Brain Health & Alzheimer's Disease

AMWA
American Medical Women's Association

Alzheimer's Disease

OVERVIEW

Alzheimer's disease (AD) is a neurodegenerative disease of uncertain cause and complex pathology.

- Most common form of dementia, accounting for 60-80% of dementia cases
- Sixth most common cause of death among those over 65 years in the US
- There is no cure; only supportive treatment.

Alzheimer's Stages

EARLY

Pre-clinical
Asymptomatic

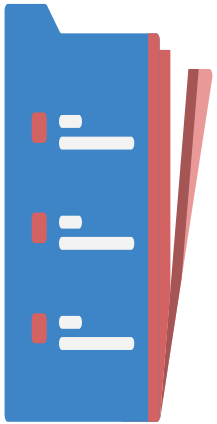
MIDDLE

Mild Cognitive
Impairment (MCI)

LATE

Alzheimer's
Dementia

Phases of Alzheimer's Disease



Early (Preclinical)

- **Asymptomatic**: No noticeable cognitive decline
- **Pathology**: Amyloid plaques, tau tangles detectable via biomarkers

Mild Cognitive Impairment (MCI)

- **Measurable cognitive decline** (e.g., memory)
- **Minimal impact on functional activities of daily living**

Dementia (Assessed on a progressing continuum)

- **Significant cognitive impairment** affecting ≥2 domains (memory, language, reasoning, etc.)
- **Functional decline**: Interference with daily activities (e.g., managing finances, medications, self-care)

Clinical Assessment

When to Suspect AD

- Insidious onset, progressive cognitive decline adversely affecting daily activities (ie, difficulty with finances, poor hygiene, and social withdrawal).

- Memory loss and/or deficits in other cognitive domains.

Essential Components of Evaluation

- **Conduct cognitive exam**
  Include caregiver/family member to gather clinical history and timeline of changes with memory and other cognitive functioning

- Rule out other contributing factors to memory changes:
  - Medication side effects
  - Depression / Anxiety
  - Metabolic disorders / Nutrient deficiencies (e.g., thyroid disease, Vitamin B12)

Clinical Assessment Overview

History & Symptoms

- **Cognitive decline**: Memory loss, word-finding difficulty, impaired judgment
- **Functional decline**: Difficulty with activities of daily living (ADL, e.g., managing meds, hygiene)
- **Psychiatric/Behavioral changes**: Depression, apathy, agitation
- **Observations** from caregiver/family are critical

Clinical Assessment-Step 1

Cognitive Testing

Screening Tools: Establish baseline and monitor progression

- MMSE (Mini-Mental State Examination)
- MoCA (Montreal Cognitive Assessment)

Neurological & Physical Exam

- Evaluate for **focal deficits** (may suggest alternative diagnoses)
- Gait, motor, reflexes to rule out other conditions (e.g., Parkinsonism, stroke)

Clinical Assessment-Step 2

Laboratory Tests

- Rule out **reversible causes** of dementia:
  - TSH (hypothyroidism)
  - B12, folate
  - CMP (electrolyte abnormalities, liver/kidney function)
  - RPR, HIV if risk factors present

Limitations of Mental Status Tools

- Designed for general population, for example, adults 65–80 years, with 12–14 years of education – and tested in English
- **Results are impacted and vary by**:
  - **Age** (older age → lower scores)
  - **Education** (higher education → better scores)
  - **Ethnicity** (non-Hispanic White patients tend to perform better)
- Few tools adjust for age, ethnicity or education
- **Language matters**:
  Tests given in a non-native language can undermine accuracy
- Interpret results with awareness of sociodemographic and linguistic context.

Clinical Assessment - Step 3

Neuroimaging

Functional imaging supports accurate diagnosis and guides treatment decisions, especially in complex cases

- **MRI - preferred imaging test**
  Detects structural abnormalities for cerebrovascular disease, tumors, microhemorrhages, atrophy
- **PET** to detect hypometabolism or **SPECT** to detect hypoperfusion
  Useful for differentiating Alzheimer's disease (AD) **vs.** Frontotemporal dementia (FTD) and ruling out non-neurodegenerative causes (e.g., depression)

- **Amyloid PET** - More definitive diagnosis & management of AD

AD Presentation & Prognosis

- Later onset (>80 years) typically results in slower decline.
- Early symptoms like psychosis or agitation are linked to greater progression.
- Average life expectancy post-diagnosis: 8–10 years, depending on severity at diagnosis.
- Common causes of death: complications from advanced debilitation (e.g., dehydration, malnutrition, infection)

Discuss Preventive Strategies

Up to 40% of dementia cases may be prevented or progression slowed with adjustments to lower risks:

Modifiable Risk Factors

- Midlife hypertension
- Obesity
- Hearing loss
- Depression
- Diabetes
- Physical inactivity
- Smoking
- Social isolation
- Excess alcohol use
- High LDL-cholesterol

Encourage Stimulating Activities

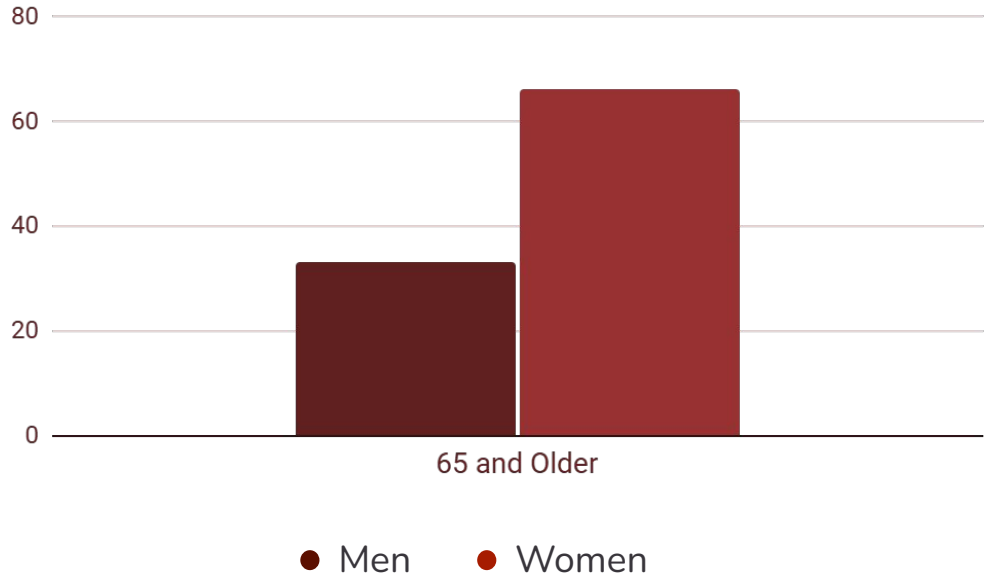
Cognitive Stimulation Therapy

Structured Physical Exercise

Music Therapy

Social Engagement through Group or Community Activities

Demographics by Gender



Overall ~1 in 9 people 65+ years have Alzheimer's disease, and almost two-thirds are women. (Source: Alzheimer's Association)

Alzheimer's and Women's Health

Women represent a higher proportion of individuals with AD at all stages.

Attributable to:

- Greater longevity (age)
- Sex-specific biological mechanisms
- Hormonal, genetic, and neuroinflammatory factors

Cardiovascular Disease & Brain Health

Vascular risk factors are linked to increased risk of cognitive decline and dementia, specifically Alzheimer disease (AD) and vascular dementia.

- Impacted by midlife risks (ie, hypertension and hyperlipidemia)
- Stroke nearly doubles the risk of dementia
  (each subsequent stroke exacerbates risk)
- Metabolic syndrome (mixed results)

Alzheimer's and Agitation

Agitation emerges and intensifies as Alzheimer's disease progresses

Goal: Identify triggers and provide understanding and empathy

Strategies for caregivers:

- Create a calm, safe environment
- Anticipate triggers to avoid episodes
- Use comforting communication strategies
- Offer a distraction to lessen impact of a triggering issue
- Check out Teepa Snow's videos (teepasnow.com)

Supportive Management

Maintaining Sleep Hygiene	✓
Predictable Schedule	✓
Manage Common Comorbidities	✓
Avoid Drugs with Strong Anticholinergic Effects	✓

Pharmacologic Interventions

Medications

While these medications may slow cognitive decline, there is no cure for AD.

- Cholinesterase Inhibitors (memory and learning)
  Reduces breakdown of acetylcholine
- N-methyl-D-aspartate (NMDA) Receptor Antagonists
  Regulates glutamate activity which impacts learning & memory
- Anti-Amyloid Monoclonal Antibodies
  Targets and reduces amyloid plaques

Advocacy and Action

What Can You Do?!

- Raise awareness of women's risks of AD
- Promote early detection and preventic
- Support education on agitation and caregiving
- Advocate for health equity and research funding

Common Myths About Alzheimer's – Debunked

View an Expert Discussion with Dr. Neelum Aggarwal and Dr. Monica Parker: https://youtu.be/3zPychO

Read Infographics and more resources: https://www.amwa-doc.org/dementia/

References & Resources

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Thanks!