

ALZHEIMER'S RESEARCH UPDATE

2019

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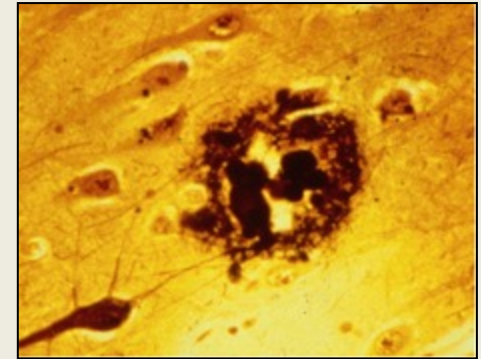
First Report of Alzheimer's Disease



"I have lost myself."



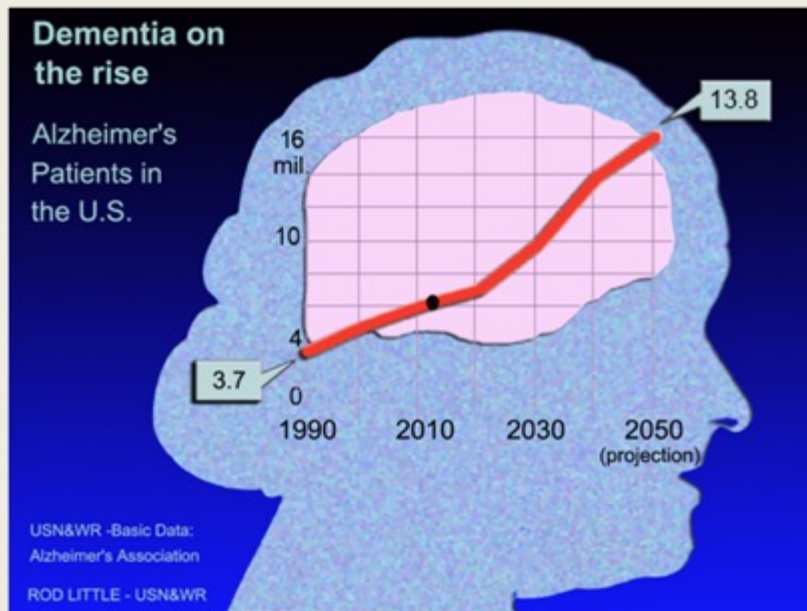
Alois Alzheimer, 1907



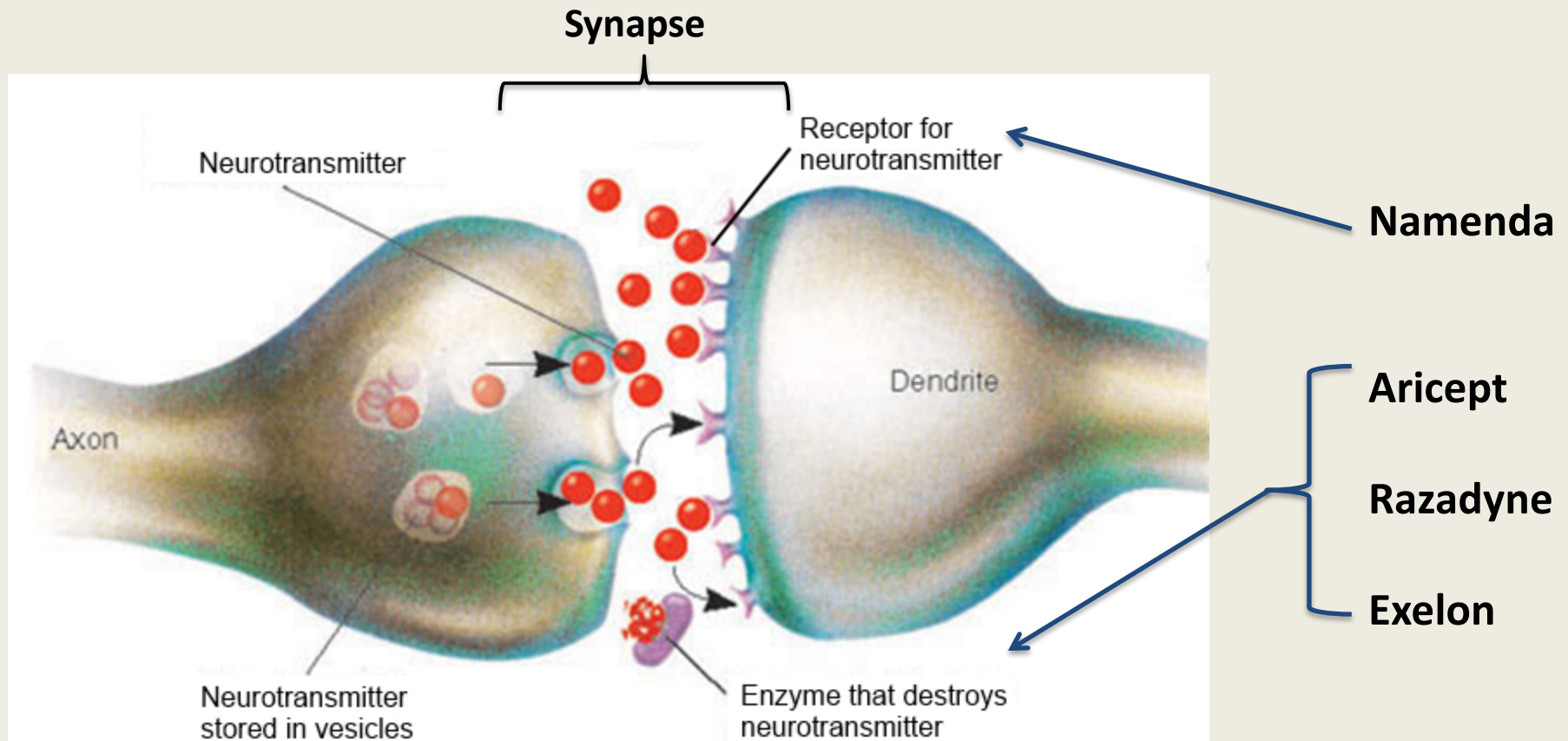
Plaques and Tangles

THE PROBLEM: ALZHEIMER'S DISEASE IN US

- 5.7 million patients
- \$277 billion annual cost
- \$1.1 trillion by 2050
- 10% of people over age 65
- 40-50% of people over age 85

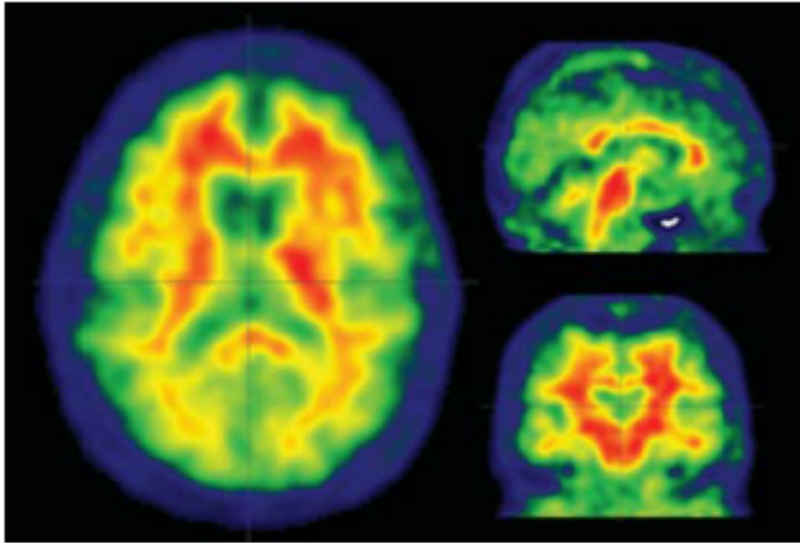


Current Alzheimer's Drugs Only Enhance the way Neurons Communicate with Each Other



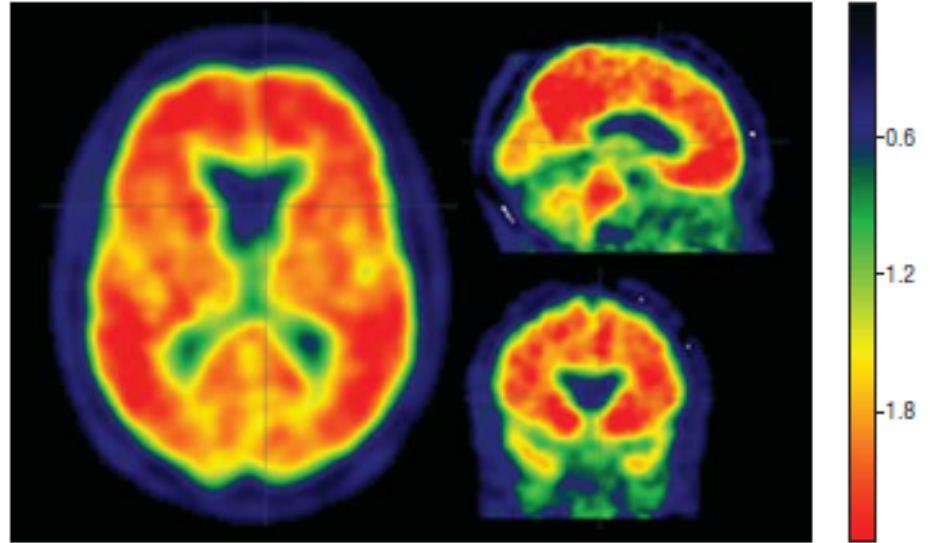
PiB-PET: Amyloid Imaging in Alzheimer's

A



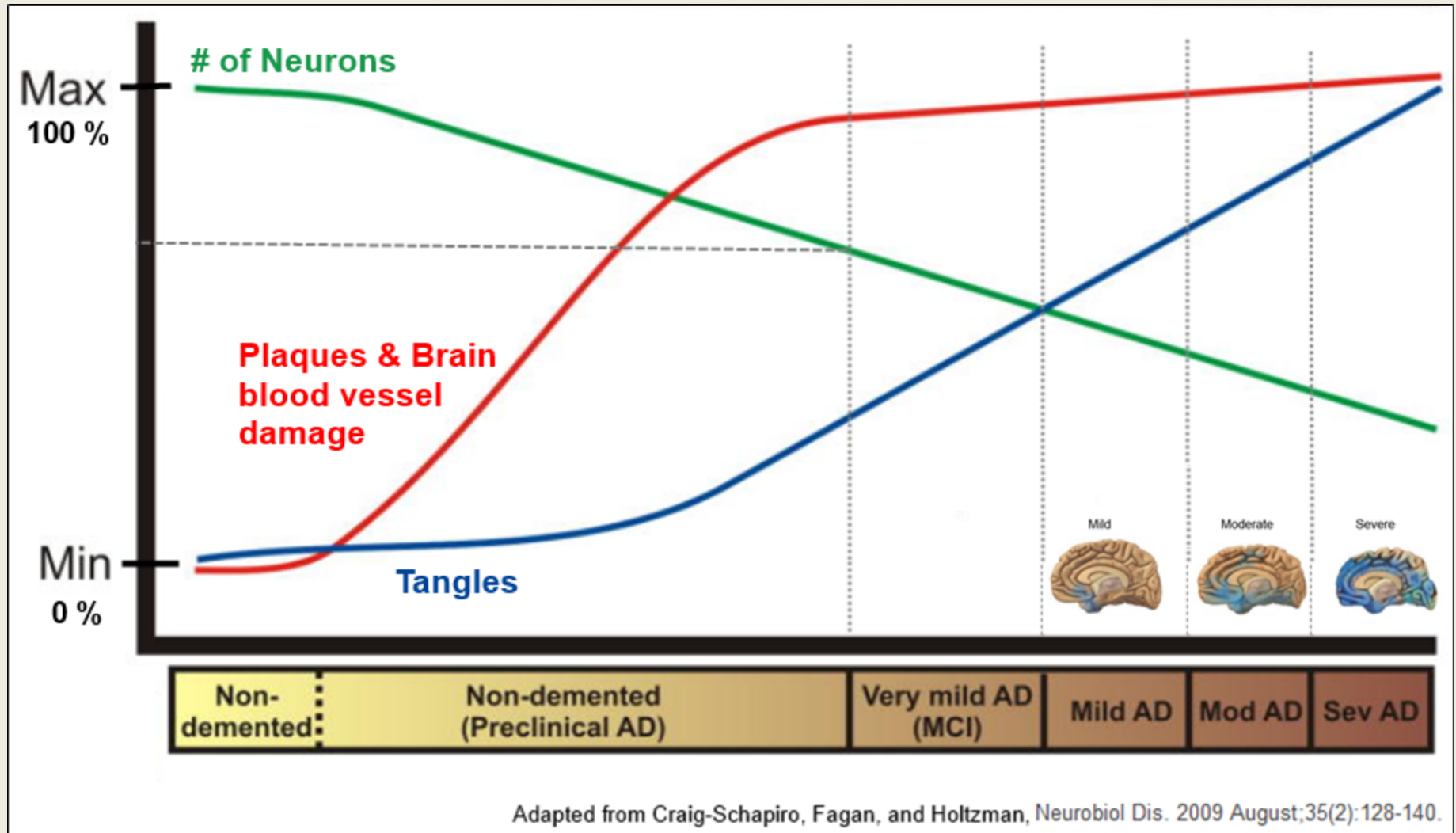
Normal

B

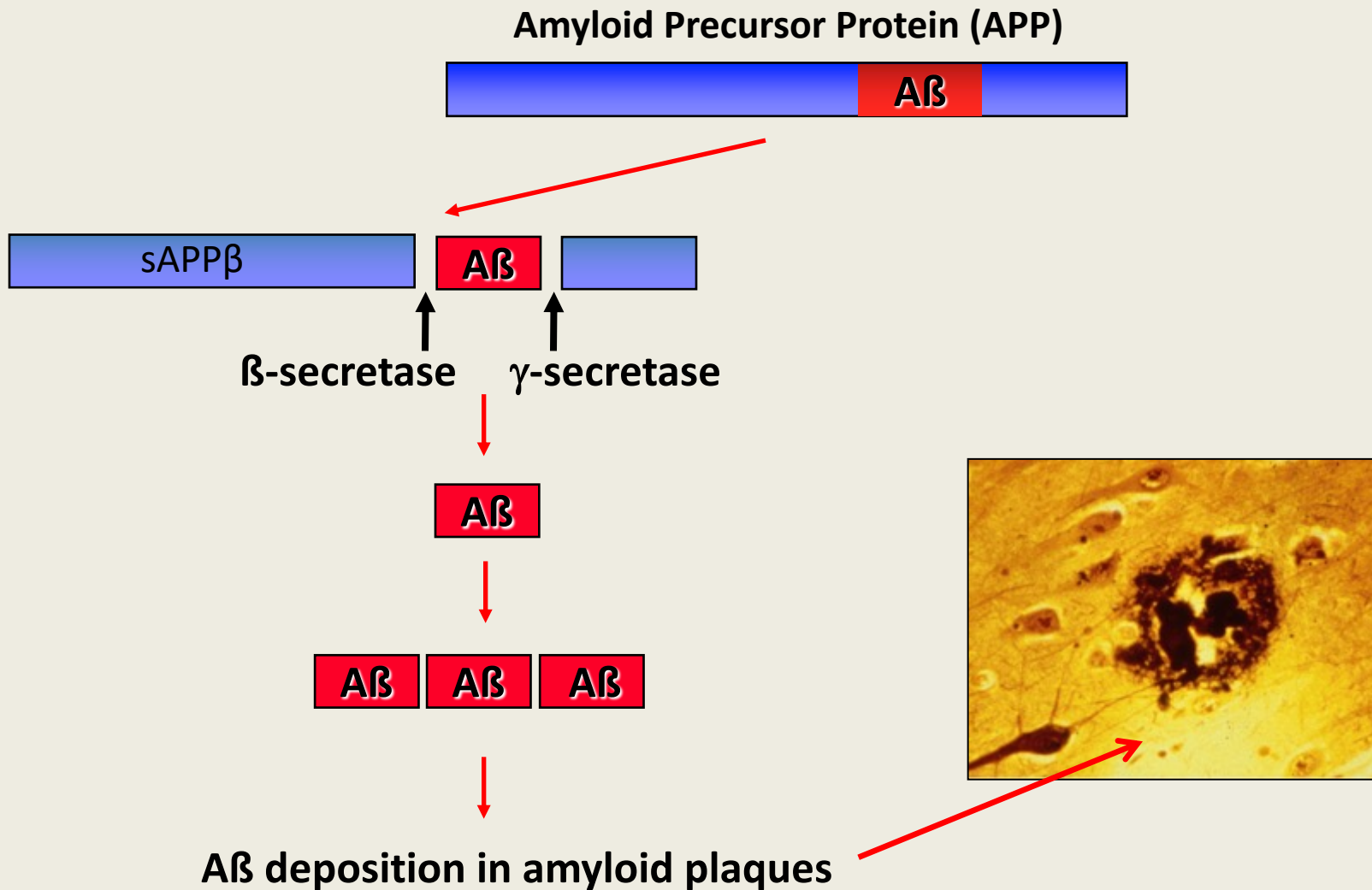


Amyloid-Positive

Correlating Pathology with Dementia



The Amyloid Cascade in Alzheimer's



Environmental Risk Factors for Alzheimer's Disease

- Increased Risk
 - High blood pressure, stroke, and high cholesterol
 - Smoking
 - Diabetes
 - Low educational attainment
 - High BMI in mid-life
- Decreased Risk
 - Exercise
 - Caffeine
 - Cognitive activity

HOW IS ENVIRONMENT IMPORTANT?



Caffeine Consumption of AD Patients Is Half That of Normal Subjects



Previous Stress Is Related to Poorer Cognition/Memory, Especially in African Americans

- Each stressful event aged the brain 1.5 years in non-Hispanic whites and 4 years in African Americans

University of Wisconsin

Mediterranean or MIND Diets May Reduce Alzheimer's Risk

- Reduced risk of dementia by 1/3
- Diet rich in plants, olive oil, fish, etc.

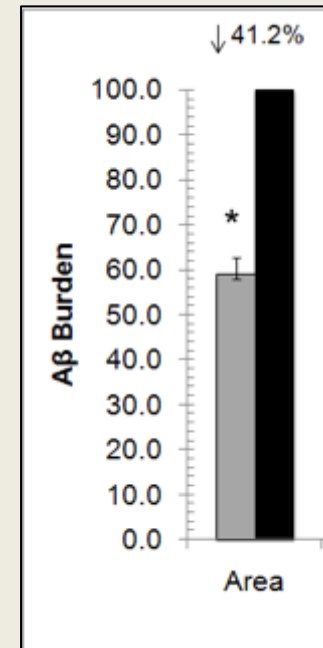
UCSF

- Alzheimer's Association funded **POINTER** trial, which includes aerobic workouts plus the MIND diet

Why are People with Rheumatoid Arthritis Protected Against Alzheimer's Disease?



GM-CSF Reduces A β Deposition *In Vivo*



GM-CSF Clinical Trials Summary

Current 3-Week Trial:

- 5 GM-CSF injections/week for 3 weeks; 45- and 90-day follow-ups

Results to Date:

- 30 subjects completed treatment phase plus both follow-ups
- No serious adverse events; **no ARIAs**
- Possible improvement in MMSE at end of treatment

Future 6-Month Trial:

- 5 GM-CSF injections/week for 24 weeks (partially funded by Alz Assn)

Websites:

- [ClinicalTrials.gov](https://clinicaltrials.gov)
- trialmatch.alz.org

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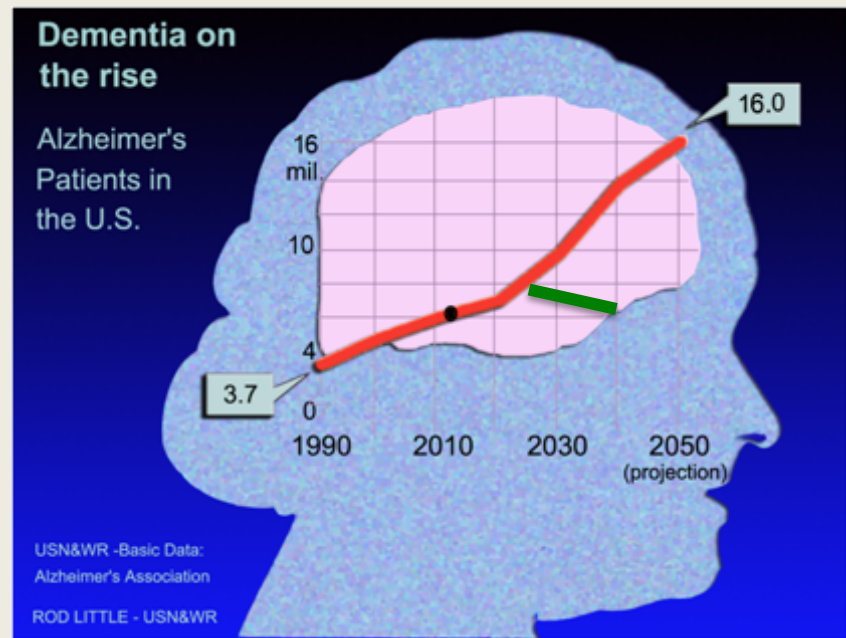
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Global Down Syndrome Foundation
UC Denver COM; Dept. Neurology; UC Health
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Colorado University Results CURE



Anschutz Medical Campus



Hope!