



What Should I Know About Alzheimer's Disease?

Presbyterian Older Adult Ministry Network Conference
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Grandmother, Margaret Lutz McDonnell (“Mimi”) and my father, Thomas McDonnell, Jr. about 1947



Mimi with her
husband,
Thomas
McDonnell, Sr.,
and her mother,
Pearl Lutz

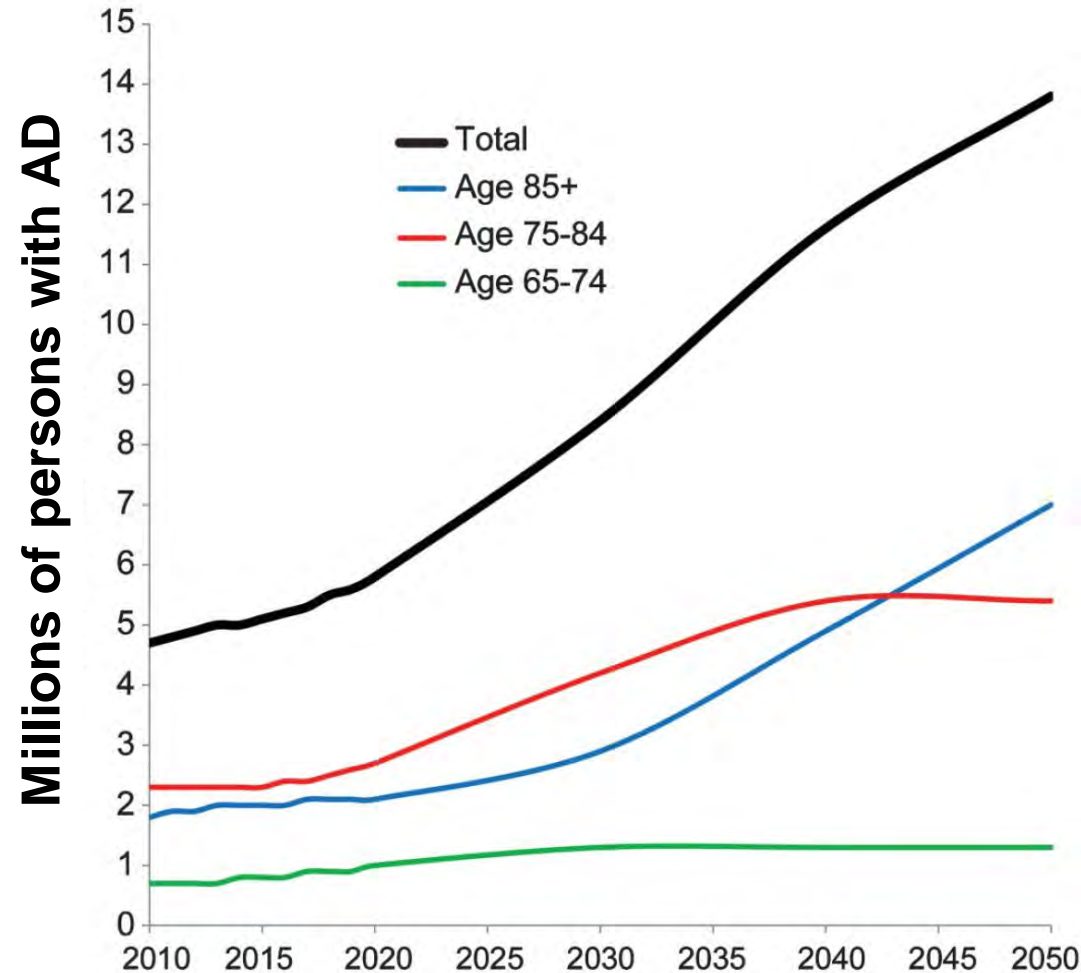




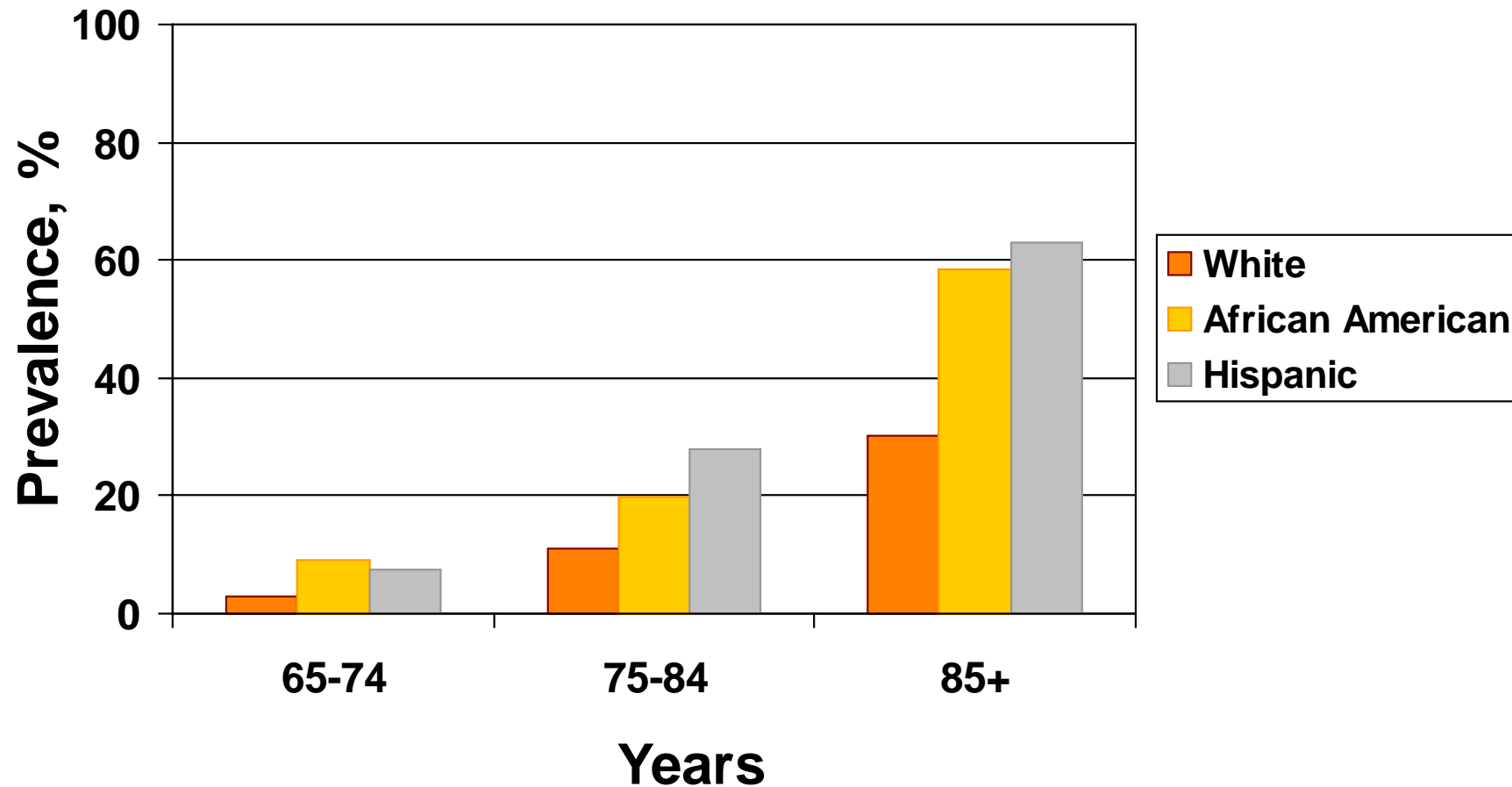
Mimi with her husband, Tom McDonnell, Sr. at their 50th wedding anniversary about 1986



Prevalence of Dementia Due to Alzheimer's Disease in the US



Increased Prevalence of Dementia Due to Alzheimer's Disease with Aging



Risk Factors for Alzheimer's Disease

- Age
- Family history of Alzheimer's disease
- Apolipoprotein E4 (*APOE4*) – genetic risk
- Vascular risk factors:
 - Hypercholesterolemia
 - Hypertension
 - Inflammation
 - Obesity
 - Diabetes mellitus
 - Physical inactivity

*These risk factors can
be modified*

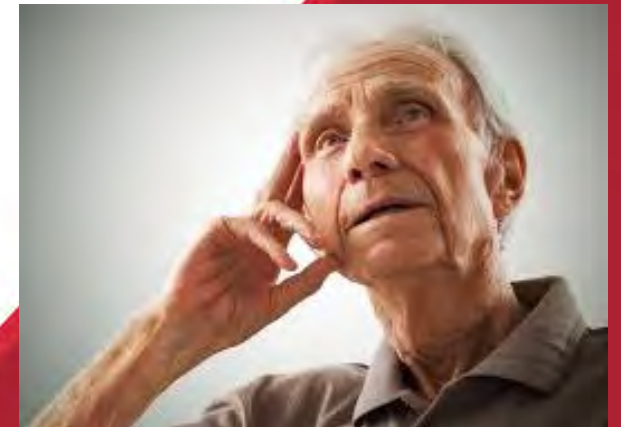


How is Dementia Different than Normal Aging?

Normal aging:

- May take longer to learn and recall new information
- May occasionally have trouble with word finding
- May have trouble remembering names of new acquaintances
- Still able to maintain daily activities

Dementia is not a normal part of aging.



<http://thedementiaqueen.com/category/selfcare/>



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How Do We Diagnose Dementia in the Clinic?

Cognitive/behavioral symptoms that:

- Interfere with usual functional ability
- Are not explained by medical or psychiatric conditions
- Are detected through a combination of history & cognitive assessment
- Affect at least 2 thinking areas:
 - Memory
 - Reasoning/judgment
 - Visuospatial skills
 - Language
 - Personality/behavior



http://mwchc.org/?page_id=2925



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Key Medical History Questions

- Review medications in detail (including OTCs!)
- Review vascular risk factors and stroke symptoms
- Screen for depression
- Ask about symptoms of obstructive sleep apnea
- Ask about prior serious head injuries
- Query about tremors, falls, incontinence, swallowing problems



<https://www.nia.nih.gov/health/publication/talking-your-older-patient>

How Do We Diagnose Dementia in the Clinic?

- Detailed interview with patient and family
- Physical exam
- Cognitive testing
- Basic lab tests: vitamin B₁₂, thyroid, vitamin D, blood count and blood chemistry, liver enzymes, HIV
- Brain scan (CT or MRI)
- Education and feedback
- Referral to appropriate resources



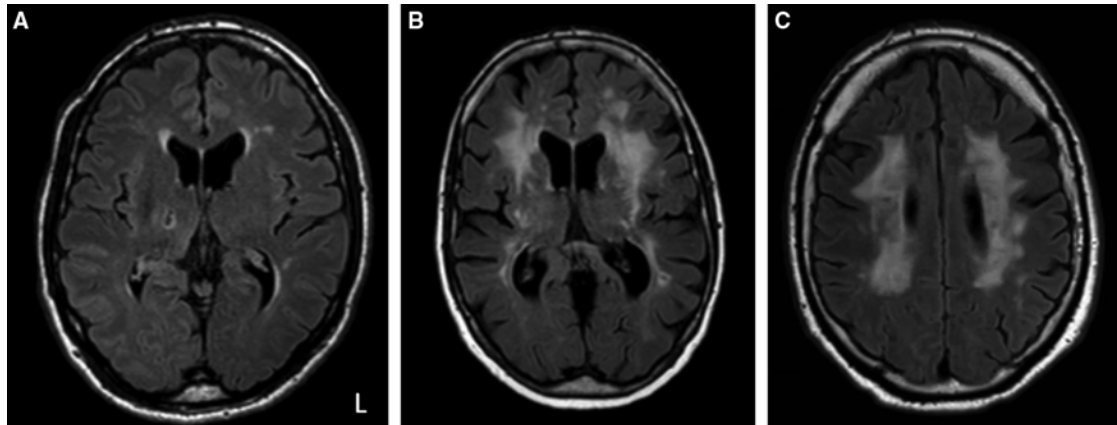
<http://www.dailymail.co.uk/health/article-3008253/Dementia-Six-questions-risk-dementia.html>



What do brain scans done in a clinical setting show?

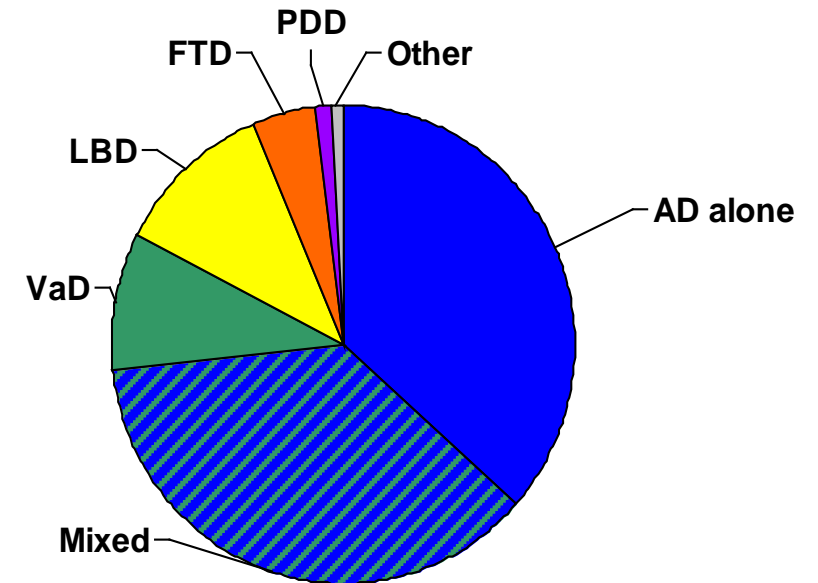
Usually CT or MRI

- Atrophy (shrinkage of brain tissue)
- Tumors
- Bleeding
- Strokes and damage to connecting fibers (white matter changes)



Common Types of Dementia

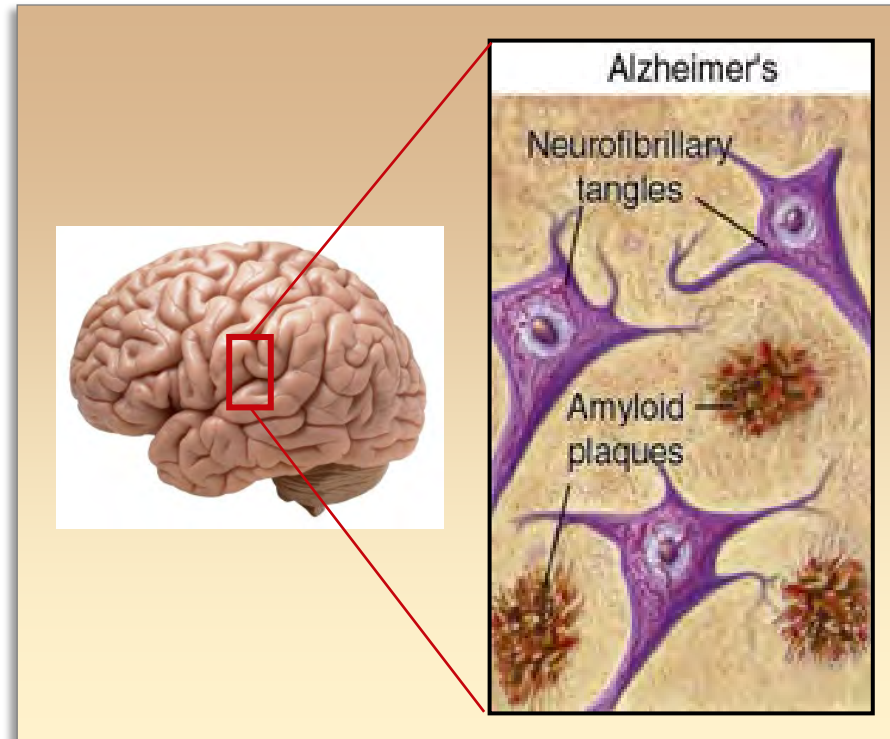
- Alzheimer's disease (AD)
- Lewy body dementia (LBD)
- Vascular dementia (VaD)
- Frontotemporal dementia (FTD)
- Parkinson's disease dementia (PDD)
- ***Limbic-predominant age-related TDP-43 encephalopathy (LATE)***



How Do We Detect Dementia Due to Alzheimer's Disease?



OR



Brain Changes in Alzheimer's Disease

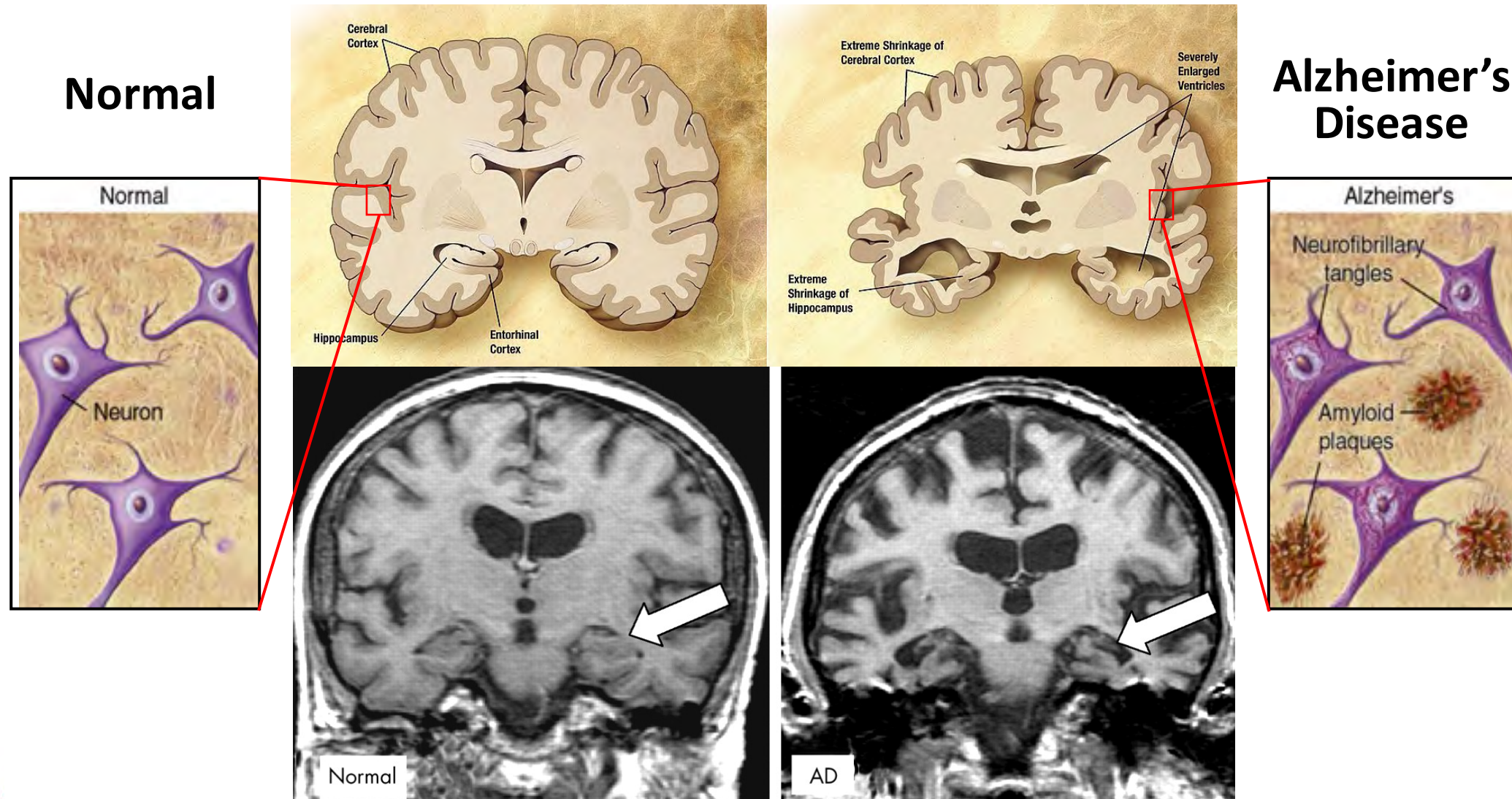
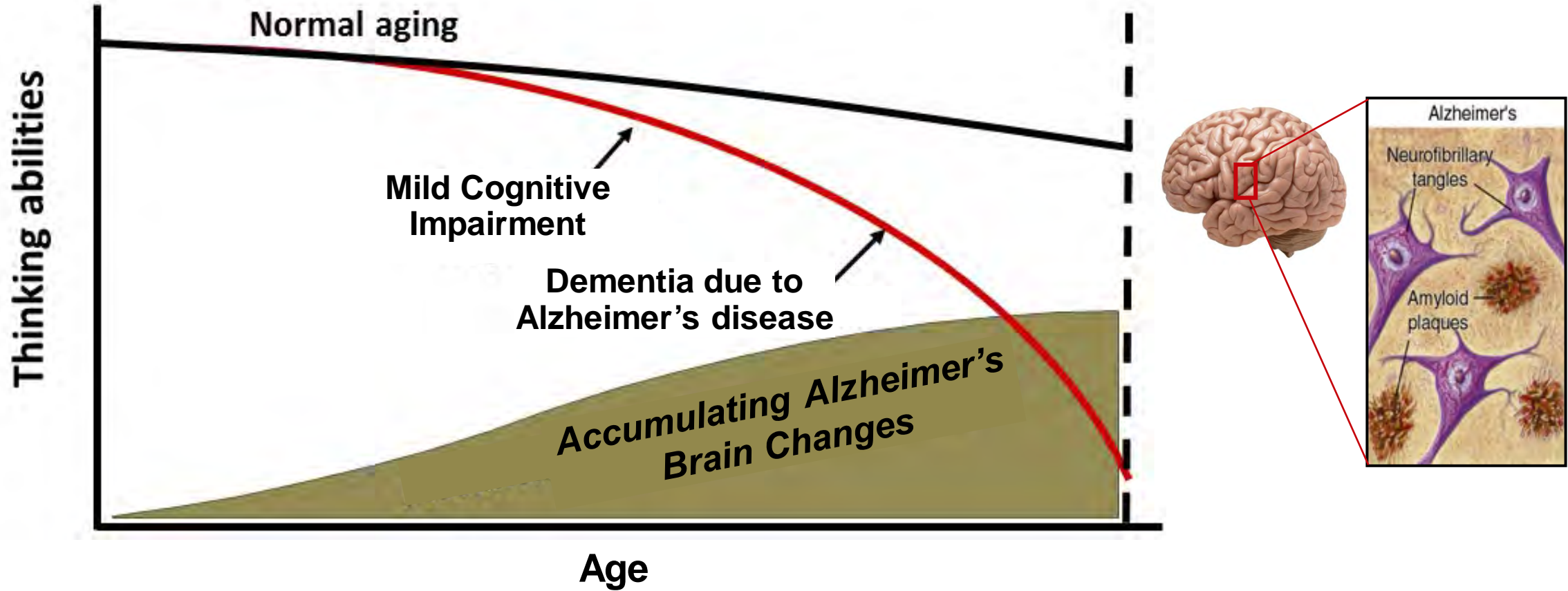


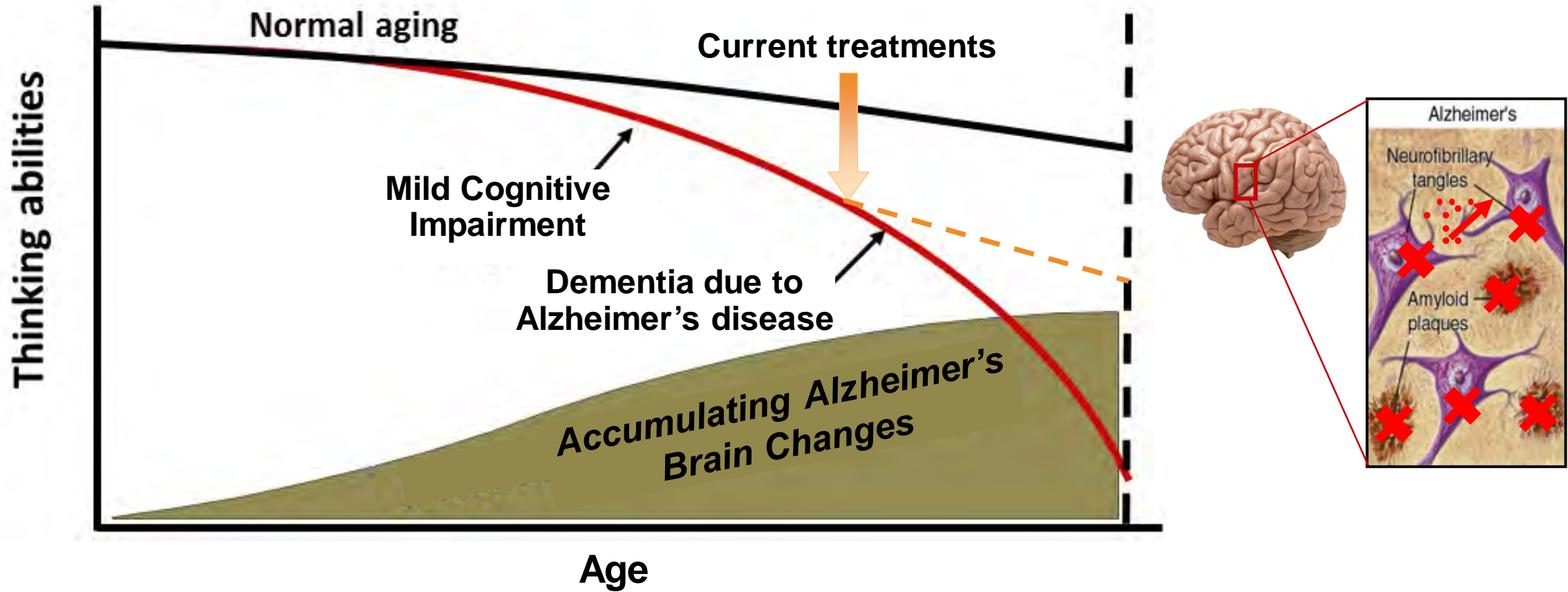
Figure: Public Domain.

MRI: van der Flier WM, Scheltens P. J Neurol Neurosurg Psychiatry 2005;76(Suppl V):v45-v52. doi: 10.1136/jnp.2005.082149

Progression of Alzheimer's Dementia



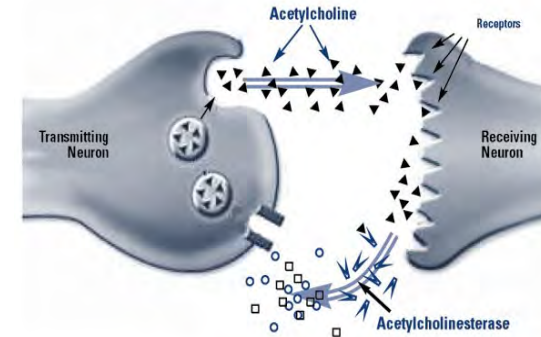
Most FDA-approved Medications for Alzheimer's Dementia Treat Symptoms and Not the Disease



FDA-Approved Treatments for AD

- **Acetylcholinesterase Inhibitors**

- Donepezil
- Rivastigmine
- Galantamine



- **N-methyl-D-aspartate (NMDA) Receptor Antagonists**

- Memantine

Above treatments only delay symptomatic progression

SPRINT-MIND STUDY

(Systolic Blood Pressure Intervention Trial - Memory and Cognition in Decreased Hypertension)

- 2800 people with average systolic blood pressure **130 mm Hg**
- Tested whether treating to a goal blood pressure **<120 mm Hg** **compared to <140 mm Hg** reduced risk of dementia, MCI, and/or both
- Given 2-3 blood pressure medications

- **Better control of blood pressure reduced mild cognitive impairment and dementia by 15-19%**



Williamson JD et al. *JAMA*. 2019;321(6):553-561.
doi:10.1001/jama.2018.21442

Optimizing Care for Patients with Dementia

Establish routine

- Sleep-wake times
- Timing of medications
- Routine daily tasks
- Calendar

Make sure the person with AD is safe

- Medication management
- Driving
- Kitchen safety
- Heavy equipment, tools, etc.



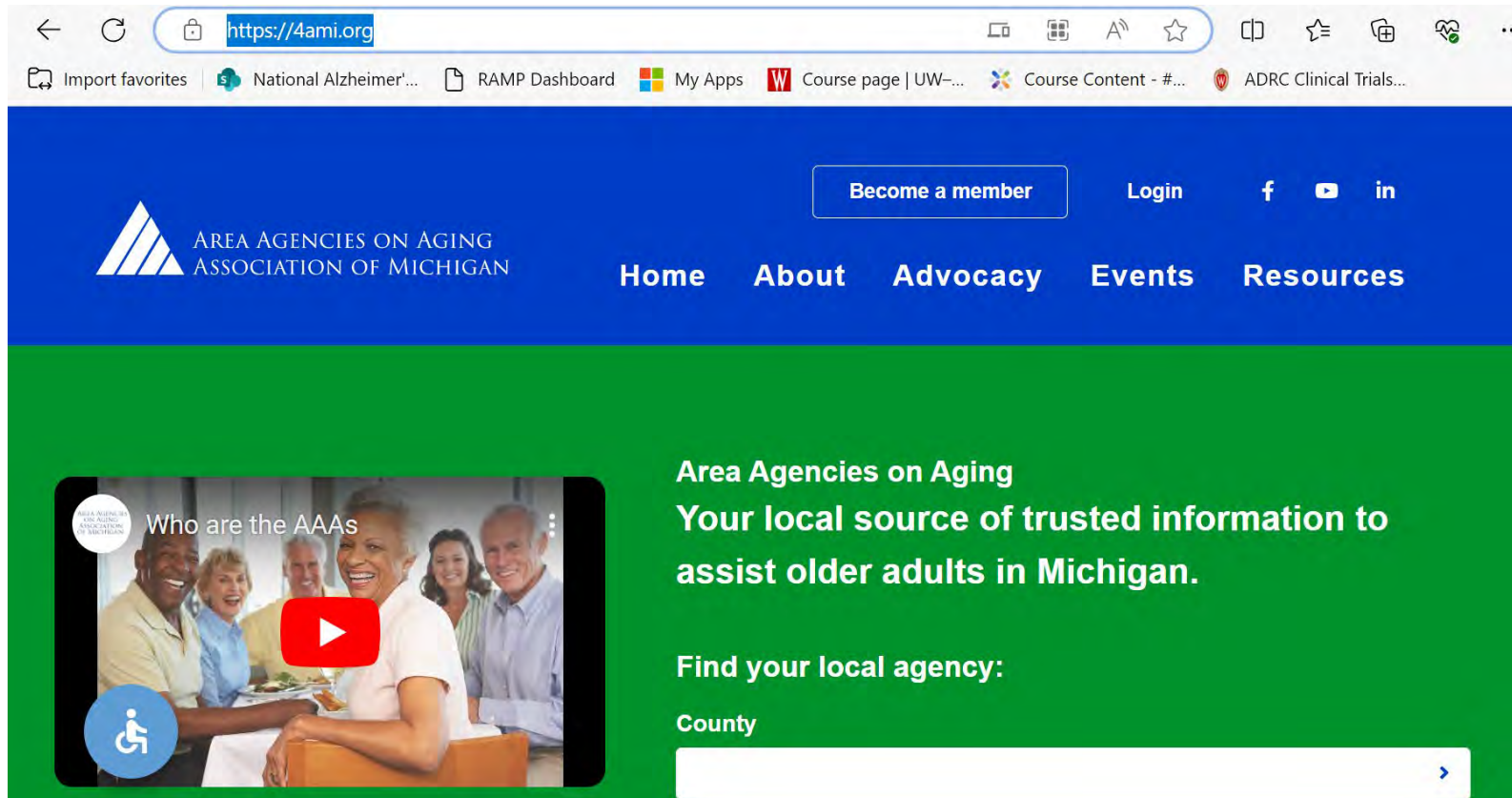
http://www.medicinenet.com/dementia_pictures_slideshow/article.htm

Supporting Caregivers

- Connect to local community resources (<https://4ami.org/>)



http://www.medicinenet.com/dementia_pictures_slideshow/article.htm



The screenshot shows the homepage of the Area Agencies on Aging Association of Michigan. The browser address bar displays <https://4ami.org>. The website has a blue header with the logo on the left, which consists of three white triangles forming a larger triangle, followed by the text "AREA AGENCIES ON AGING ASSOCIATION OF MICHIGAN". To the right of the logo are buttons for "Become a member", "Login", and social media icons for Facebook, YouTube, and LinkedIn. Below the header is a navigation menu with links for "Home", "About", "Advocacy", "Events", and "Resources". The main content area has a green background. On the left, there is a video player with a red play button and a blue accessibility icon. The video title is "Who are the AAAs" and the thumbnail shows a group of diverse older adults smiling. To the right of the video, the text reads: "Area Agencies on Aging Your local source of trusted information to assist older adults in Michigan." Below this is a section titled "Find your local agency:" with a "County" label and a white search input field with a blue arrow on the right.

Supporting Caregivers

- Connect to local community resources (<https://4ami.org/>)
- Seek out caregiver support groups and training
- Take advantage of respite opportunities



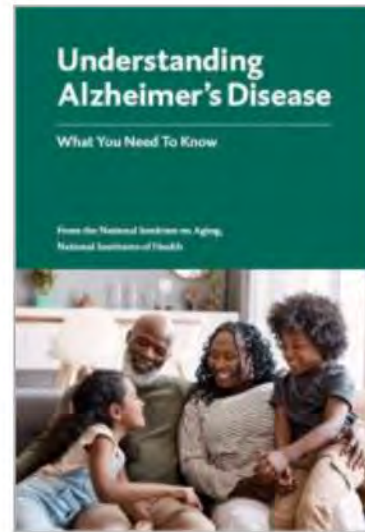
http://www.medicinenet.com/dementia_pictures_slideshow/article.htm

Free Publications from NIH/NIA (<https://order.nia.nih.gov/>)

Alzheimer's Disease Publications



[Caring for a Person with Alzheimer's Disease: Your Easy-to-Use Guide](#)



[Understanding Alzheimer's Disease: What You Need to Know \(easy-to-read booklet\)](#)



[Understanding Memory Loss \(easy-to-read booklet\)](#)



[Alzheimer's Disease Fact Sheet](#)

Alzheimer's Association (https://alz.org)

The screenshot shows the Alzheimer's Association website. At the top, the browser address bar displays the URL https://www.alz.org/?ver=b&gl=1*173390y*_ga*MjA4MzgxdQxNC4xNjk0NjYyNDky.... The website header features the Alzheimer's Association logo on the left, the 24/7 Helpline number 800.272.3900 in the center, and a green 'DONATE' button on the right. Below the header is a navigation bar with links for 'About', 'News', 'Events', 'Professionals', 'En Español', and 'E-News'. A dark purple navigation bar contains the main menu items: 'Alzheimer's & Dementia', 'Help & Support', 'Research', 'Get Involved', 'Local Resources', and 'Search'. The 'Help & Support' link is highlighted with a white arrow pointing to it. Below this bar, a breadcrumb trail shows 'Help & Support >' and a 'CLOSE X' button. The main content area displays a grid of six buttons: 'Help & Support' (with a home icon), 'I Have Alzheimer's', 'Caregiving', 'Resources', 'Brain Health', and 'Community', each with a right-pointing arrow.

ALZHEIMER'S ASSOCIATION

24/7 HELPLINE
800.272.3900

DONATE

About News Events Professionals En Español E-News

Alzheimer's & Dementia Help & Support Research Get Involved Local Resources Search

Help & Support > **CLOSE X**

Help & Support I Have Alzheimer's Caregiving

Resources Brain Health Community

End-of-Life Care

- Establish advanced directives early
- Identify care goals
- Optimize care resources
- Re-evaluate decisional capacity regularly
- Discuss stopping dementia medications in severe stages of disease
- Consider use of hospice services
- May need one-on-one feeding; no role for feeding tubes



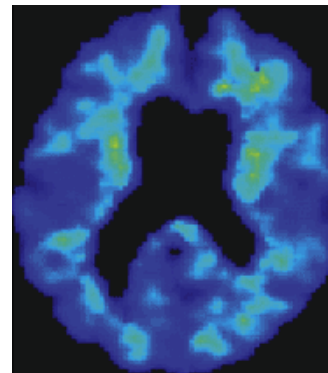
It's a New Era for Alzheimer's Diagnosis and Treatment.....

New Biomarkers for Alzheimer's

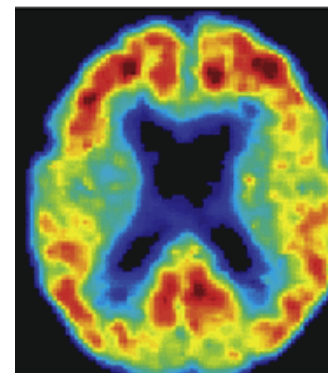
- Amyloid and tau can now be measured in:
 - Spinal fluid
 - Positron Emission Tomography (PET) scans
 - Blood tests



Normal



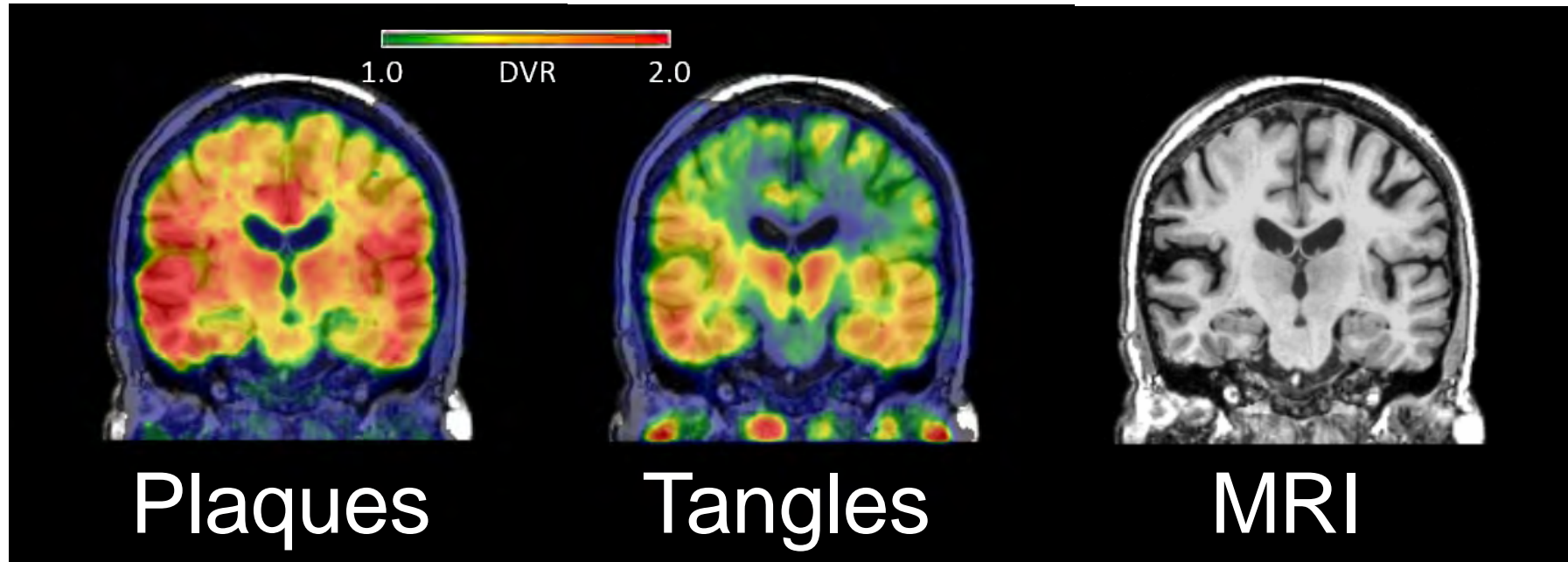
Elevated
Amyloid



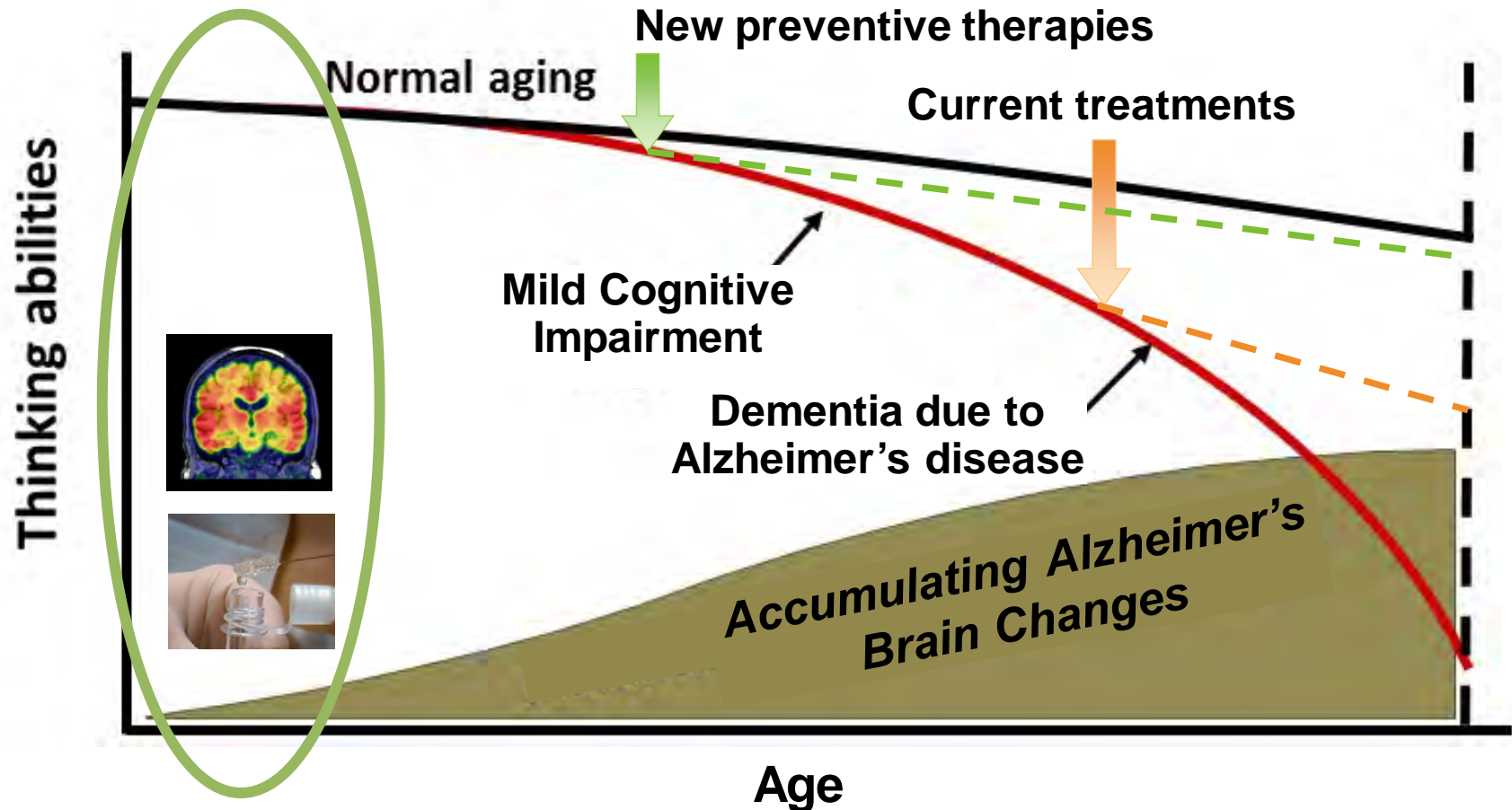
Sevigny J, et al. *Alzheimer Dis Assoc Disord.* 2016;30:1–7
Vitali et al. *Semin Neurol.* 2008;28(4):467-483.

AD Brain Changes

70 year old woman with cognitive decline (still in normal range)



Developing New Therapies

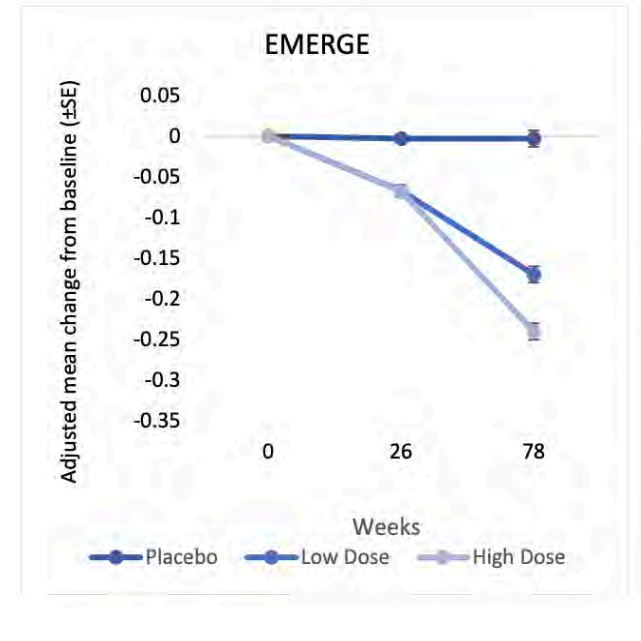
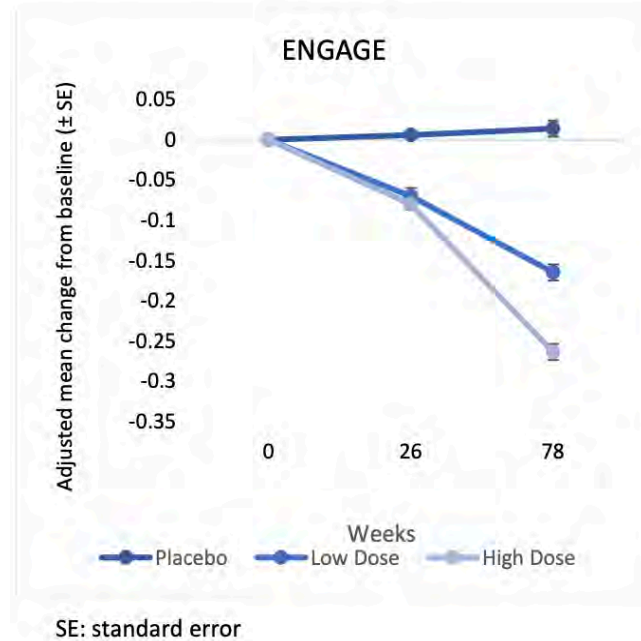


Does Aducanumab Slow MCI/Dementia due to Alzheimer's Disease?

Amyloid

Reduced amyloid, but variable cognitive effects

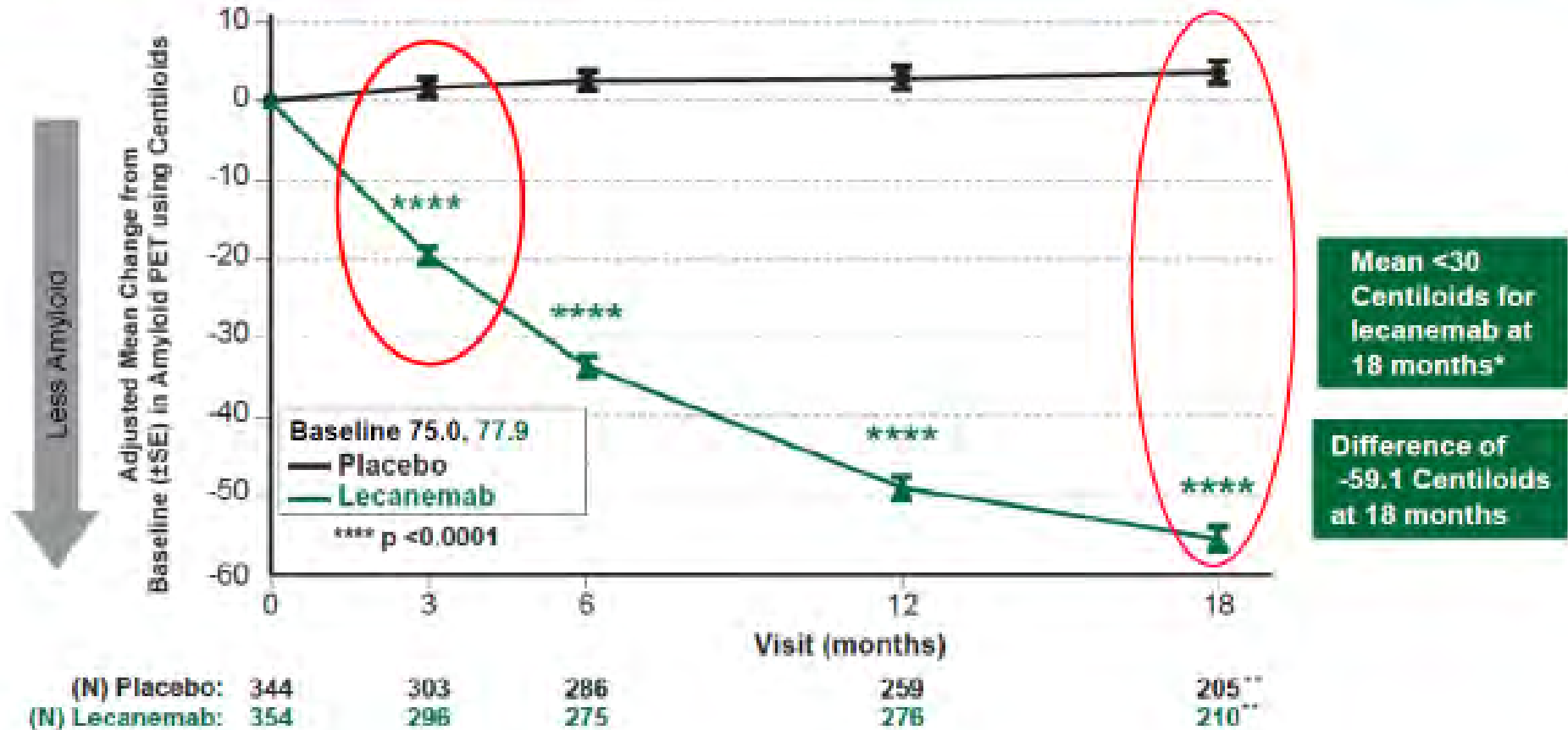
Cognition benefit?



	ENGAGE	EMERGE
High dose	--	X
Low dose	--	--

Amyloid PET:

Lecanemab Significantly Reduced Fibrillar Amyloid Burden at All Time Points Beginning at 3 Months



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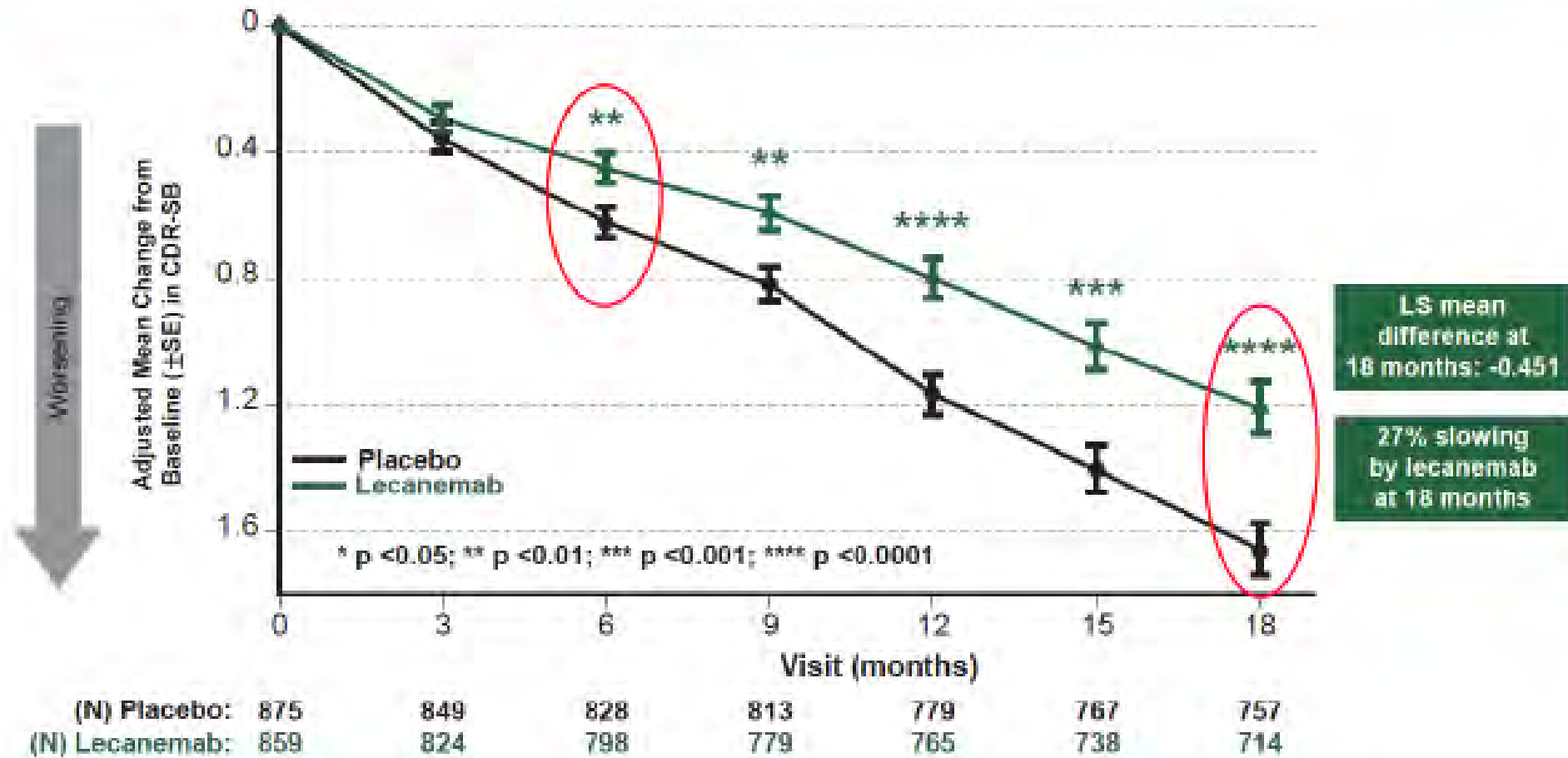
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van Dyck, et al. N Engl J Med 2023; 388:9-21

Clarity AD Primary Endpoint: CDR-SB

Lecanemab Significantly Slowed Disease Progression on CDR-SB by 27% at 18 Months and at All Time Points Beginning at 6 Months



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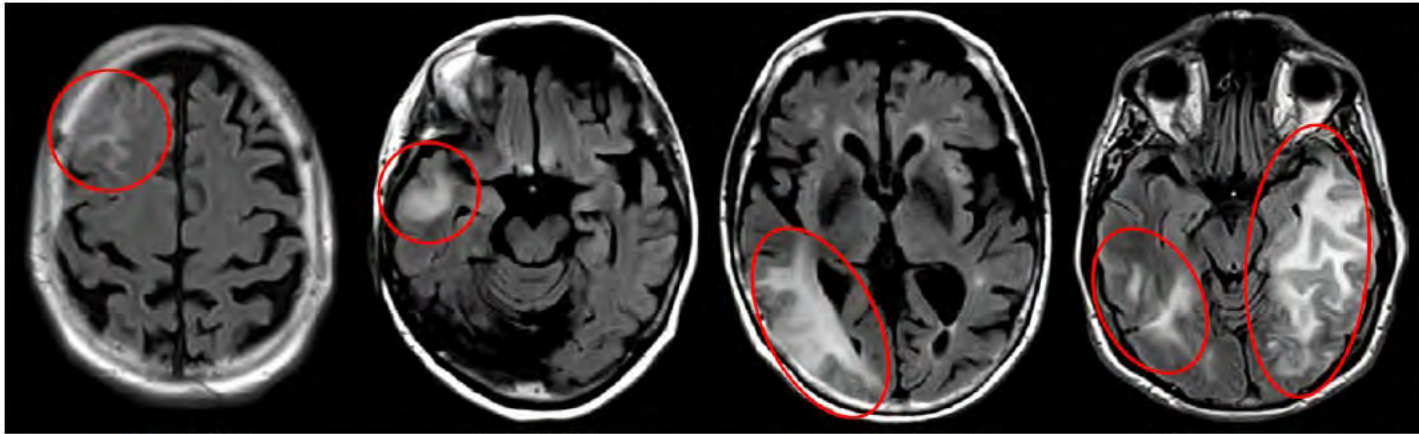
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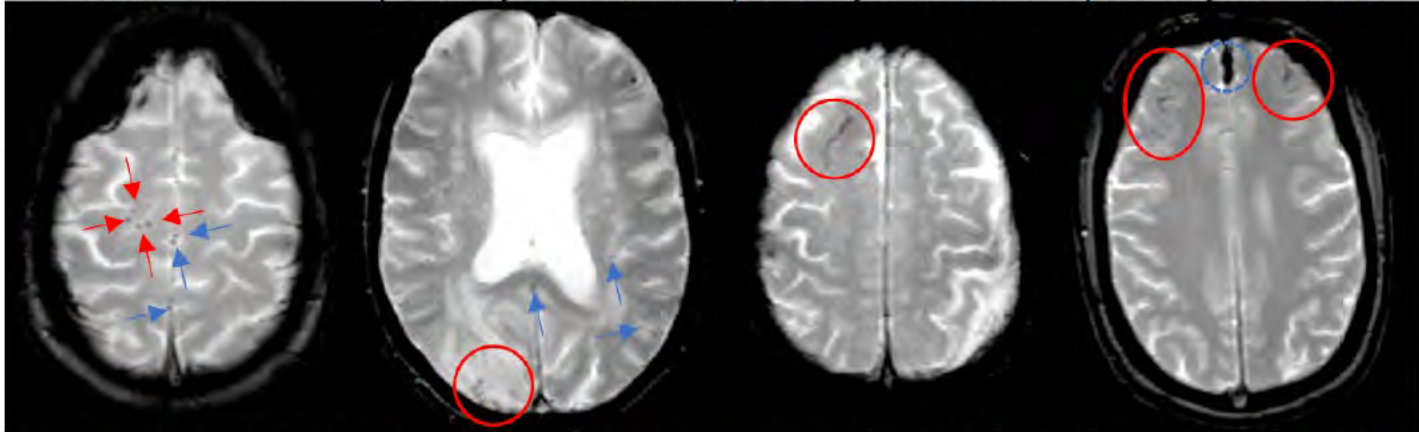
van Dyck, et al. N Engl J Med 2023; 388:9-21

Adverse Effects of Anti-amyloid Therapies: Anti-Amyloid Imaging Abnormalities (ARIA-E and ARIA-H)



1A - Mild sulcal ARIA-E 1B - Mild parenchymal ARIA-E 1C - Moderate parenchymal ARIA-E 1D - Severe parenchymal ARIA-E

E=Edema



2A - Moderate ARIA-H microhemorrhages 2B - Severe ARIA-H microhemorrhages 2C - Mild ARIA-H superficial siderosis 2D - Moderate ARIA-H superficial siderosis

H=hemorrhage

Get involved with education and research!



<https://www.nia.nih.gov/alzheimers/publication/participating-alzheimers-research/introduction>

Summary

- Dementia risk increases with age, but it's not a normal part of aging.
- Controlling blood pressure is very important for brain health.
- There are many causes of cognitive symptoms and some are reversible.
- Dementia care plans should include a structured environment, caregiver support, use of community resources, and medical therapy.
- New biomarkers can pinpoint the cause of dementia as Alzheimer's or not.
- New IV therapies can reduce brain amyloid levels in persons with mild cognitive impairment or dementia due to AD.

Thank you!

