5-9 animals 2 10-14 animals 3 15+ animals
__/5 7. What were the five objects I asked you to remember? 1 point for each one correct.
8. I am going to give you a series of numbers and I would like you to give them to me backwards. For example, if I say 42, you would say 24.
__/2 0 87 0 1 649 0 1 8537
9. This is a clock face. Please put in the hour markers and the time at ten minutes to eleven o'clock.
0 1 2 Hour markers okay
__/4 0 1 2 Time correct

Department of Veterans Affairs

FUNCTIONAL DEFICITS

Activities of Daily Living (ADLS)

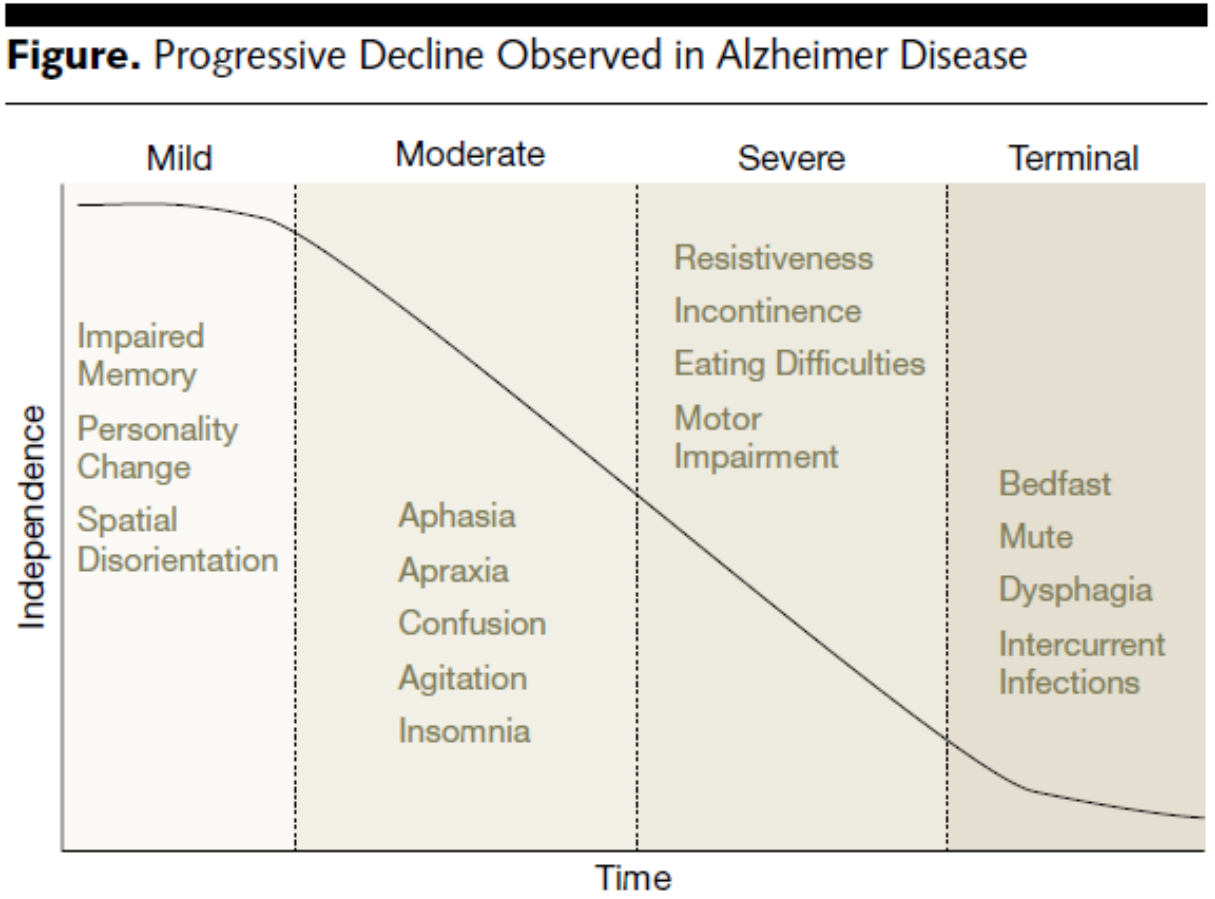
Instrumental Activities of Daily Living (IADLs)

- Using the telephone
- Shopping
- Preparing food
- Housekeeping
- Doing laundry
- Using transportation
- Handling medications
- Handling finances

Occupational Deficits

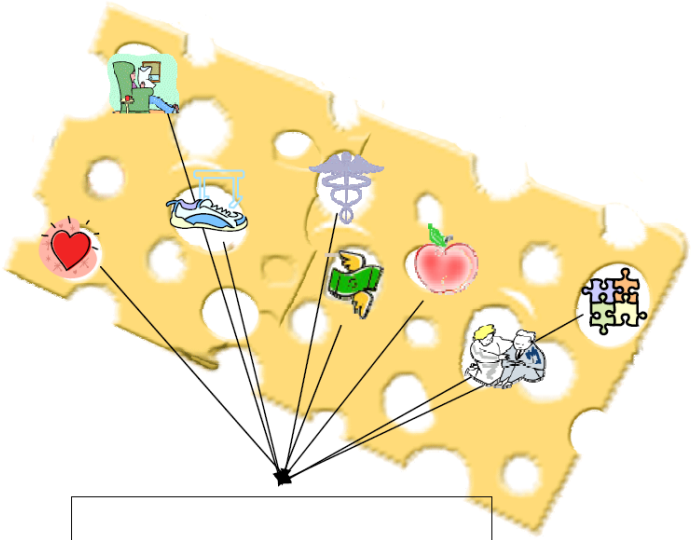
ROAD MAP THE APPROACH

- Progression of Illness:
  - Cognitive decline = Behaviors (paranoia, refusing)
  - Functional decline
  - Depression, anxiety
- Treatment options
- Safety: Driving, home safety, med management, wandering, burnout, fraud protection
- Care team involvement: specialists, family/friends/ support systems (church, community), support groups
- Maintaining a routine
- Prognostication & Longterm planning



INTERPROFESSIONAL APPROACH

1. PHYSICAL MEDICINE & REHABILITATION
2. COGNITIVE
3. EMOTIONAL
4. MEDICAL/SURGICAL
5. NUTRITIONAL
6. ENVIRONMENTAL
7. SOCIAL/CAREGIVER
8. ECONOMIC

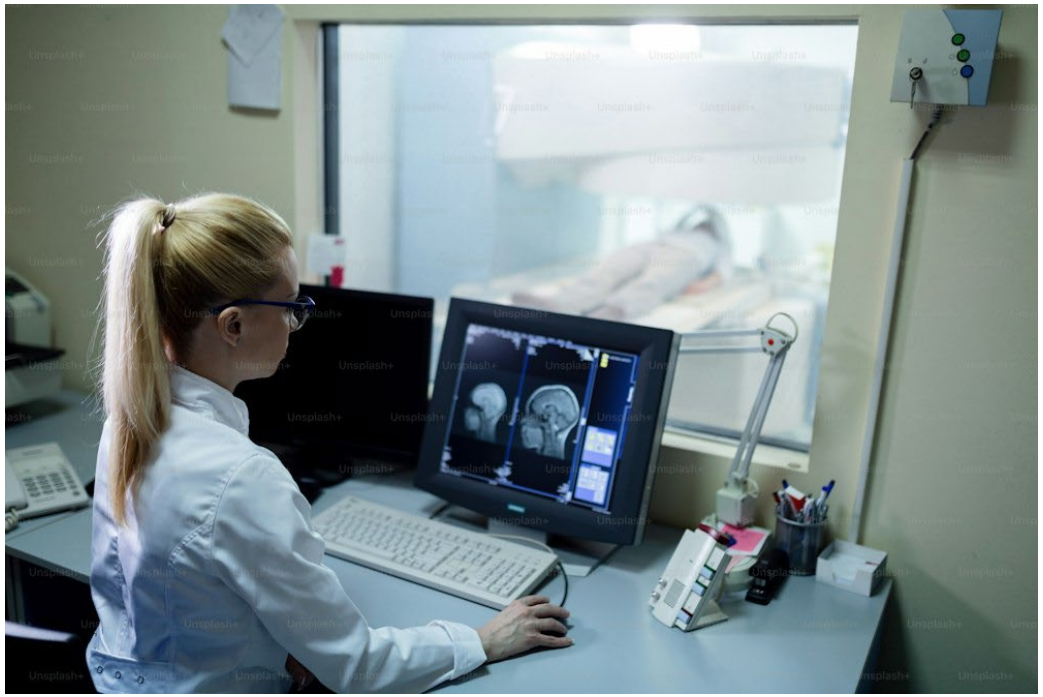


Geriatric Syndrome
(e.g. Falls, Dementia)

↓

Frailty/Loss of Independence

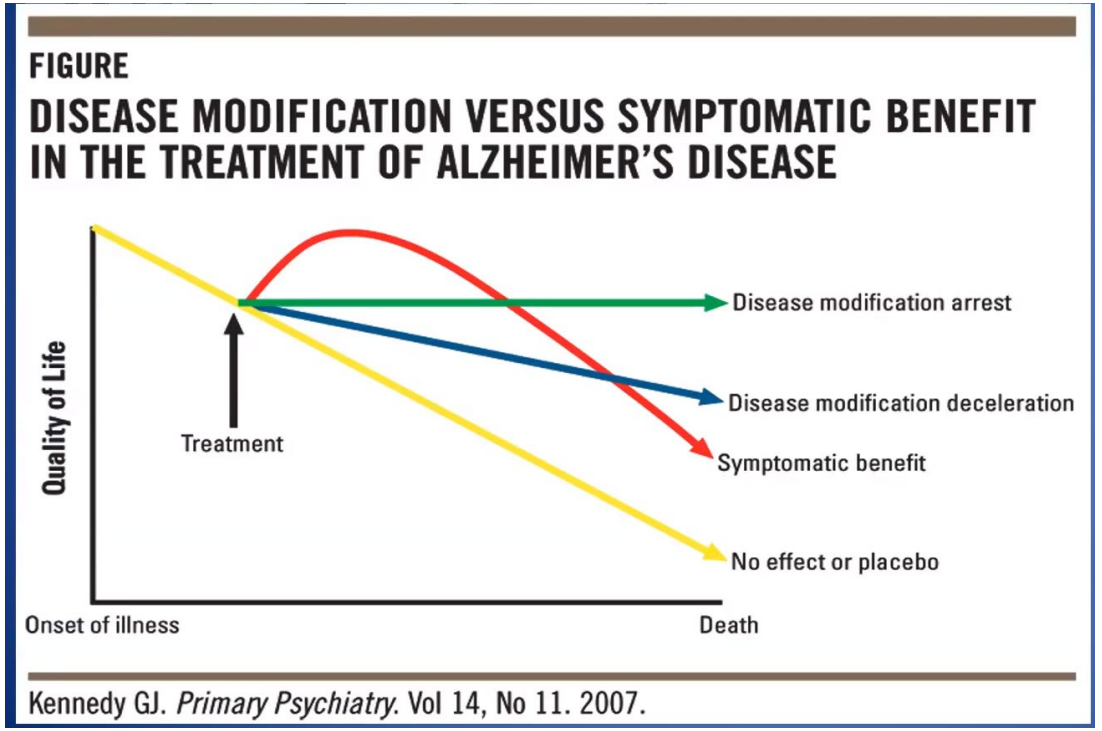
SPECIALTY CONSULT



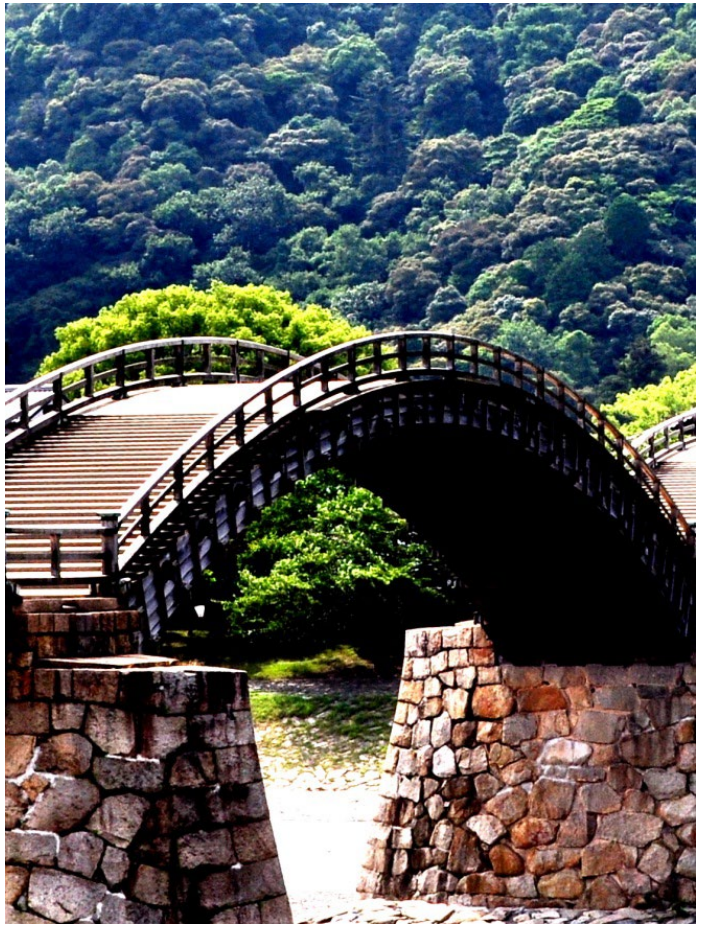
- Patients under age 65
- Acute or rapidly-progressing cognitive impairment
- Individuals with findings suggestive of stroke, cerebral hemorrhage, or subdural hematoma
- Complicated and atypical cases

EMERGING TREATMENT OPTIONS

- The neuronal damage associated with MCI is irreversible (No Cure)
- Pharmacotherapies:
  - Treatments to address underlying disease (disease modifying):
    - Aducanumab, Lecanemab
  - Medications to lessen symptoms (confusion)
    - Cholinesterase inhibitors: Donepezil, galantamine, rivastigmine
    - Glutamate regulator: Memantine



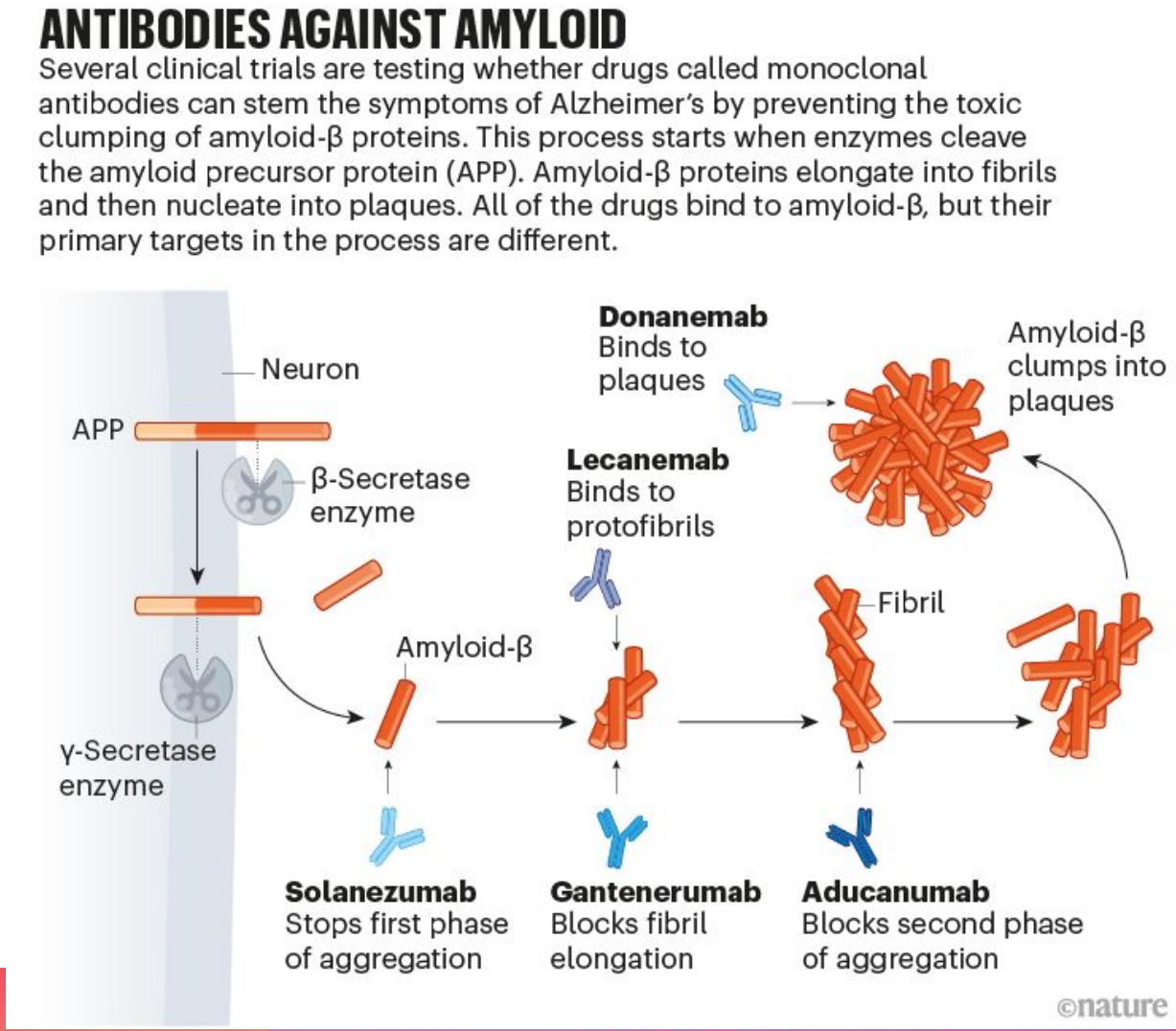
FDA APPROVED SYMPTOMATIC TREATMENT



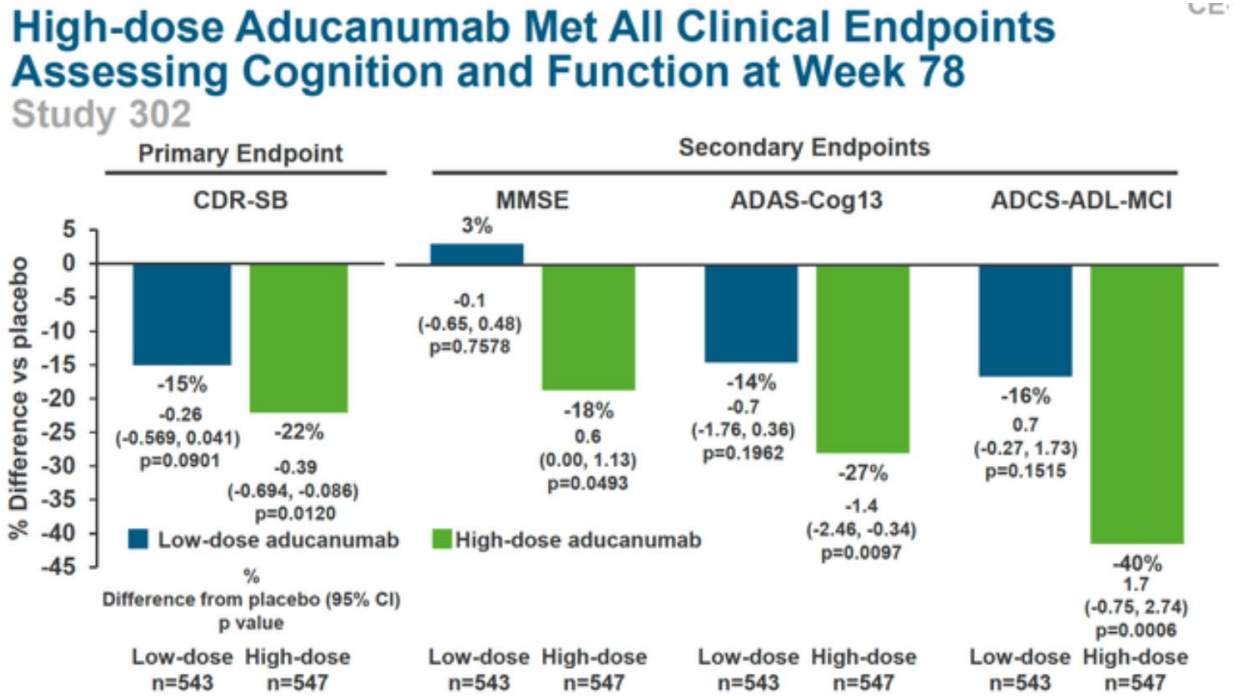
- Cholinesterase inhibitors (donepezil, galantamine, rivastigmine)
  - Prevent breakdown of acetylcholine
  - Enhance neuronal communication
  - Side effects: nausea, vomiting, loss of appetite, diarrhea. bradycardia

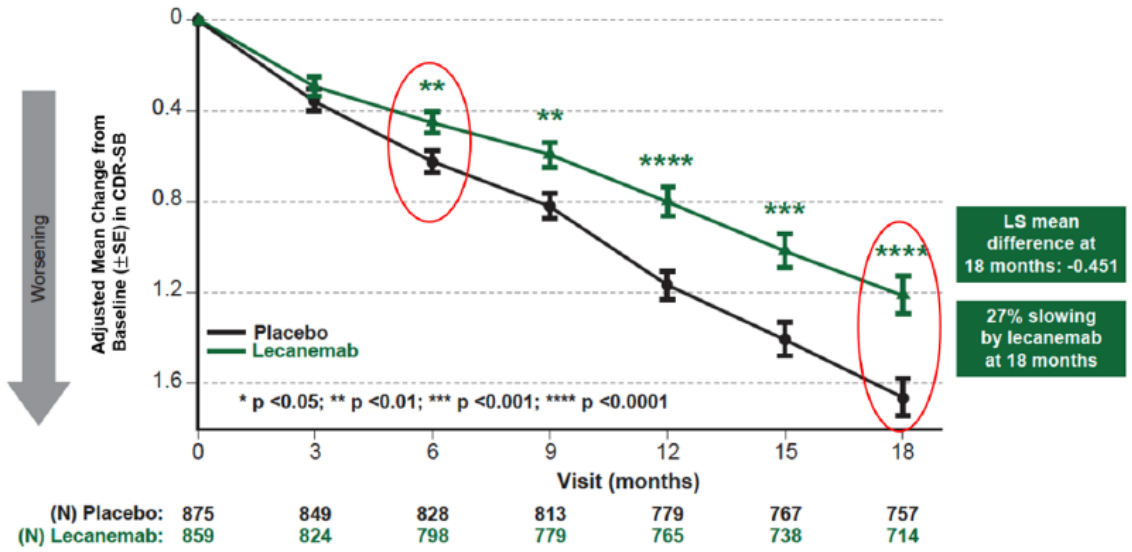
- Glutamate regulator (memantine)
  - Side effects include headache, constipation, confusion, dizziness

ADUCANUMAB AND LECANEMAB MECHANISM OF ACTION

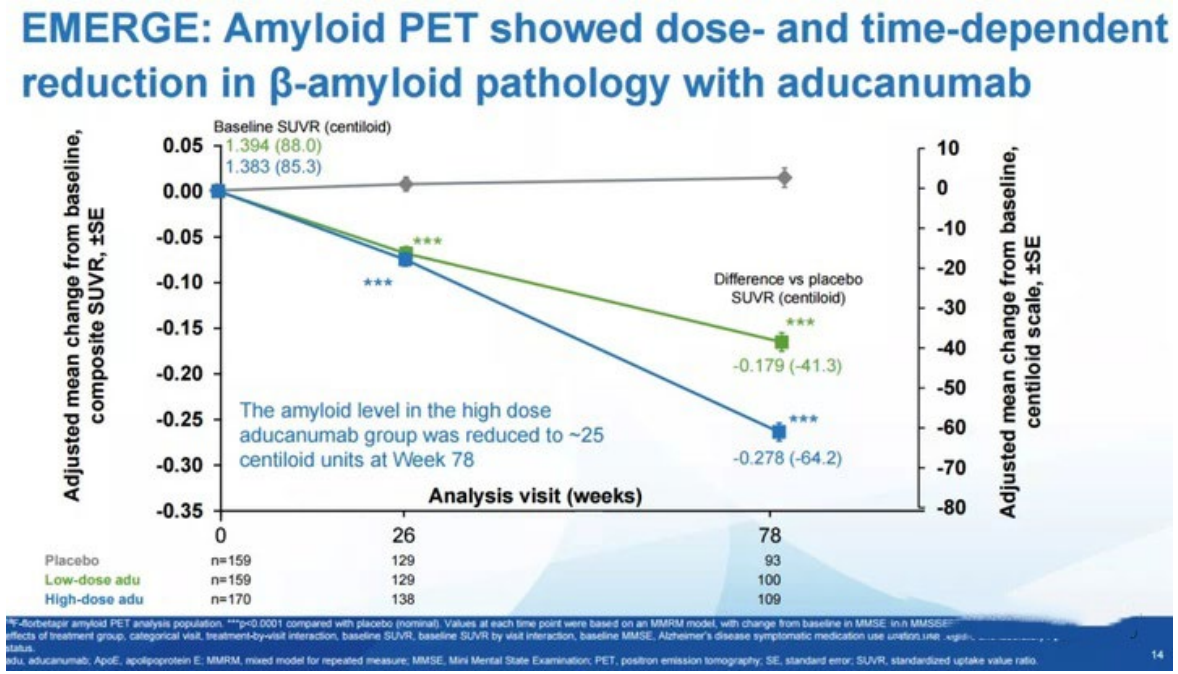


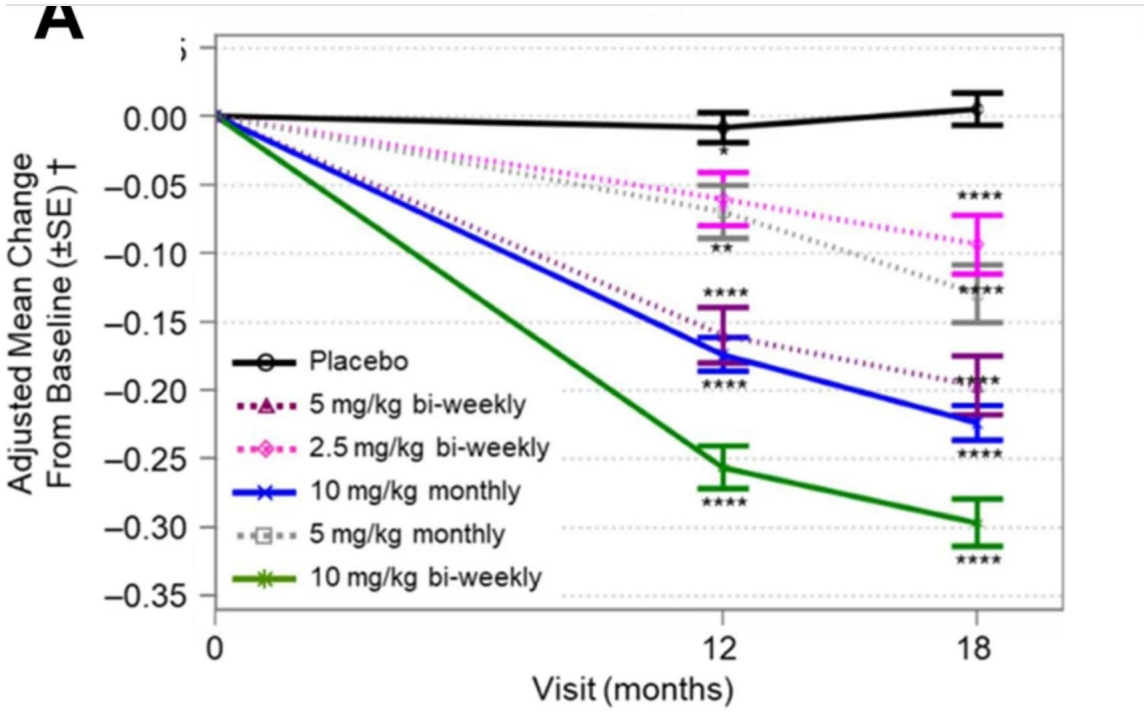
ADUCANUMAB AND LECANEMAB SLOWED COGNITIVE DECLINE





ADUCANUMAB AND LECANEMAB REDUCTION IN BETA AMYLOID LOAD





AMYLOID RELATED IMAGING ABNORMALITY (ARIA)

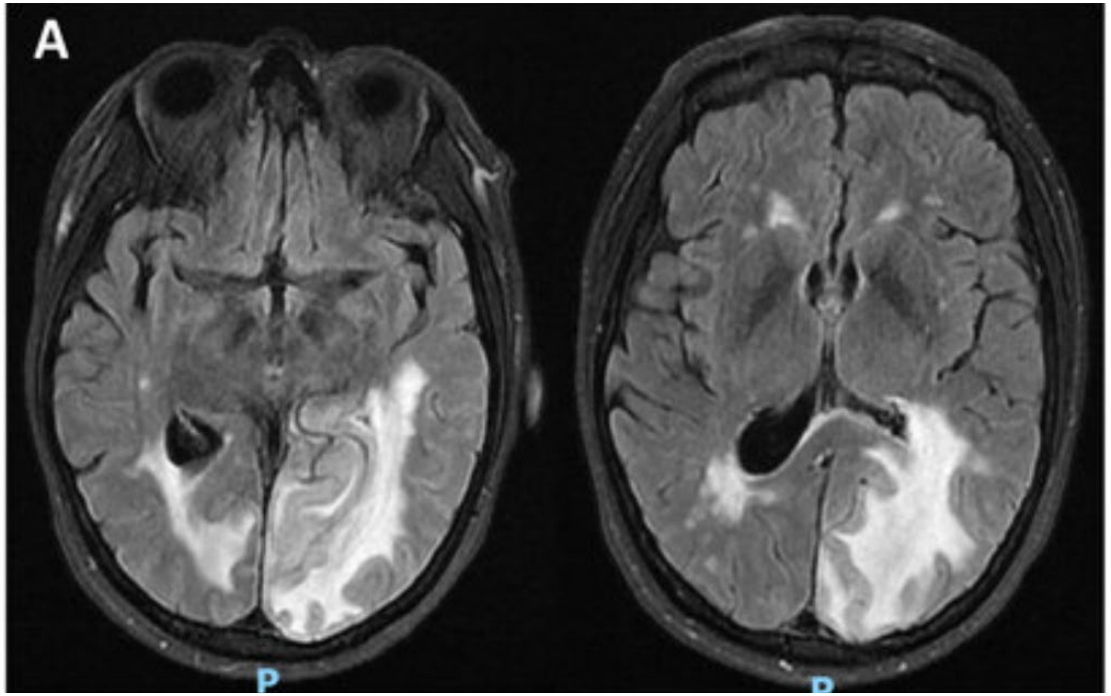
Amyloid-related imaging abnormalities (ARIA)

ARIA refers to radiographic abnormalities observed with anti-Aβ antibodies

- ARIA-Edema (ARIA-E) refers to brain vasogenic edema or sulcal effusion
- ARIA-Hemorrhage (ARIA-H) refers to brain microhemorrhages or localized superficial siderosis

ARIA may result from increased cerebrovascular permeability as a consequence of antibody binding to deposited Aβ

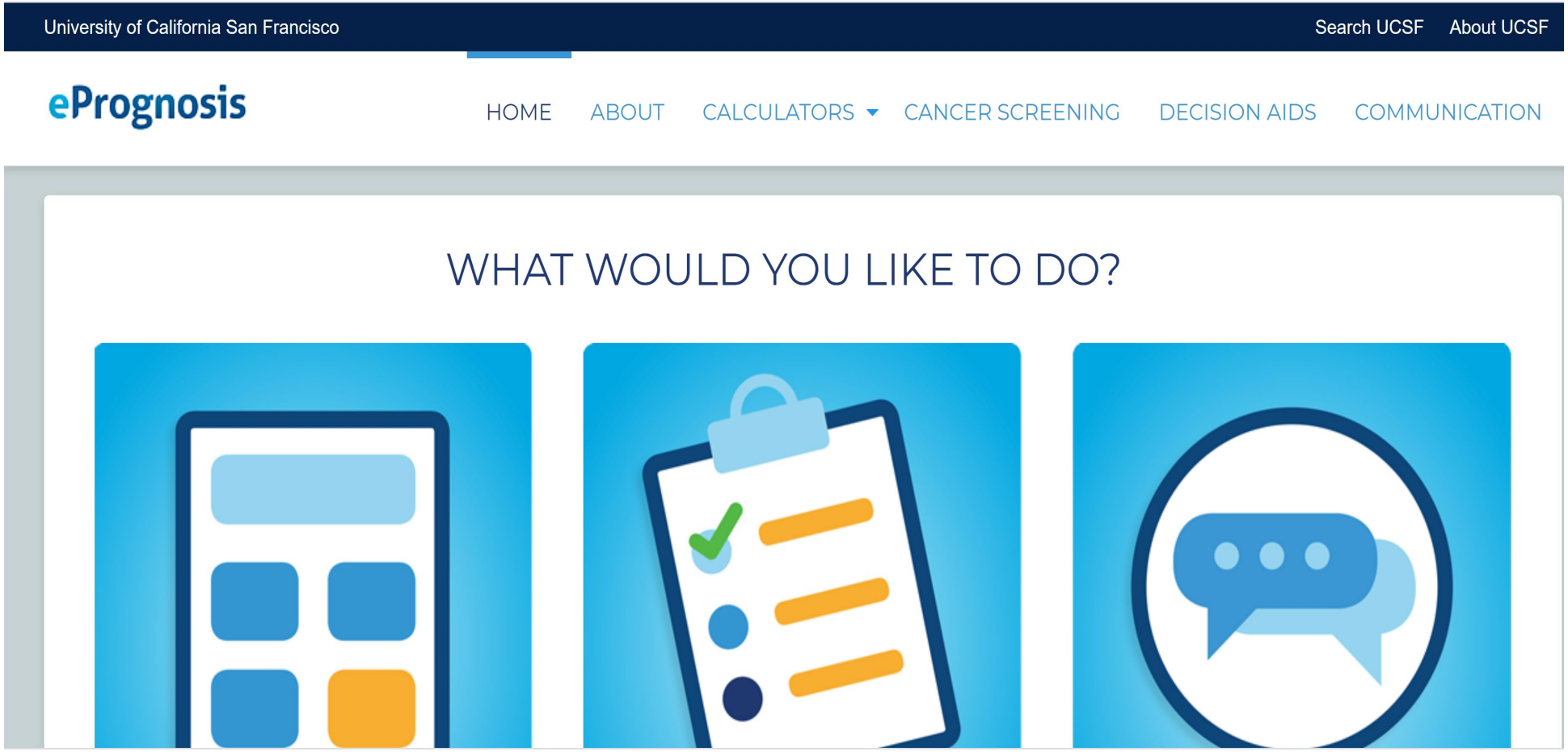
Barakos, J., Purcell, D., Suhy, J. et al. Detection and Management



CHALLENGES OF MONOCLONAL ANTIBODIES

- Safety concerns
- COSTLY
  - Lecanemab annual cost of $26,000
  - Aducanumab annual cost of $28,000-$56,000
- Confirm beta amyloid presence (CSF/Amyloid PET)
- Not widely available
- Exclusion criteria may limit who can get it
- Medicare and VA have announced coverage of Lecanemab
- Aducanumab through clinical trials

PROGNOSTICATION



FUNCTIONAL ASSESSMENT STAGING TEST (FAST)

7a. Ability to speak limited to approximately a half dozen different words or fewer, in the course of an average day or in the course of an intensive interview.

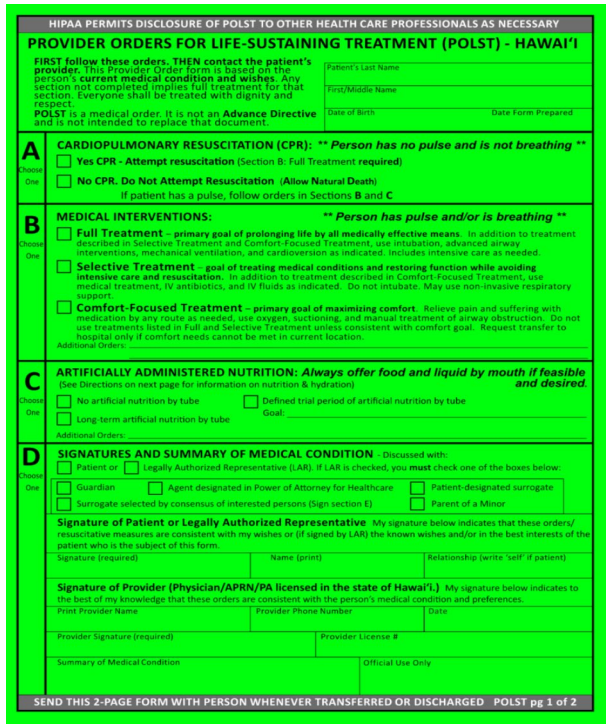
b. Speech ability limited to the use of a single intelligible word in an average day or in the course of an interview (the person may repeat the word over and over.

c. Ambulatory ability lost (cannot walk without personal assistance).

d. Ability to sit up without assistance lost (e.g., the individual will fall over if there are no lateral rests [arms] on the chair).

e. Loss of the ability to smile.

ADVANCED CARE PLANNING



HIPAA PERMITS DISCLOSURE OF POLST TO OTHER HEALTH CARE PROFESSIONALS AS NECESSARY

PROVIDER ORDERS FOR LIFE-SUSTAINING TREATMENT (POLST) - HAWAI'I

FIRST follow these orders, THEN contact the patient's provider. This Provider Order form is based on the person's **current medical condition and wishes**. Any section not completed implies full treatment for that section. Everyone shall be treated with dignity and respect.
POLST is a medical order. It is not an **Advance Directive** and is not intended to replace that document.

Patient's Last Name | First/Middle Name | Date of Birth | Date Form Prepared

A Choose One — **CARDIOPULMONARY RESUSCITATION (CPR):** ** *Person has no pulse and is not breathing* **
- ☐ **Yes CPR - Attempt resuscitation** (Section B: Full Treatment **required**)
- ☐ **No CPR. Do Not Attempt Resuscitation** (**Allow Natural Death**)

If patient has a pulse, follow orders in Sections **B** and **C**

B Choose One — **MEDICAL INTERVENTIONS:** ** *Person has pulse and/or is breathing* **
- ☐ **Full Treatment** – **primary goal of prolonging life by all medically effective means**. In addition to treatment described in Selective Treatment and Comfort-Focused Treatment, use intubation, advanced airway interventions, mechanical ventilation, and cardioversion as indicated. Includes intensive care as needed.
- ☐ **Selective Treatment** – **goal of treating medical conditions and restoring function while avoiding intensive care and resuscitation.** In addition to treatment described in Comfort-Focused Treatment, use medical treatment, IV antibiotics, and IV fluids as indicated. Do not intubate. May use non-invasive respiratory support.
- ☐ **Comfort-Focused Treatment** – **primary goal of maximizing comfort**. Relieve pain and suffering with medication by any route as needed, use oxygen, suctioning, and manual treatment of airway obstruction. Do not use treatments listed in Full and Selective Treatment unless consistent with comfort goal. Request transfer to hospital only if comfort needs cannot be met in current location.

Additional Orders:

C Choose One — **ARTIFICIALLY ADMINISTERED NUTRITION:** ***Always offer food and liquid by mouth if feasible and desired.***
(See Directions on next page for information on nutrition & hydration)
- ☐ No artificial nutrition by tube
- ☐ Defined trial period of artificial nutrition by tube
- ☐ Long-term artificial nutrition by tube

Goal:

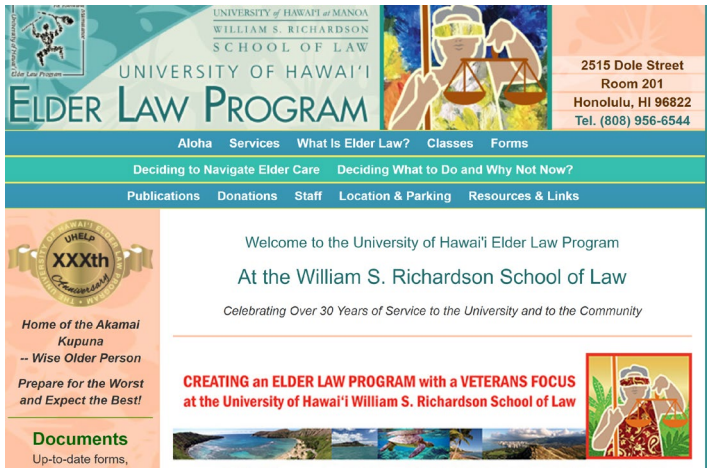
Additional Orders:

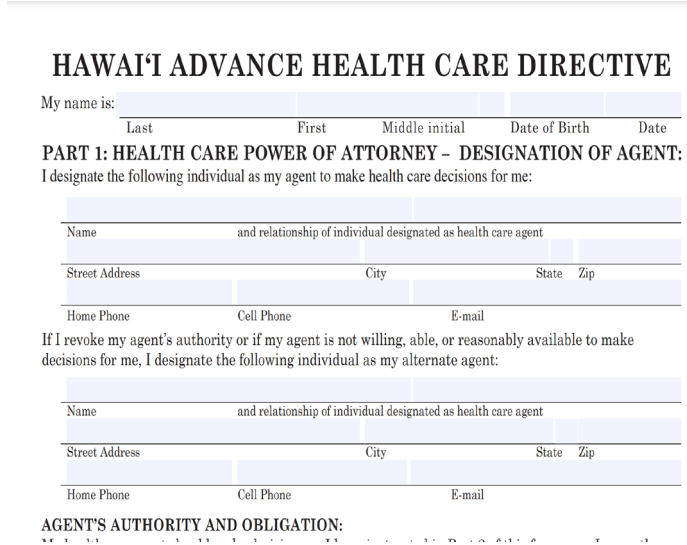
D Choose One — **SIGNATURES AND SUMMARY OF MEDICAL CONDITION** - Discussed with:
☐ Patient or ☐ Legally Authorized Representative (LAR). If LAR is checked, you **must** check one of the boxes below:
☐ Guardian ☐ Agent designated in Power of Attorney for Healthcare ☐ Patient-designated surrogate
☐ Surrogate selected by consensus of interested persons (Sign section E) ☐ Parent of a Minor

Signature of Patient or Legally Authorized Representative My signature below indicates that these orders/ resuscitative measures are consistent with my wishes or (if signed by LAR) the known wishes and/or in the best interests of the patient who is the subject of this form.
Signature (required) | Name (print) | Relationship (write 'self' if patient)

Signature of Provider (Physician/APRN/PA licensed in the state of Hawai'i.) My signature below indicates to the best of my knowledge that these orders are consistent with the person's medical condition and preferences.
Print Provider Name | Provider Phone Number | Date
Provider Signature (required) | Provider License #
Summary of Medical Condition | Official Use Only

SEND THIS 2-PAGE FORM WITH PERSON WHENEVER TRANSFERRED OR DISCHARGED POLST pg 1 of 2





HAWAI'I ADVANCE HEALTH CARE DIRECTIVE

My name is: _____
Last First Middle initial Date of Birth Date

PART 1: HEALTH CARE POWER OF ATTORNEY – DESIGNATION OF AGENT:
I designate the following individual as my agent to make health care decisions for me:

Name and relationship of individual designated as health care agent
Street Address City State Zip
Home Phone Cell Phone E-mail

If I revoke my agent's authority or if my agent is not willing, able, or reasonably available to make decisions for me, I designate the following individual as my alternate agent:

Name and relationship of individual designated as health care agent
Street Address City State Zip
Home Phone Cell Phone E-mail

AGENT'S AUTHORITY AND OBLIGATION:

COMMUNITY RESOURCES:

Alzheimer's Association	**www.alz.org**
Alzheimer's Foundation of America	**www.alzfdn.org**
National Institute on Aging (NIA)	**www.nia.nih.gov/alzheimers**
National Institute of Neurological Disorders and Stroke (NINDS)	**www.ninds.nih.gov**
Caring.com	**https://www.caring.com/senior-living/memory-care-facilities**

- Project Dana "Caring for the caregiver" Program https://www.projectdana.org/caregiver
- Group coaching with QMC Dr. Sarah Racsa and LCSW Marisa Sakuda. 3rd Wednesdays via zoom
- Insurance: Medicaid Service coordinators, VA (get depends, some DME, and home assessments

THANK YOU!