

A PUBLIC HEALTH APPROACH TO ALZHEIMER'S AND OTHER DEMENTIAS

ALZHEIMER'S & OTHER DEMENTIAS – THE BASICS







Emory Centers for Training and Technical Assistance



LEARNING OBJECTIVES

- Define cognitive health
- Define and differentiate between dementia and Alzheimer's
- List at least 5 early signs of Alzheimer's
- Describe the changes that occur during the course of Alzheimer's
- Describe the role of caregivers



DISCUSSION QUESTION I



What is cognitive health?



COGNITIVE HEALTH'

- Cognition: the ability to think, learn, and remember
- Cognitive health continuum: "optimal functioning" to severe disability





COGNITIVE AGING^{2,3,4}

- The brain changes as it ages
- Increase in wisdom and expertise
- Speed of processing, making decisions, remembering may slow
- Normal part of aging





MILD COGNITIVE IMPAIRMENT (MCI)5.6

- Difficulty with cognitive processes
- Not severe enough to interfere with daily life
- Increased risk of Alzheimer's or dementia
- May be caused by external factors (vitamin B12 deficiency, depression)





COGNITIVE IMPAIRMENT

- Difficulty with cognitive processes that affect everyday life
- Spans wide range of functioning
- Can occur as a result of Alzheimer's, dementia, stroke, traumatic brain injury



DEMENTIA⁸

- Decline in mental ability severe enough to interfere with daily life
- Not a specific disease
- Not normal aging
- Caused by damage to brain cells from disease or trauma
- Many dementias are progressive



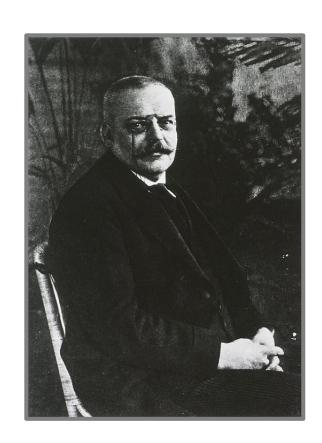
ALZHEIMER'S DISEASE

ALZHEIMER'S AND OTHER DEMENTIAS – THE BASICS



ALZHEIMER'S HISTORY

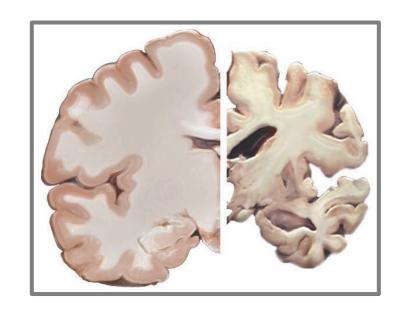
- Identified in 1906 by Dr. Alois Alzheimer
- Examined brain of woman who died after living with profound memory loss
- Found abnormal clumps (plaques) and tangled fibers (tangles) in the brain





ALZHEIMER'S OVERVIEW10

- Most common cause of dementia
- 60% 80% of cases
- Progressive symptoms gradually worsen over number of years





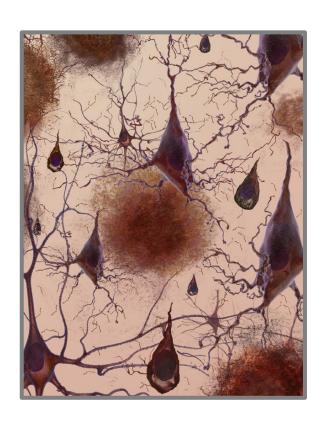
ALZHEIMER'S CAUSES"

- Precise changes in brain largely unknown
- Probably develops as a result of complex interactions among:
 - Age
 - Genetics
 - Environment
 - Lifestyle
 - Coexisting medical conditions



ALZHEIMER'S PHYSICAL BRAIN CHANGES¹²

- Brain shrinks dramatically
 - Nerve cell death
 - Tissue loss
- Plaques: abnormal clusters of protein fragments
- Tangles: twisted strands of another protein





DISCUSSION QUESTION 2



What are the characteristics of Alzheimer's?



10 EARLY SIGNS OF ALZHEIMER'S

- I. Memory loss that disrupts daily life
- Challenges in planning or solving problems
- 3. Difficulty completing familiar tasks
- 4. Confusion with time or place
- Trouble understanding visual images and spatial relationships





I0 EARLY SIGNS OF ALZHEIMER'S (CONTINUED)¹⁴

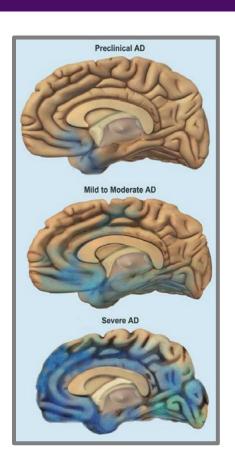
- 6. New problems with words in speaking or writing
- 7. Misplacing things and losing the ability to retrace steps
- 8. Decreased or poor judgment
- Withdrawal from work or social activities
- 10. Changes in mood and personality





STAGES OF ALZHEIMER'S

- Average lifespan 4-8 years after diagnosis; as long as 20 years
- Progresses slowly in 3 stages:
 - Mild (early-stage)
 - Moderate (middle-stage)
 - Severe (late-stage)





MILD ALZHEIMER'S (EARLY-STAGE)16

- Able to function independently
- Common difficulties:
 - Forgetting familiar words
 - Losing everyday objects
 - Trouble remembering names
 - Greater difficulty performing tasks
 - Forgetting material just read
 - Increasing trouble with planning, organizing



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MODERATE ALZHEIMER'S (MIDDLE-STAGE) 17

- Requires increasing care
- Symptoms include:
 - Forgetfulness of personal history
 - Confusion about place or time
 - Need for help with bathing, toileting, dressing
 - Changes in sleep patterns
 - Increased risk of wandering
 - Personality and behavioral changes



SEVERE ALZHEIMER'S (LATE-STAGE)18

- Typically longest stage
- Requires full-time care
- Loss of awareness of recent experiences and surroundings
- Changes in physical abilities (walking, sitting, swallowing)
- Vulnerable to infections





RISK FACTORS

ALZHEIMER'S AND OTHER DEMENTIAS – THE BASICS



RISK FACTORS: AGE 19,20,21

- #I risk factor is advancing age
- Risk doubles every 5 years after age 65
- I in 3 people age ≥ 85





YOUNGER-ONSET ALZHEIMER'S DISEASE²²

- Affects people younger than 65
- Many are in their 40s and 50s
- 200,000 have younger onset (in U.S.)
- Up to 5% of population with Alzheimer's





RISK FACTORS: FAMILY HISTORY, EDUCATION²³

- Family history
- Environmental factors
- Years of formal education





RISK FACTORS: RACE & ETHNICITY²⁴

- African-Americans: 2 times greater risk
- Hispanics: 1.5 times greater risk
- Cardiovascular risk factors more common
- Lower levels of education, socioeconomic status



RISK FACTORS: WOMEN^{25,26}

- 2/3 of affected population
- 16% of women age ≥ 71 (11% of men)
- After age 65, have more than 1 in 5 chance (1 in 11 for men)





MODIFIABLE RISK FACTORS: HEAD TRAUMA²⁷

- Moderate and severe traumatic brain injury
 - Moderate injury: 2.3 times greater risk
 - Severe injury: 4.5 times greater risk
- Risk remains for years after injury





MODIFIABLE RISK FACTORS: LIFESTYLE^{28,29}

- Increases risk
 - Current smoking
 - Midlife obesity
- Decreases risk
 - Physical activity
 - Heart-healthy diets: DASH, Mediterranean diet
 - Mental and social activity





MODIFIABLE RISK FACTORS: CARDIOVASCULAR^{30,31}

- Heart-head connection
- Cardiovascular risk factors:
 - High blood pressure in midlife
 - Heart disease
 - Stroke
 - Diabetes





TREATMENT & MANAGEMENT

ALZHEIMER'S AND OTHER DEMENTIAS – THE BASICS



DIAGNOSING ALZHEIMER'S DEMENTIA³²

- No single test
- Medical evaluation
 - Medical history
 - Mental status testing
 - Information from family and friends
 - Physical and neurological exams
 - Rule out other causes





TREATING & MANAGING ALZHEIMER'S"

- No cure
- Drug and non-drug treatments
- Goals of existing treatment
 - Maintain quality of life
 - Maximize functioning in daily activities
 - Foster safe environment
 - Promote social engagement



ALZHEIMER'S: CO-MORBIDITIES^{34,35}

- Additional chronic conditions (e.g., heart disease, diabetes, depression)
- Difficult to manage
- Higher rates of hospitalizations and costs
- Preventable hospitalizations





ALZHEIMER'S: UNIQUE ASPECTS³⁶

- Financial hardship
 - May lose income and savings
 - Increased reliance on public programs
- Stigma
- Vulnerability to abuse
- Caregiver burden





ALZHEIMER'S: CAREGIVERS³⁷

- Types of care activities include daily living activities, medication management, financial management
- Level of care needed increases and often results in complete dependence
- Caregiving has significant physical and emotional stress



ROLE OF PUBLIC HEALTH

- 4 key ways public health can have an impact:
 - Surveillance/monitoring
 - Risk reduction/primary prevention
 - Early detection and diagnosis
 - Safety and quality of care





DEMENTIA CAPABLE SYSTEMS AND DEMENTIA FRIENDLY COMMUNITIES

- Dementia capable systems
 - Support services
 - Workforce training
- Dementia friendly communities



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FOR MORE INFORMATION

For more information, please visit:

Alzheimer's Association: http://www.alz.org

CDC's Alzheimer's Disease and Healthy Aging Program: https://www.cdc.gov/aging/





COMPETENCIES

Academy for Gerontology in Higher Education (AGHE):

- I.2.1 Distinguish normal biological aging changes from pathology including genetic factors.
- I.2.4 Recognize common late-life syndromes and diseases and their related bio-psycho-social risk and protective factors.

Council on Education for Public Health (CEPH) Foundational Competencies:

- 2. Locate, use, evaluate, and synthesize public health information (bachelors level)
- 4. Interpret results of data analysis for public health research, policy, or practice (masters level)

Council on Linkages Between Academia and Public Health Practice:

IA1. Describes factors affecting the health of a community (e.g., equity, income, education, environment)

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