



# Brain Health - ALZHEIMER'S DISEASE: WHAT IT IS, AND WHAT CAN BE DONE

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# WHAT IS ALZHEIMER'S DISEASE?

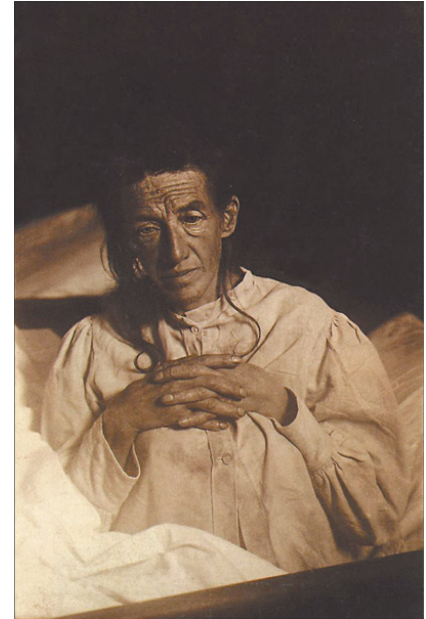
- What do you think Alzheimer's disease is?

# WHAT IS ALZHEIMER'S DISEASE?

- Alzheimer's is a type of dementia that causes problems with memory, thinking and behavior
- Alzheimer's is the most common form of dementia
- Alzheimer's is not a normal part of aging
- Alzheimer's worsens over time
- Alzheimer's has no current cure, but symptoms are treatable

# HISTORY OF ALZHEIMER'S DISEASE

- Alzheimer interviewed a patient, “Auguste D.,” a 51-year old woman in 1901, a German psychiatrist named Alois Alzheimer.
- She died in 1906
- Post-death analysis by Dr. Alzheimer of her brain and body led to the first recognized case of “Alzheimer’s” disease
  - Shrinking of the cortex
  - Microscopic analysis found fatty deposits in and around the brain cells and dead/dying brain cells
  - In 1910 Emil Kraepelin suggested the disease be called Alzheimer’s disease



# 2011 UPDATE OF DIAGNOSTIC CRITERIA

- Alzheimer's disease progresses on a spectrum with three stages
  - Early, preclinical stage with no symptoms;
  - A middle stage of mild cognitive impairment; and
  - A final stage marked by symptoms of dementia
- Memory loss is not necessarily the 1<sup>st</sup>/only symptom
- Better understanding of the differences/relationships between Alzheimer's disease and other non-AD dementias
- The potential of biomarkers (an indicator of potential brain disease) to diagnose
  - Still experimental at this time

# WHAT IS DEMENTIA?

- Dementia is a general term for a decline in mental ability severe enough to interfere with daily life.
- Dementia is not a specific disease. It's an overall term that describes a wide range of symptoms
- Symptoms of dementia can vary greatly
  - At least two of the following core mental functions must be significantly impaired to be considered dementia:
    - Memory\*
    - Communication and language
    - Ability to focus and pay attention
    - Reasoning and judgment
    - Visual perception

# OTHER TYPES OF DEMENTIA

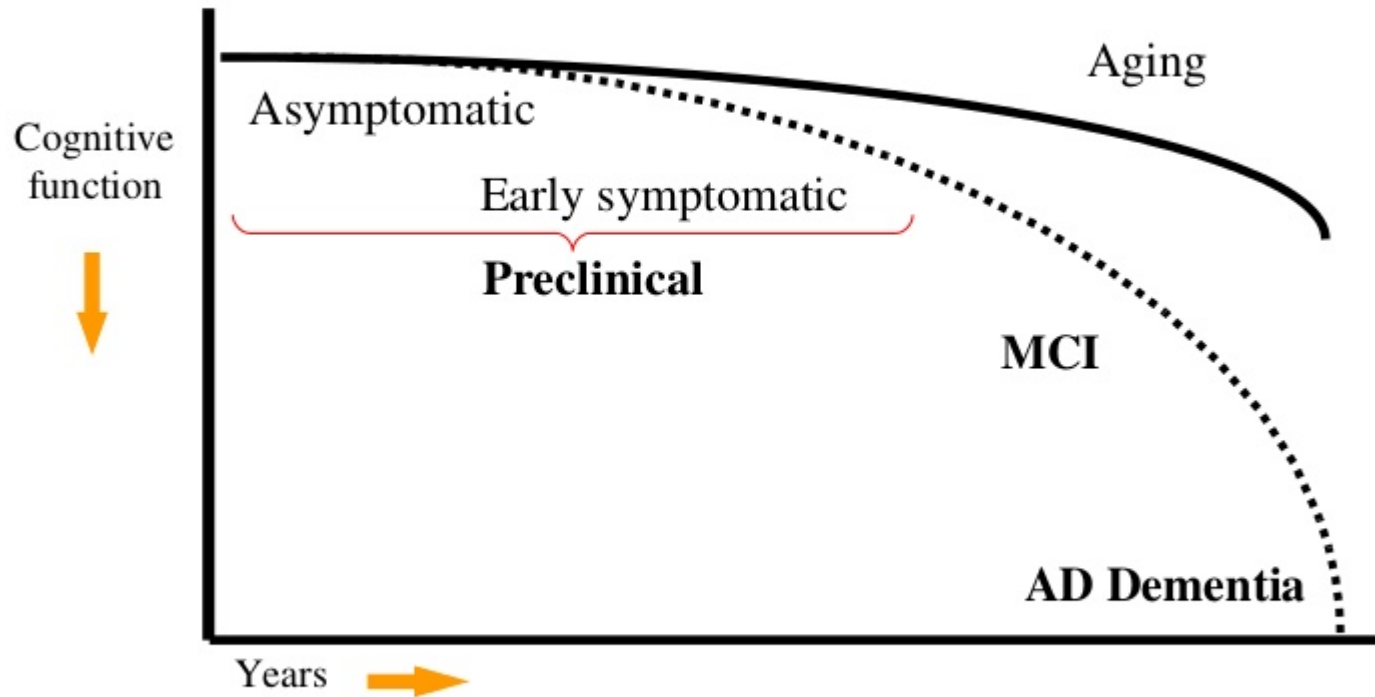
- **Frontotemporal dementia**
  - Group of that primarily affect the frontal and temporal lobes of the brain — the areas generally associated with personality, behavior and language
- **Dementia with Lewy Bodies**
  - Type of progressive dementia that leads to a decline in thinking, reasoning and independent function
- **Mixed dementia**
  - More common than originally thought: up to 50% of cases with Alzheimer's disease are actually mixed dementia

# IS MILD COGNITIVE IMPAIRMENT DEMENTIA?

- “A decline in cognitive function that is not normal aging but is also not severe enough to impair daily living and warrant a diagnosis of dementia” (Mast & Yochim, 2018)
- 15-20% of persons over age 65 have MCI
- Those with MCI are more likely to develop AD, but not always
- Amnestic MCI: start to forget important information that would be remembered easily before
- Nonamnestic MCI: impairment in making sound decisions, visual perception



# The continuum of Alzheimer's disease



Sperling et al *Alzheimer & Dementia* 2011  
NIA-AA Preclinical Workgroup

# ALZHEIMER'S ASSOCIATION'S TEN WARNING SIGNS OF ALZHEIMER'S DISEASE

- Memory loss that disrupts daily life
  - *Problem:* Forgetting recently learned information
  - *Normal:* Occasionally forgetting names or appointments, but remembering them later
- Challenges in planning or solving problems
  - *Problem:* Trouble following a familiar recipe, taking much longer to complete familiar tasks
  - *Normal:* Making occasional errors when balancing a checkbook
- Difficulty completing familiar tasks
  - *Problem:* Trouble driving to a familiar location, remembering the rules of a favorite board game
  - *Normal:* Occasionally needing help with settings on an appliance

# TEN WARNING SIGNS CONTINUED

- Confusion with time and place
  - *Problem:* Losing track of dates, forgetting where you are or how you got there, not understanding something unless it is happening immediately
  - *Normal:* Forgetting the day of the week but remembering it later
- Trouble understanding visual images or spatial relationships
  - *Problem:* Difficulty reading, pass a mirror and think someone else is in the room
  - *Normal:* Vision changes related to cataracts
- New problems with words when speaking or writing
  - *Problem:* Trouble following or joining conversations, have problems finding the right word to name something
  - *Normal:* Sometimes having trouble finding the right word

# TEN WARNING SIGNS CONTINUED

- Misplacing things and losing the ability to retrace steps
  - *Problem:* Placing things in bizarre places, lose things and cannot retrace the steps to find them, accuse others of stealing
  - *Normal:* Misplacing things from time to time
- Decreased or poor judgment
  - *Problem:* Poor judgment dealing with money, falling for telemarket scams, poor grooming
  - *Normal:* Making a bad decision once in a while
- Withdrawal from work or social activities
  - *Problem:* May withdraw from hobbies or social activities
  - *Normal:* Sometimes feeling weary of work, family, or social obligations

# TEN WARNING SIGNS CONTINUED

- Changes in mood or personality
  - *Problem:* Confusion, suspicion, fear, anxious; easily upset when outside of “comfort” zone
  - *Normal:* Developing very specific ways of doing things and become irritable when they are disrupted
- The push towards early detection

# WHY IS EARLY DIAGNOSIS POTENTIALLY IMPORTANT?

- Access to treatment options
- Opportunity to participate in clinical trials
- Engage in lifestyle changes
- Emotional and social benefits
- Time to plan
- May save costs to you and society

# VIDEO OF ALZHEIMER'S DISEASE

- Courtesy of the Alzheimer's Disease Education and Referral (ADEAR), National Institutes of Health (<https://www.youtube.com/watch?v=NjgBnx1jVIU>)

# DIAGNOSIS OF ALZHEIMER'S DISEASE

- No specific test
- Done to distinguish between other causes of dementia
- Find the right doctor
  - Consult the Alzheimer's Association
  - Referrals: neurologist, psychiatrist, neuropsychologist, geriatrician
- Questions to be prepared for
  - “What kind of symptoms have you noticed?”
  - “When did they begin?”
  - “How often do they happen?”
  - “Have they gotten worse?”
- Dementia screening tests
  - The problem with internet/home screening tests



# DIAGNOSIS OF ALZHEIMER'S DISEASE

- Physical exam and diagnostic tests
  - Diet, medication review, blood pressure, listen to heart and lungs
- Lab tests
  - Blood tests are done to rule out other problems, such as vitamin deficiencies or thyroid disorders
- Neuropsychological testing
  - Can take several hours, but can help detect Alzheimer's disease or similar disorders at earlier stages
  - Assessment of thinking and memory skills (e.g., MMSE, Mini-Cog are a few)
  - Computer-based tests are now validated as well: FDA approved
- Mood assessment
- Brain
  - Doctor can pinpoint visual abnormalities, such as clots, bleeding, or tumors, that can be causing dementia symptoms
  - MRI: uses radio waves and strong magnetic field to create detailed image of your brain
  - CT: X-ray images of your brain that create photographic "slices" of your brain
  - PET: You are injected with low level radioactive material, which binds to chemicals that go to the brain. This helps to show what parts of the brain are less active than others

# IMPORTANT TIPS TO KNOW ABOUT DIAGNOSIS

- Keeping a journal for your loved one
  - Changes that have occurred, for example, those documented in the journal
  - Signs of the disease beyond memory loss, such as behavior and mood changes
  - A list of all the medications and/or herbal remedies the person or you are taking
- Clinical trials
  - Alzheimer's Association's Trial Match:  
[https://www.alz.org/alzheimers-dementia/research\\_progress/clinical-trials/about-clinical-trials](https://www.alz.org/alzheimers-dementia/research_progress/clinical-trials/about-clinical-trials)
    - Email TrialMatch@alz.org or call 800.272.3900 (press 1 for clinical trials)

# RISK FACTORS

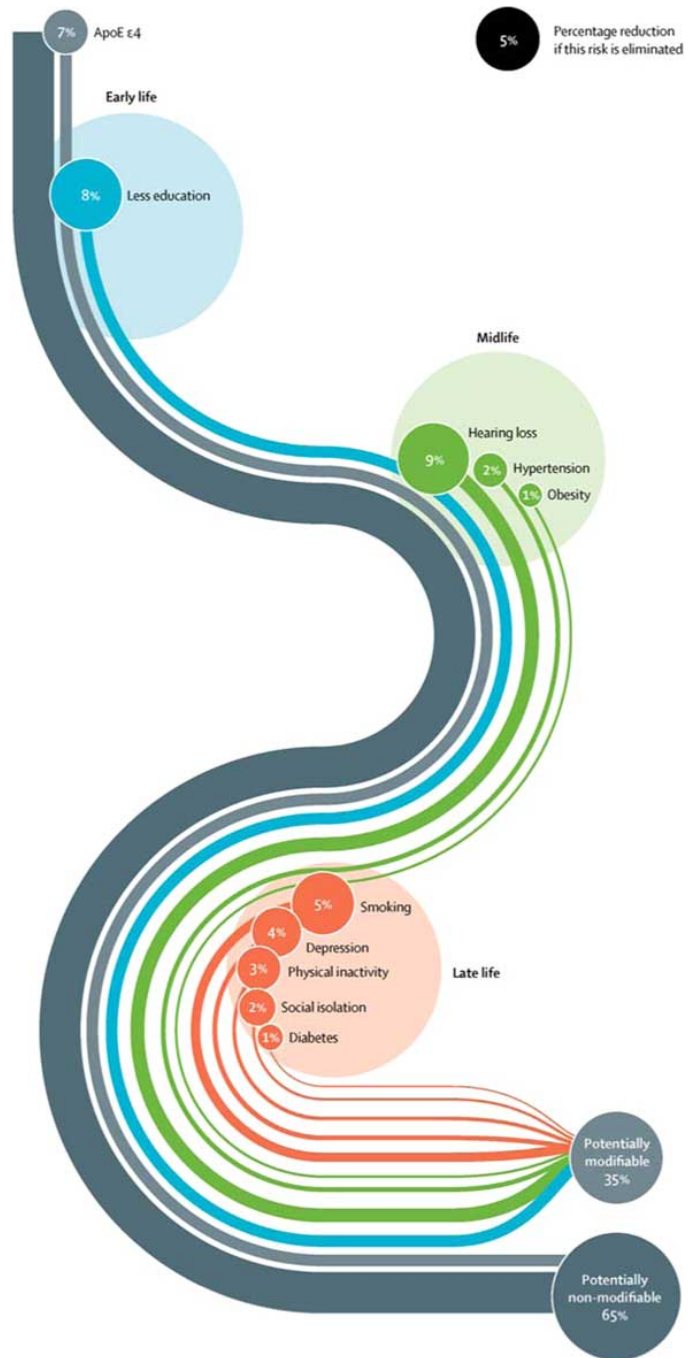
- Head injury
- Advancing age
  - Likelihood doubles every 5 years after the age of 65; approximately 1/3 of individuals 85+ are at risk of having AD
- Family history
  - Those who have a parent, sibling, child with Alzheimer's are more likely to get Alzheimer's
- Genetics
  - Risk genes
    - APOE-e4 (the blueprint for proteins that carry cholesterol in the blood stream)
  - Deterministic genes
    - Amyloid precursor protein (APP), presenilin-1 (PS-1) and presenilin-2 (PS-2)
    - Familial AD: only in 5% of cases
  - Others

# RISK FACTORS

- Gender
  - Women are more likely to get AD than men, since women live longer
- Mild cognitive impairment
- Lifestyle
  - High blood pressure
  - High cholesterol
  - Poorly controlled diabetes
- Race/ethnicity
- Education
  - The more you use your brain, the more synapses you create?
  - Perhaps those with higher education are more likely to “hide” symptomatology
  - Education and its correlation with socioeconomic status

# UPDATE: 2015 ALZHEIMER'S ASSOCIATION FACTS AND FIGURES

- In 2015, the Alzheimer's Association evaluated the state of the evidence on the effects of modifiable risk factors.
- Conclusion: There is stronger evidence that “regular physical activity and management of cardiovascular risk factors (especially diabetes, obesity, smoking and hypertension) reduce the risk of cognitive decline and may reduce the risk of dementia.”
- A healthy diet and lifelong learning/cognitive training may also reduce the risk of cognitive decline.
- These findings were largely confirmed by the Institute of Medicine in 2015.
  - Easy to read PowerPoint and Handouts: see <https://www.nia.nih.gov/health/brain-health-resource>



# TREATMENTS

- There is currently no cure for Alzheimer's disease
- The drugs below may slow symptoms for some period of time for those who take them
- Acetylcholinesterase inhibitors (ACEs)
  - Donepezil (Aricept); Galantamine (Rimanyl/Razadyne); Rivastigmine (Exelon)
  - Enhance levels of neurotransmitters in the brain
  - Don't work for everyone; up to half of the people who take these drugs show no improvement
  - There are side effects, including diarrhea, vomiting, and nausea
- Memantine (Nemenda)
  - First drug approved to treat those in moderate to severe stages
  - "Memantine protects brain cells from damage caused by the chemical messenger glutamate."
  - Sometimes used in combination with ACEs
  - Most common side effect is dizziness, although it may also increase agitation and delusions in some people

# TREATMENTS FOR BEHAVIORAL SYMPTOMS

- Non-pharmacological approaches are recommended
  - Monitor personal comfort.
  - Avoid being confrontational or arguing about facts.
  - Redirect the person's attention.
  - Allow adequate rest between stimulating events.
  - Provide a security object.
  - Acknowledge requests, and respond to them.
  - Look for reasons behind each behavior.
  - Explore various solutions.
  - Don't take the behavior personally



# TREATMENTS FOR BEHAVIORAL SYMPTOMS

- Antipsychotic drugs are recommended only in the following situations:
  - Behavioral symptoms are due to mania or psychosis
  - The symptoms present a danger to the person or others
  - The person is experiencing inconsolable or persistent distress, a significant decline in function or substantial difficulty receiving needed care

# TREATMENTS OF THE FUTURE?

- Drugs that are in pre-testing phases are at least 4 years away from being available on the market, and must show safety for humans
- See <http://www.clinicaltrials.gov/ct2/results?term=alzheimer> for list of National Institute of Health clinical trials

# MYTHS OF ALZHEIMER'S DISEASE<sup>3</sup>

- “Memory loss is a natural part of aging”
- “Alzheimer’s disease is not fatal”
- “Only older people can get AD”
- “Drinking out of aluminum cans or cooking in aluminum pots and pans can lead to Alzheimer’s disease”
- “Aspartame causes memory loss”
- “Flu shots increase the risk of Alzheimer’s disease”
- “Silver dental fillings increase the risk of Alzheimer’s disease”
- “There are treatments available to stop the progression of Alzheimer’s disease”

# HANDOUT REVIEW

- Bubble sheet
- Dementia Educational Experience Roadshow (DEER) Evaluation Form
  - Evaluation of this presentation, please complete for us!
- University of Minnesota Coaching Acknowledgment
- CARES© sign-up sheet

# CARING FOR A PERSON WITH MEMORY LOSS CONFERENCE

- Free annual community education conference held at the University of Minnesota
  - Held Saturday after Memorial Day
  - Joseph E. Gaugler, PhD, organizer (612-626-2485; [gaug0015@umn.edu](mailto:gaug0015@umn.edu))
- Approximately 200-330 attendees
- Free food!
- Hands-on, relevant talks on issues ranging from stress reduction strategies to financial planning
- Free CEUs
- Virtual library of presentations, resources, and other info
- See <http://z.umn.edu/memoryloss> for more information
- If you are interested in hearing more, please check “The Caring for a Person with Memory Loss Conference” and complete your contact information on the form

# FREE COACHING

- An opportunity to received additional education, support, and skills related to memory loss care
  - Example topics: communication issues, behavior and personality changes, self-care
- For families or professionals
- Confidential calls from 8AM to 8PM M-F
- Coaches
  - Robyn Birkeland, PhD
  - Tamara Statz, MA, LMFT
- If interested, please complete and sign the Coaching Acknowledgment Form handout

# CARES® ON-LINE EDUCATIONAL MODULES

- We are offering the award-winning, online education modules on dementia care developed by HealthCareInteractive® for free
- A value from \$200-\$600
- For professionals and families
- Please complete the CARES® information handout and we will connect you to this free training opportunity!

# QUESTIONS?

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