Advancing the Science: Alzheimer’s and Dementia Research

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Objective
- Identify lifestyle and psychosocial factors that may affect the risk for the development of dementia.

Our Work is About People and Science

The Alzheimer's Association is a global organization working to advance care, support and research across the world.

Our Time Today…
- Landscape of Alzheimer’s and Dementia Science
- Highlights in Early Detection and Diagnosis
- Latest Advances in Clinical Trials, Treatments and Lifestyle Interventions
- How You Can Get Involved
Dementia is a Syndrome

- Dementia is a collection of symptoms related to cognitive decline
- Can include cognitive, behavioral and psychological symptoms
- Due to biological changes in the brain
- Alzheimer’s is most common cause
- Mixed dementia is very prevalent
- Some causes of cognitive decline are reversible and not truly dementia

Hallmarks of Alzheimer’s Disease

- Alzheimer’s Pathology
  - Cortical Atrophy
  - Alzheimer’s Pathology

Risk Factors

- Age
- APOE-e4 gene
- Family history
- Cardiovascular disease
- Social & cognitive stimulation
- Education
- Traumatic brain injury

Continuum of Cognitive Impairment

- Cognitively Unimpaired
- Mild Cognitive Impairment
- Mild Dementia
- Moderate Dementia
- Severe Dementia

MCI is a known risk factor for dementia

Everyone who experiences dementia passes through MCI

When you prevent new cases of MCI, you are preventing new cases of dementia
FDA Approved Therapies

**Cholinesterase Inhibitors**
- donepezil (Aricept) Approved For All Stages
- rivastigmine (Exelon) Mild - Moderate
- galantamine (Razadyne) Mild - Moderate

**Glutamate Moderators**
- memantine (Namenda) Moderate - Severe

**Combination**
- donepezil + memantine (Namzaric) Moderate - Severe

Impact of Alzheimer’s

IN 2019, Alzheimer’s and other dementias will cost the nation $290 BILLION
BY 2050, these costs could rise as high as $1.1 TRILLION

Available Therapies

Disease modification versus symptomatic benefit in the treatment of Alzheimer’s Disease

- Currently, there are no therapies that can cure Alzheimer’s
- Some drugs are available to temporarily improve symptoms

Impact of Alzheimer’s

Alzheimer’s and Related Dementia Research Funding at the NIH

2011: $143M
2012: $162M
2013: $173M
2014: $185M
2015: $195M
2016: $205M
2017: $214M
2018: $223M
2019: $232M
Exciting Time in Research

- Amyloid
- Tau
- Atrophy
Modernizing the Diagnosis

Cognitively Unimpaired

Biomarkers

20

years or more before symptoms appear, the brain changes of Alzheimer’s may begin.

Adapted from Reisa Sperling, BWH, MGH

History & Cognition

Cognitive function

Aging

MO

Dementia

Alzheimer’s Dementia

Cognitive Unimpaired

Progress Toward More Effective Treatment

A future Alzheimer’s therapy will likely include both lifestyle interventions and medicines.

Current Landscape of Clinical Trials for Alzheimer’s & Dementia

As of Apr. 2019

Drugs and Devices

Phase I

Phase II

Phase III

111

178

63

56 cognitive assessment, cognitive training, and computerized devices

Always a Need for Participants

Mechanism of Action of Agents in Phase 3

Cummings J. et al. A&D:TRCI, 2019
Focus on Risk Reduction

35%

Global Dementia May be Preventable

The SPRINT-MIND Study
First Study to Demonstrate Reduction of New Cases

- 9,000+ ppl; Standard vs. Intensive
- Intensive treatment
  - 19% reduced risk for MCI
  - 15% reduced combined risk for MCI and dementia
- Dramatic reduction of small vessel disease on MRI
- Immediate opportunity with life changing impact potential

FINGER Multidomain Intervention Trial

A 2 year multidomain intervention of diet, exercise, cognitive training, and vascular risk monitoring versus control to prevent cognitive decline in at-risk elderly people (FINGER): a randomised controlled trial

- 1260 participants, ages 60-77
- 1st large-scale study to report multidomain intervention can be beneficial

U.S. POINTER will evaluate two healthy lifestyle interventions
• Landmark study
• Uniquely positioned
  – Embedded in community systems
  – Ready for implementation if the intervention works
• Goal of 23% diversity
• Adults 60-79, with parent or sibling with memory loss or dementia
• Ancillary imaging study and sleep study funded by NIH
• Several additional ancillary studies applying to NIH

10 Ways to Love Your Brain

START NOW
It’s never too late or too early to incorporate healthy habits.
Where Can You Learn More? alz.org

How to Get Involved in Research

TrialMatch is a free clinical studies matching service designed to provide a customized list of potential study matches to each user.