



Advancing the Science: The Latest in Alzheimer's and Dementia Research

Alexis Bonoff
Program Manager and Research Champion
Alzheimer's Association (WA and N.ID Chapter)

The Alzheimer's Association leads the way to end Alzheimer's and all other dementia — by accelerating global research, driving risk reduction and early detection, and maximizing quality care and support.



Our dual mission symbol represents the abstract forms of a human head and a beaker, emphasizing the people and the science behind our cause.



**Care
& Support**



Advocacy



**Education
& Awareness**



Research



**Diversity, Equity
& Inclusion**

Our Time Today

1 About Alzheimer's & Dementia

2 Early Detection & Diagnosis

3 Treatment

4 Risk Reduction

5 Alzheimer's Association Initiatives
& How You Can Get Involved

A microscopic view of neurons, showing their cell bodies and branching processes, rendered in a blue and purple color scheme. The neurons are interconnected, forming a complex network. The central neuron is the most prominent, with several long, thin processes extending outwards. The background is a soft, out-of-focus blue, suggesting a neural network.

About Alzheimer's & Dementia

2024 ALZHEIMER'S DISEASE FACTS AND FIGURES



NEARLY
7 MILLION
AMERICANS ARE LIVING
WITH ALZHEIMER'S

THE LIFETIME RISK FOR
ALZHEIMER'S AT AGE 45 IS

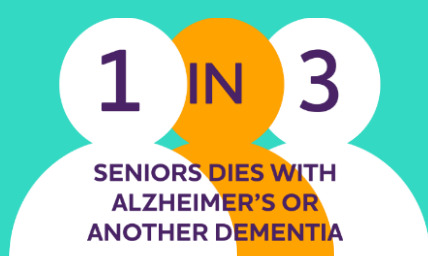


Older Black Americans are
2X AS LIKELY
to have Alzheimer's or other
dementia than Whites.

BETWEEN 2000 AND 2021, DEATHS
FROM HEART DISEASE HAVE
DECREASED 2.1%



WHILE DEATHS FROM
ALZHEIMER'S DISEASE HAVE
INCREASED 141%



IT KILLS MORE THAN
BREAST CANCER AND
PROSTATE CANCER

COMBINED



Older Hispanic Americans are
1.5X AS LIKELY
to have Alzheimer's or other
dementia than Whites.

What is Dementia?

- Dementia is a collection of symptoms related to cognitive decline
- This can include
 - Cognitive symptoms
 - Behavioral symptoms
 - Psychological symptoms
- **Alzheimer's is the most common cause of dementia**
- Not everyone with cognitive decline has dementia. Some causes of cognitive decline are reversible.

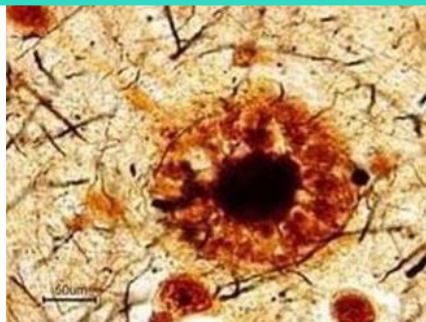
TYPES OF DEMENTIA

Dementia is an umbrella term for loss of memory and other thinking abilities severe enough to interfere with daily life.

- Alzheimer's
- Vascular
- Lewy body
- Frontotemporal
- Other, including Huntington's
- * **Mixed dementia:** Dementia from more than one cause

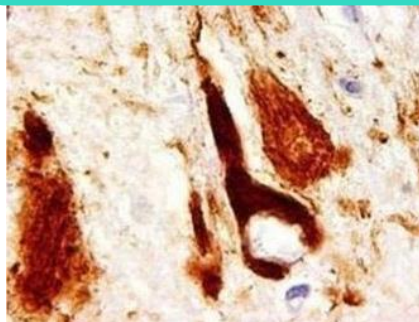
The Hallmarks of Alzheimer's

1 Plaques



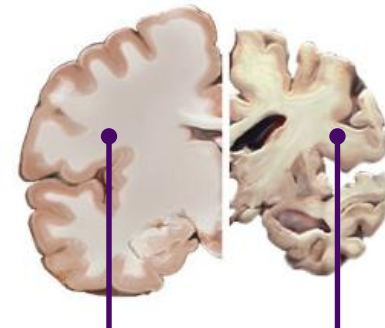
Made up of **beta amyloid**

2 Tangles



Made up of **tau**

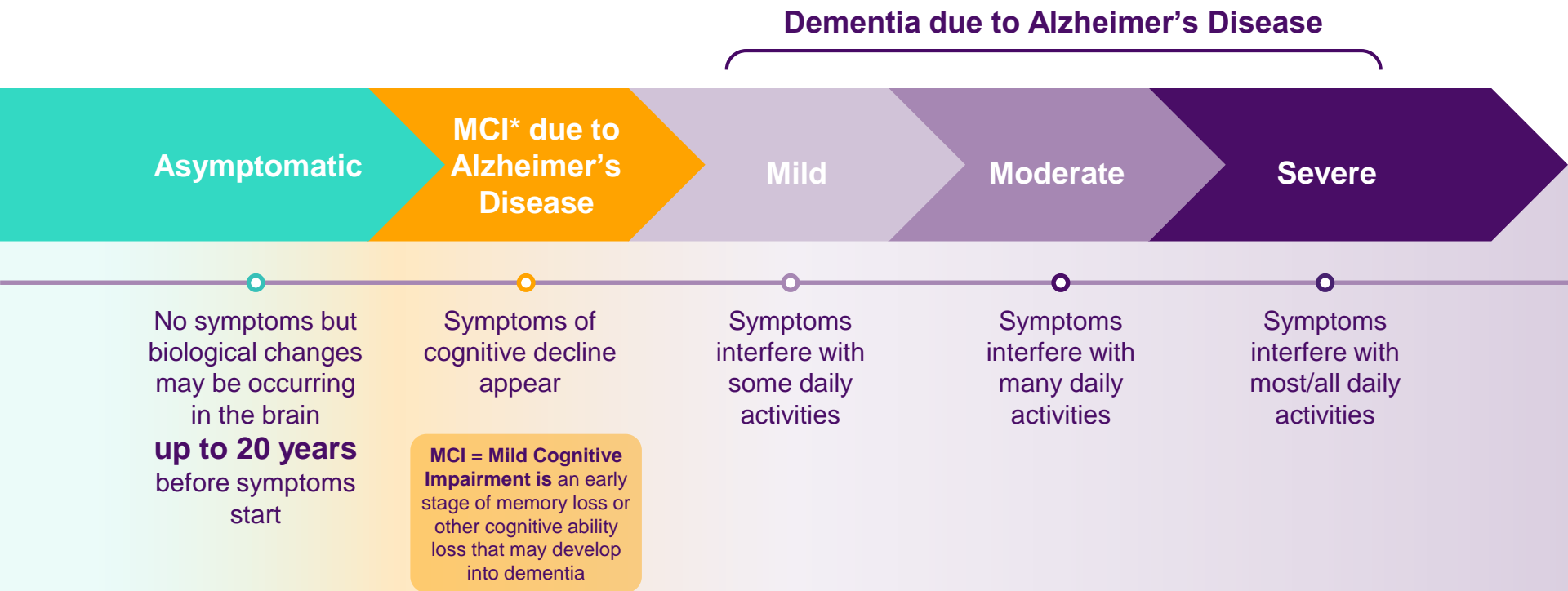
3 Brain Cell Death



Healthy
brain

Advanced
Alzheimer's

Alzheimer's Disease is a Continuum





Early Detection & Diagnosis

Benefits of an Early and Accurate Diagnosis

Medical Benefits

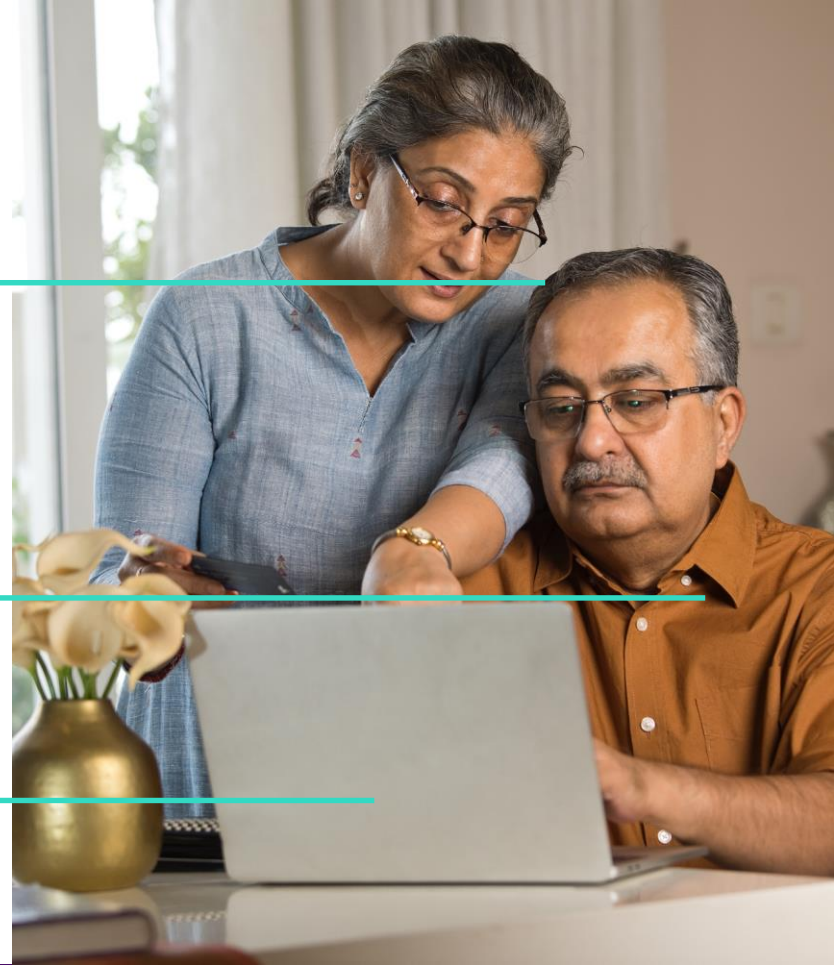
- Access to current treatments
- An opportunity to participate in clinical trials
- A chance to prioritize health, including making lifestyle changes

Emotional and Social Benefits

- More time to plan for the future, access resources
- Time to plan end-of-life decisions

Financial Benefits

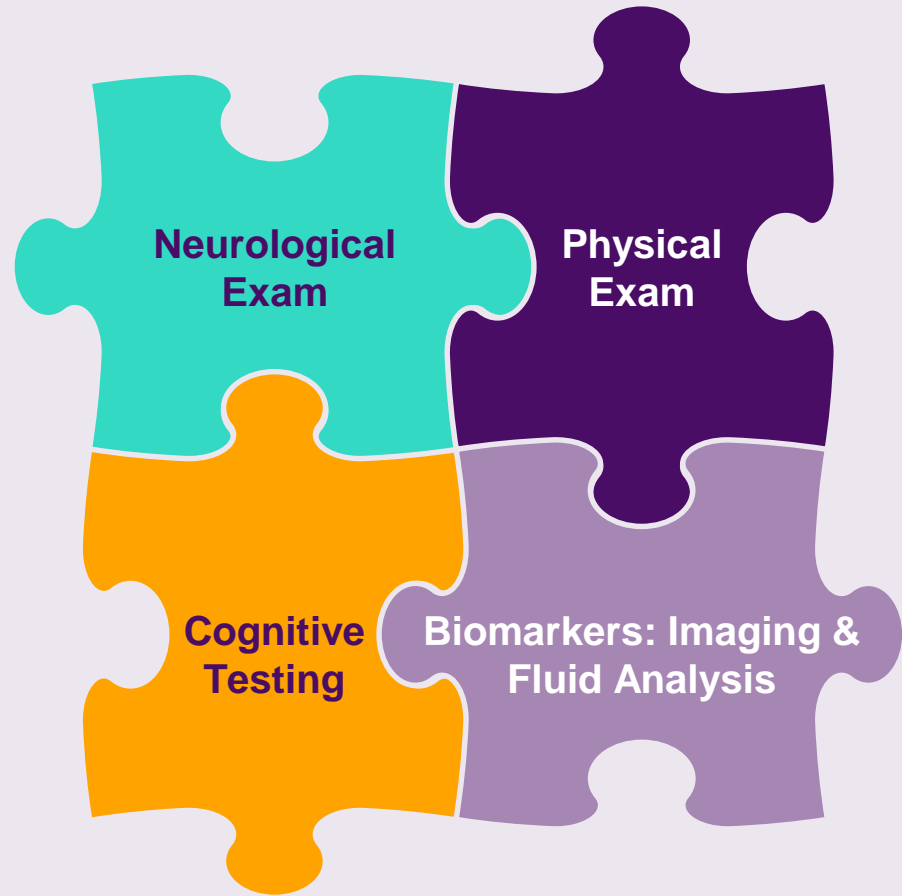
- Cost savings for families
- Cost savings for the U.S. government



How is Alzheimer's Currently Diagnosed?

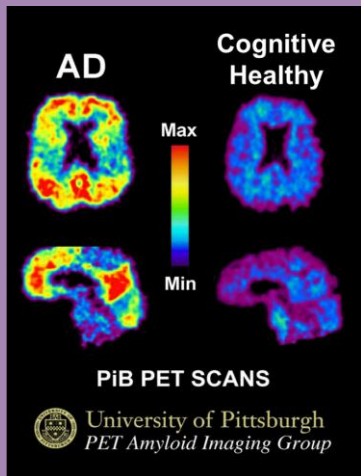
There is no single test that can determine if a person is living with Alzheimer's disease or another dementia.

Doctors use a combination of diagnostic tools combined with medical history to make an accurate diagnosis.



What is a Biomarker?

A biomarker is a biological marker that measures change.



Biomarkers are reliable predictors and indicators of disease and disease progression.

For example:

- Glucose is a biomarker for insulin resistance and diabetes.
- Cholesterol is a biomarker for heart disease



Uses of biomarkers in Alzheimer's disease include:

Diagnostic: used to determine diagnosis

Enrichment: used to determine entry into a clinical trial

Prognostic: used to determine course of illness

Predictive: used to track outcomes and side effects of treatments

Biomarkers

A New Frontier in Alzheimer's Detection, Diagnosis and Research

Cerebrospinal fluid (CSF) analysis can use to detect amyloid in the CSF (taken by a lumbar puncture), which can be predictive of changes in the brain.

There are several emerging **blood tests** on the market that can indicate presence of Alzheimer's markers years before symptoms emerge.

Blood tests for Alzheimer's should be prescribed by a doctor and followed by other methods of diagnosis.



Positron emission tomography (PET) scan results aid doctors in diagnosing and treating memory conditions. There are FDA approved PET scans that measure amyloid and tau.

Magnetic Resonance Imaging (MRI) can help doctors rule out other symptoms that may be causing dementia symptoms, as well as track treatment side effects.

Other **emerging biomarkers** include:

- examining skin and saliva to indicate early biological changes in the brain
- retinal imaging

which show promise to be low cost, accessible detection methods for Alzheimer's.

Research Roundup

Identifying New Biomarkers

- In addition to amyloid and tau — two key hallmarks in Alzheimer's disease — researchers are exploring emerging markers of cell death, inflammation and vascular related changes.

Standardizing Biomarkers

- Alzheimer's Association leads the Global Biomarker Standardization Consortium (GBSC), which conducts studies that aim to standardize use of fluid biomarkers across populations.

Bringing New Tests to Doctors' Offices

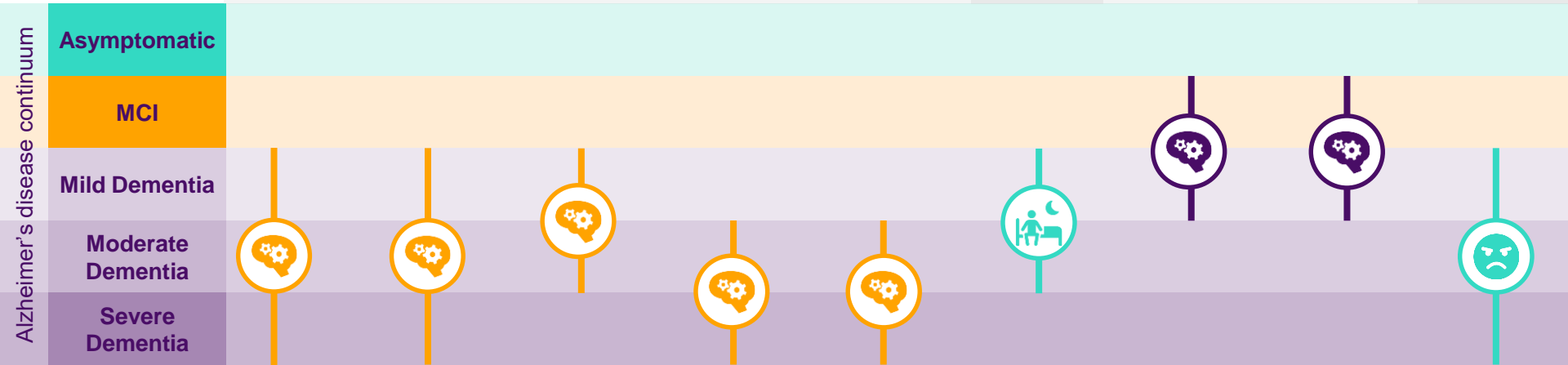
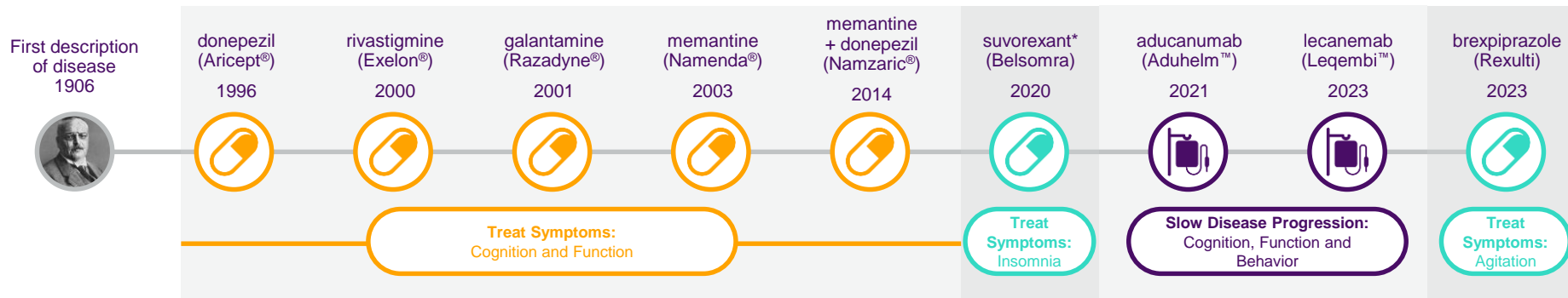
- As new biomarkers reach doctor's offices, the Alzheimer's Association publishes recommendations and guidance for doctors for use of imaging, fluid and other diagnostic biomarkers for Alzheimer's disease.

These programs provide a strategy to determine the most valuable tests that can be used to detect, diagnose and inform treatment for individuals with Alzheimer's and other dementia.



Treatment

FDA-Approved Therapies for Alzheimer's





2024 Alzheimer's Drug Development Pipeline

127

Unique therapies

164

Clinical Trials for Alzheimer's disease as registered on clinicaltrials.gov

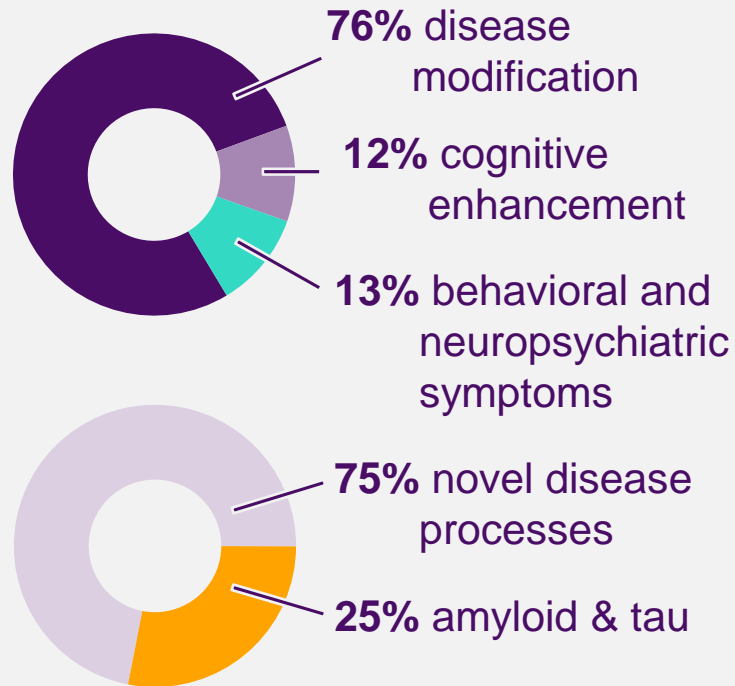
33

New agents have entered the pipeline in the past year

65,798

Total number of participants needed to populate all currently active trials (Phases 1, 2 and 3)

Targets of agents currently in clinical trials include:



An elderly woman and man are practicing Tai Chi in a room. The woman, on the left, has short grey hair and is wearing a light blue jacket over a white top. The man, on the right, has white hair and is wearing a dark blue jacket. Both have their hands raised in a Tai Chi gesture. The background features a large green plant on the left, a window with a wooden frame in the center, and a decorative mask on the wall to the right. The entire scene is overlaid with a semi-transparent purple filter.

Risk Reduction



Reducing Risk of Dementia

- Positive, everyday actions can make a difference in brain health, even lowering the risk of cognitive decline and possibly Alzheimer's and dementia.
- Up to **40%** of dementia cases could be prevented or delayed by targeting modifiable risk factors.
- Research suggests **combining multiple healthy factors** may be the most impactful.
- Nonmodifiable risk factors include age, genetics and sex/ gender/ race/ ethnicity.



Alzheimer's Association Initiatives & How You Can Get Involved

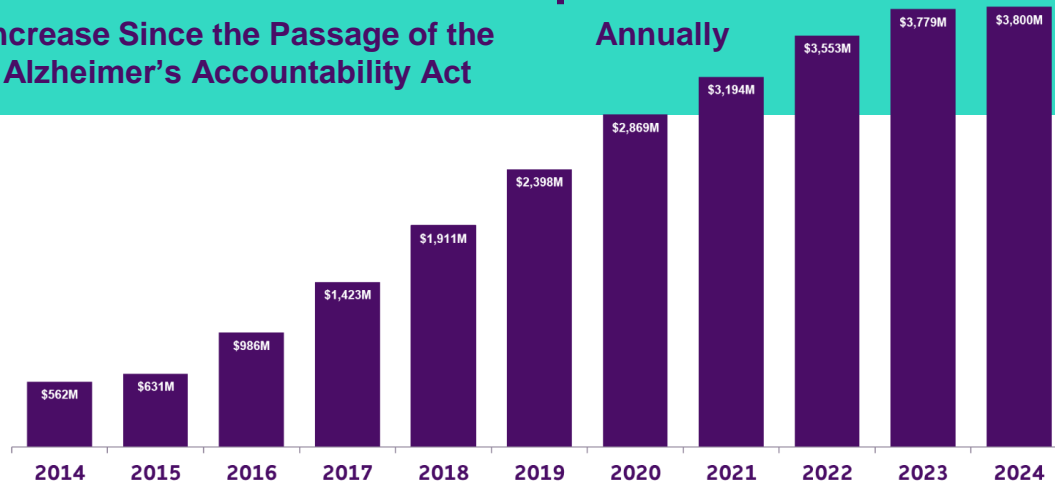
Alzheimer's Research Funding is at an All-Time High

7x

Increase Since the Passage of the Alzheimer's Accountability Act

\$3.8B

Annually



Alzheimer's and Related Dementia Funding at the National Institutes of Health (NIH)

Source: NIH (<https://report.nih.gov/funding/categorical-spending>) with the 2024 figure reflecting NIHs estimated 2023 funding plus the additional increase of \$100M appropriated through the FY2024 funding bill.



Alzheimer's Association: the world's largest nonprofit funder of Alzheimer's & dementia research



\$405M

currently
active



1100+

projects

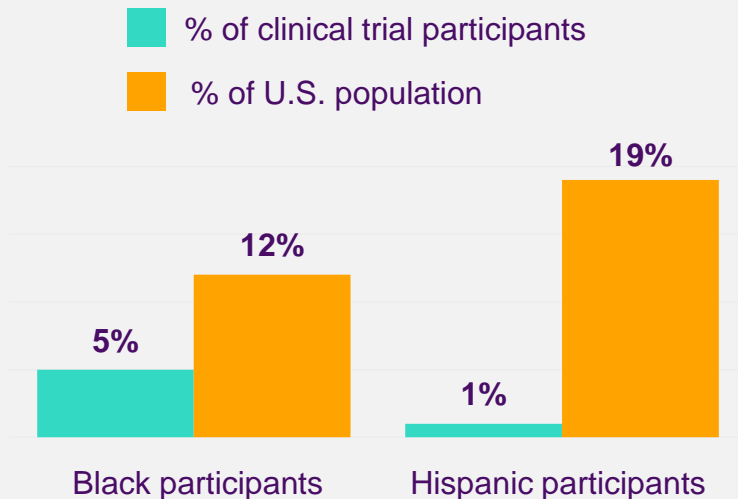


56

countries

Advancing Health Equity

Racial and ethnic populations are underrepresented in clinical trials.



Legislation like the bipartisan **Equity in Neuroscience and Alzheimer's Clinical Trials (ENACT) Act** will increase education and outreach to underserved and underrepresented communities, encourage diversity of clinical trial staff, and make it easier for underrepresented groups to participate in research.

The Alzheimer's Association is **committed to diversity, equity and inclusion** in Alzheimer's research by supporting researchers from diverse backgrounds.

- *Alzheimer's Association Core Grant Programs to Promote Diversity*
- *ISTAART Diversity and Disparities PIA*
- *AAIC Advancements: Health Equity*

Research Resources



Association's Website | alz.org



Research at the Association | alz.org/research



Join a Clinical Trial | alz.org/trialmatch



Contact the 24/7 helpline | 800-272-3900

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.
- Healthy and cognitively impaired people from all backgrounds are needed to participate in Alzheimer's and dementia research.



SCAN
to find
out more

trialmatch[®]

ALZHEIMER'S  ASSOCIATION[®]

POWERED BY CenterWatch iConnect[™]

**Over 370,000 users and includes 750+ clinical studies around the world.*

731 Alzheimer's Disease

351 Mild Cognitive Impairment

36 Vascular Dementia

110 Other Dementia

In Summary...

- The Alzheimer's Association is the global leader for Alzheimer's and dementia science
- Exciting time in research
- New tools for detection and diagnosis
- New approved treatments and more in the pipeline
- Strategies for risk reduction
- There is HOPE in research



**Care
& Support**



Advocacy



**Education
& Awareness**



Research



**Diversity, Equity
& Inclusion**



THANK YOU!

