



Alzheimer's Disease: An update

**Saint Elizabeth Seton
April 18, 2017**

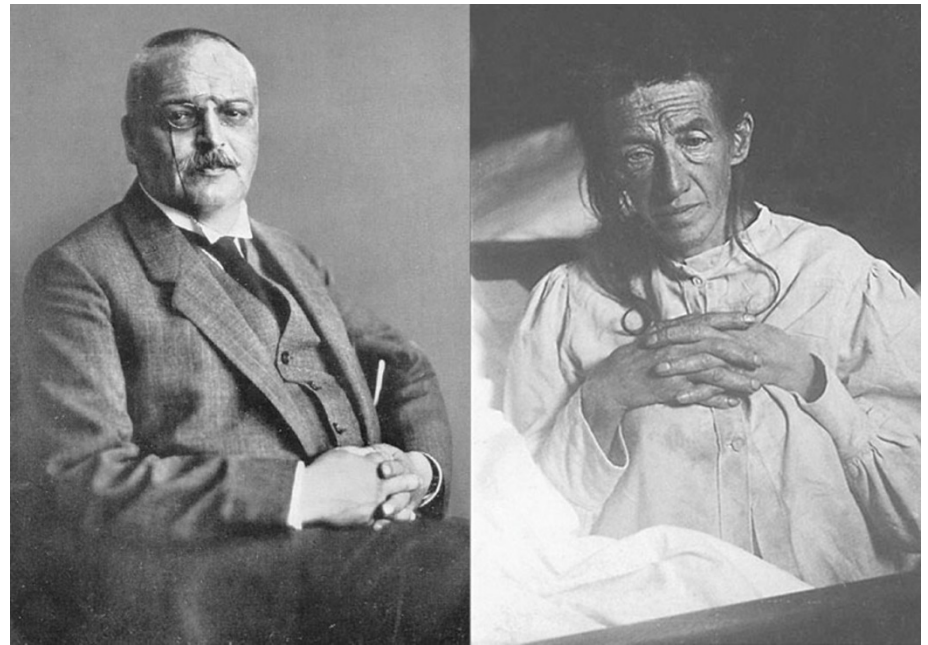
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Education & Outreach Manager**

Some history

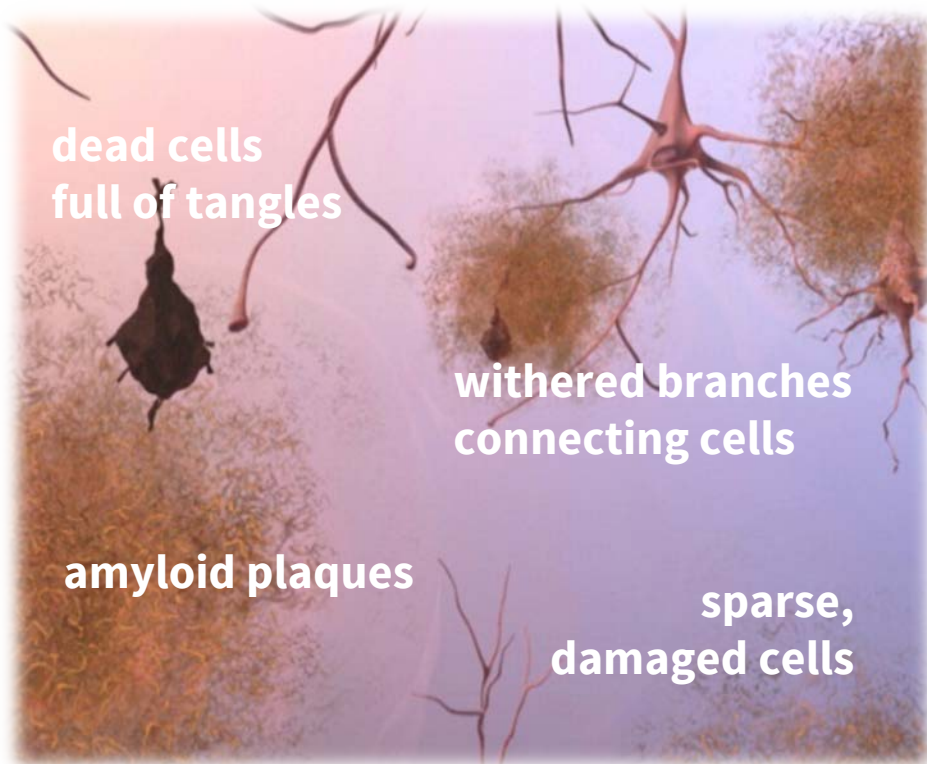
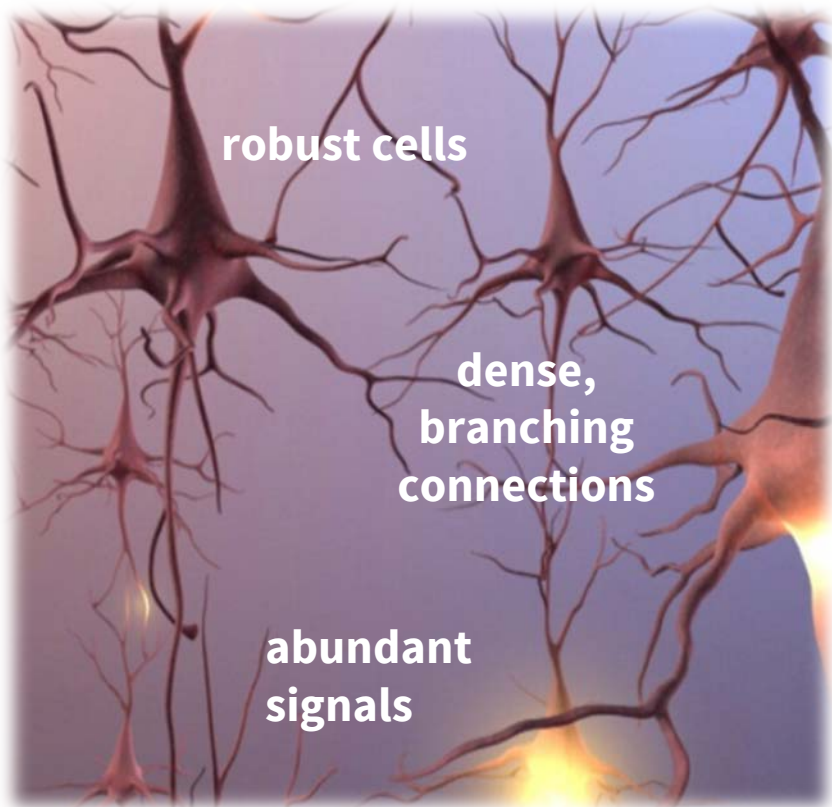
1901 Auguste D. (age 51) admitted to Frankfurt Psychiatric Hospital with memory loss, confusion, unpredictable behavior, and hallucinations

1906 Following her death, Dr. Alois Alzheimer performs brain autopsy, finds brain shrinkage, plaques, and tangles

Later that year, Dr. Alzheimer gives first lecture that describes a form of dementia that will later become known as Alzheimer's disease



Healthy neurons

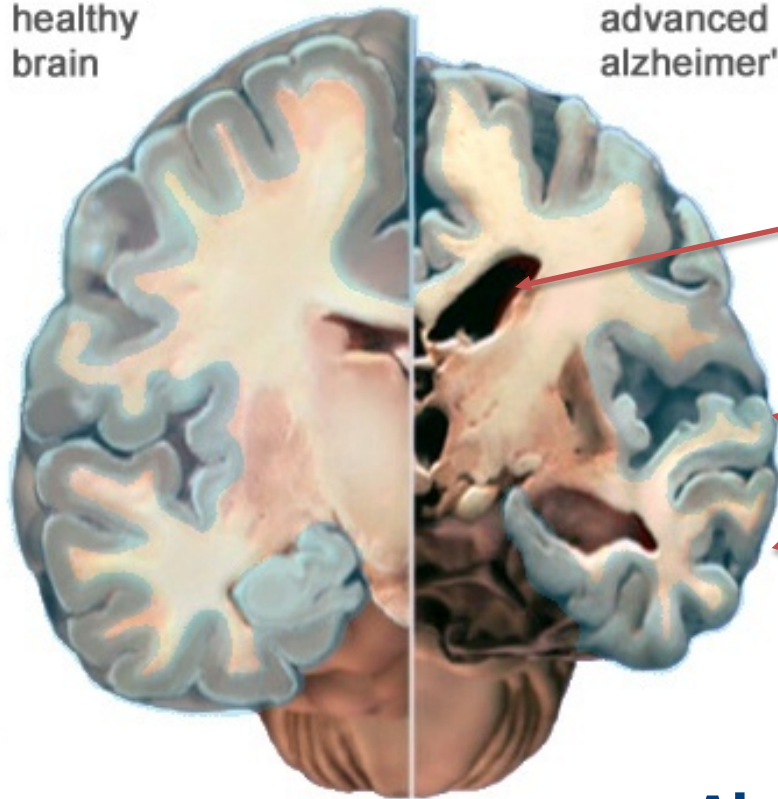


Alzheimer's neurons

How Alzheimer's changes the brain

healthy
brain

advanced
alzheimer's



Ventricles enlarge

**Cortex (blue) shrivels,
especially near the
hippocampus**

Alzheimer's brain: smaller overall

What we know about Alzheimer's today

- **Progressive, fatal disease of the brain** that damages and eventually destroys brain cells, leading to loss of memory and other cognitive skills, personality changes and problems performing daily activities
- Alzheimer's is the **most common type of dementia**, accounting for 70-80% of dementia cases
- Exact cause remains unknown, but build up of **plaques** (beta-amyloid) and **tangles** (tau) are primary focus
- No effective treatment or cure

Managing Alzheimer's disease

Medications: May temporarily treat symptoms, but do not stop the progression of the disease

- **Aricept** (Donepezil)
- **Namenda** (Memantine)
- **Exelon** (Rivastigmine)
- **Razadyne** (Galantamine)



Behavioral interventions: Addressing triggers, modifying environment, adapting communication strategies

Caregiver support: Education, skill-building, resources, and respite

The need for a cure is GREAT

+ **62K**

LIVING WITH
ALZHEIMER'S
IN SAN DIEGO

#3

CAUSE OF
DEATH IN
SAN DIEGO

150K

SAN DIEGANS
CARING FOR A
LOVED ONE

Alzheimer's disease is the only cause of death among the top 10 in the U.S. today with **no effective treatment or cure.**

Research updates: current courses

- Development of effective **biomarkers**
- Gauging **treatment impact** through improved brain imaging techniques
- Learning from families with rare Alzheimer's-causing **genetic changes**
- Risk factors and **prevention**: sleep, exercise, cognitive training, trauma
- Behavioral **rehabilitation** and remediation techniques: exercise, cognitive training
- **Caregiver well-being**: mental and physical health
- Targets for **drug discovery**:
 - Beta-amyloid
 - Tau protein
 - Inflammation
 - Insulin resistance

Research updates: risk & prevention

Risk factors for Alzheimer's disease

- Age
- APOE-e4 allele
- Head trauma
- Education
- Female sex
- Family history

Experts agree that in most cases, AD likely develops as a result of complex interactions among many of these factors

Exercise and Alzheimer's disease

Regular, moderate-high intensity aerobic exercise increases blood flow in the regions of the brain compromised by aging and Alzheimer's disease, even while at rest, and appears to slow the progression of the effects.

In mild Alzheimer's, aerobic exercise improved neuropsychiatric symptoms, such as agitation.

Reducing the risk of cognitive decline

- Physical exercise
- Diet
- Social engagement
- Cognitive activity

What's good for the heart is good for the brain.

What is holding us back?

Major barriers:

- More research funding needed
- Advances in research have slowed due to lack of volunteers for clinical trials

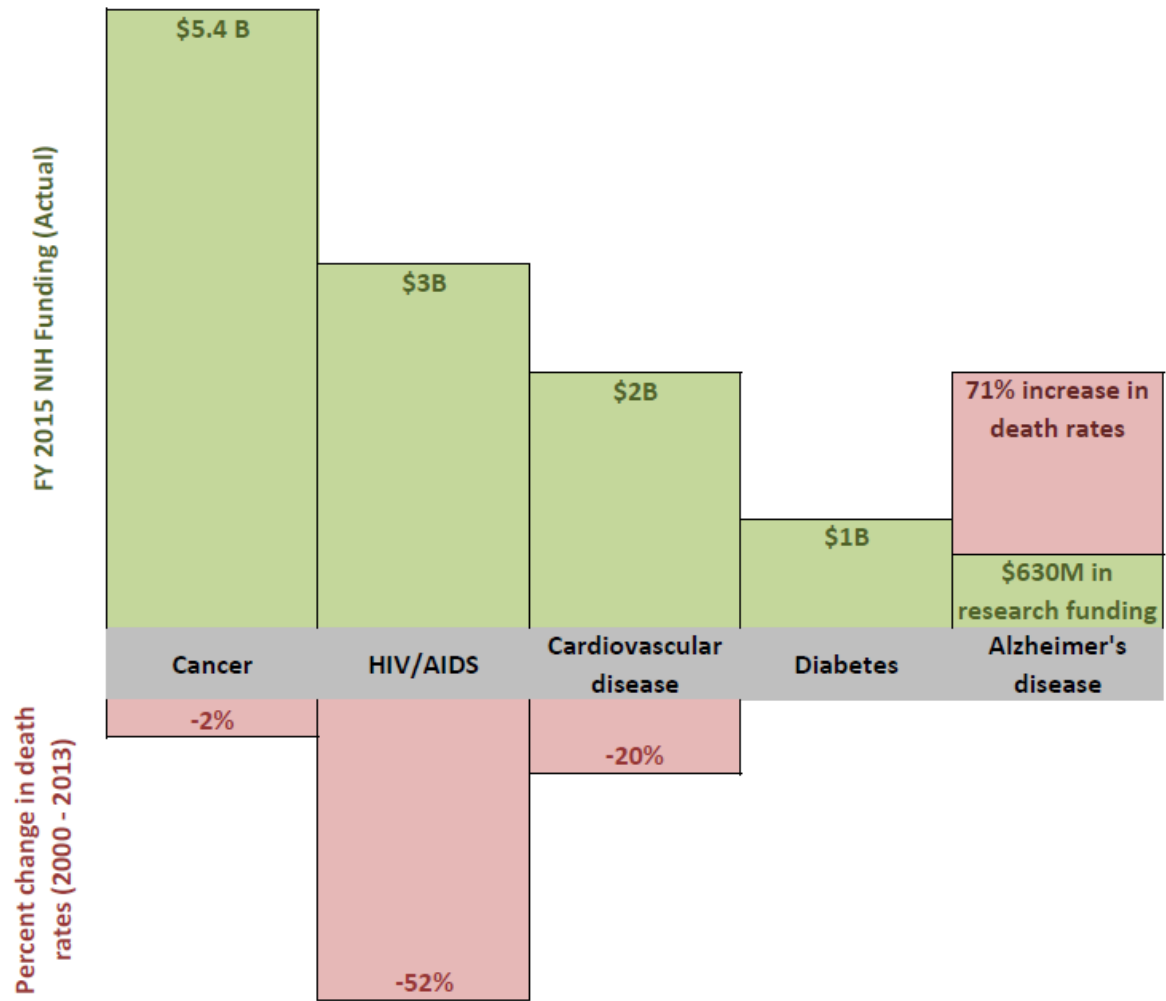
Volunteers are needed:

- Mild Cognitive Impairment
- Alzheimer's Disease
- Caregivers
- Healthy (no symptoms)

At any given time, more than 200 studies in the U.S. are seeking participants.

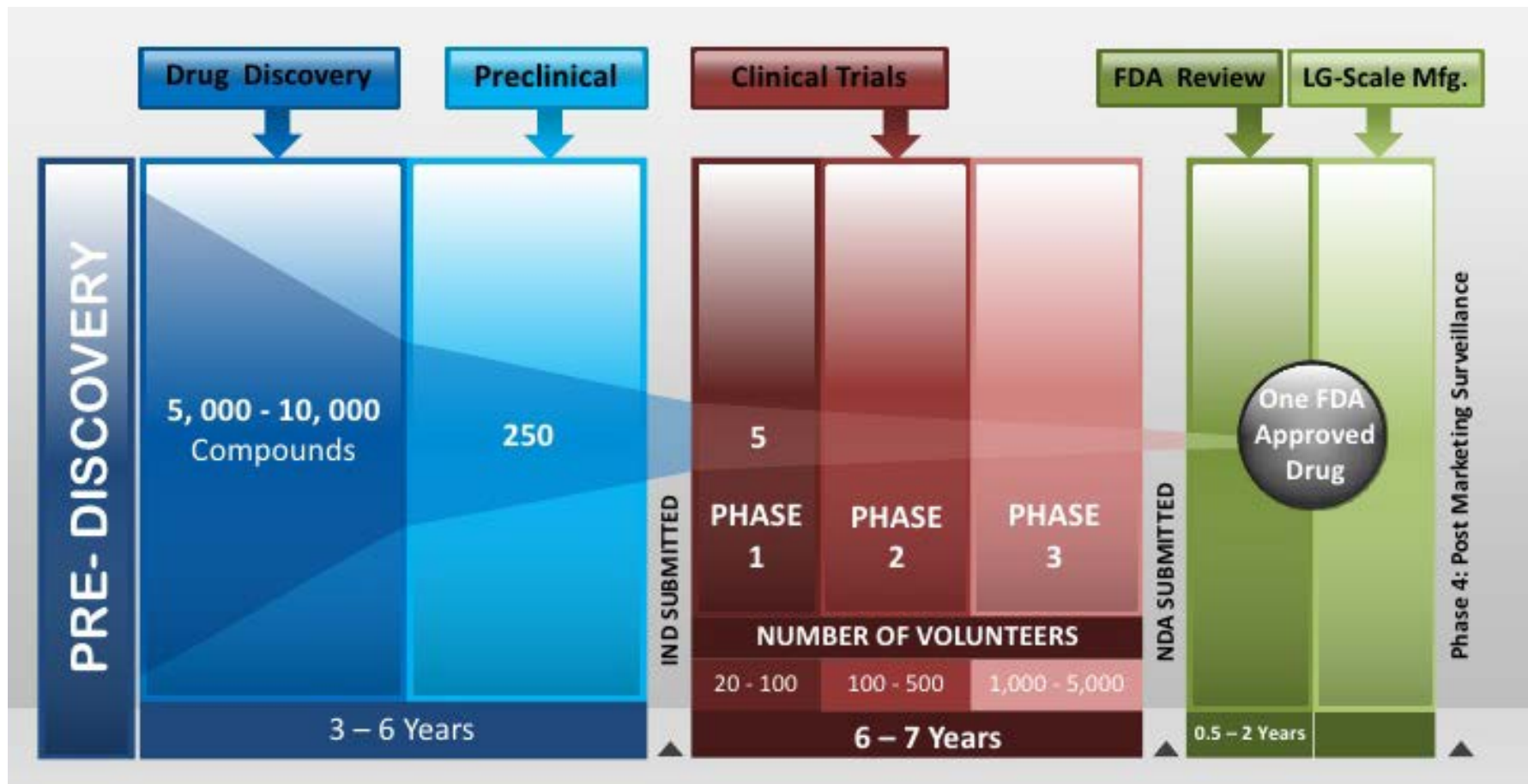


Estimates of funding for various research, condition, and disease categories



Source: https://report.nih.gov/categorical_spending.aspx

Drug discovery and development



THE ALZHEIMER'S Project

San Diego unites for a cure and care



Funding Alzheimer's Research in San Diego

Why San Diego?

- Several **nationally recognized centers** for cutting edge life sciences research
- Home to more than **21 Nobel Prize winners** and a rich history of scientific breakthroughs
- The greatest risk factor for Alzheimer's is age and **over 12%** of San Diego's population is over the age of 65

What success will look like

Prevention

- Prevent the formation of beta-amyloid plaques tau neurofibrillary tangles

Treatment

- Improve brain's ability to clear plaque
- Reversal of cognitive and behavioral symptoms

Detection and early diagnosis

- Tests for earlier and more accurate diagnosis

What can you do?

Learn

www.nih.gov/health-information/nih-clinical-research-trials-you



National Institutes of Health
Turning Discovery Into Health

Participate

www.brainhealthregistry.org



BrainHealth
R E G I S T R Y

What can you do?

Locate a clinical trial

- National Institutes of Health: www.clinicaltrials.gov
- Banner Alzheimer's Institute Prevention Registry: www.endAlznow.org
- Center Watch (Clinical Trials Listings Service): www.centerwatch.com
- Alzheimer's San Diego: <http://www.alzsd.org/resources/san-diego-research/clinical-trials/>

Support the effort

- Advocate
- Donate



In the absence of effective
therapies and a cure,
the best medicine we have is

GOOD CARE

Alzheimer's | SAN DIEGO

The Heart of Local Care & Cure



EDUCATION
A variety of classes, workshops & conferences held throughout San Diego County



MEET WITH ALZ EXPERTS
Call, email or meet in-person at our office to receive support, information and resources



SUPPORT & DISCUSSION GROUPS
More than 40 groups to choose from



ALZ COMPANIONS RESPITE
Free in-home weekly respite to give families a break



EARLY STAGE SUPPORT
Take Charge! 5-week workshop & Early Stage Support Group



MEMORY SCREENINGS
For individuals who are worried about memory loss



SOCIAL ACTIVITIES & OUTINGS
Art, music, exercise & social outings



SAFETY
Sheriff's Take Me Home Program & GPS Wandering Prevention Program



LOCAL RESEARCH
Local clinical trial registry & Collaboration4Cure, a groundbreaking drug discovery project



COGNITIVE STIMULATION THERAPY
A research-proven, medication-free program designed to potentially improve memory and slow the progression of early dementia



Free in-person support from local experts
alzsd.org | 858.492.4400