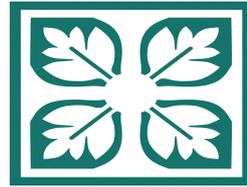




Advancing the Science: The Latest in Alzheimer's and Dementia Research

Claire Day
Chief Program Officer

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HAWAII
CIRCLE OF CARE FOR DEMENTIA

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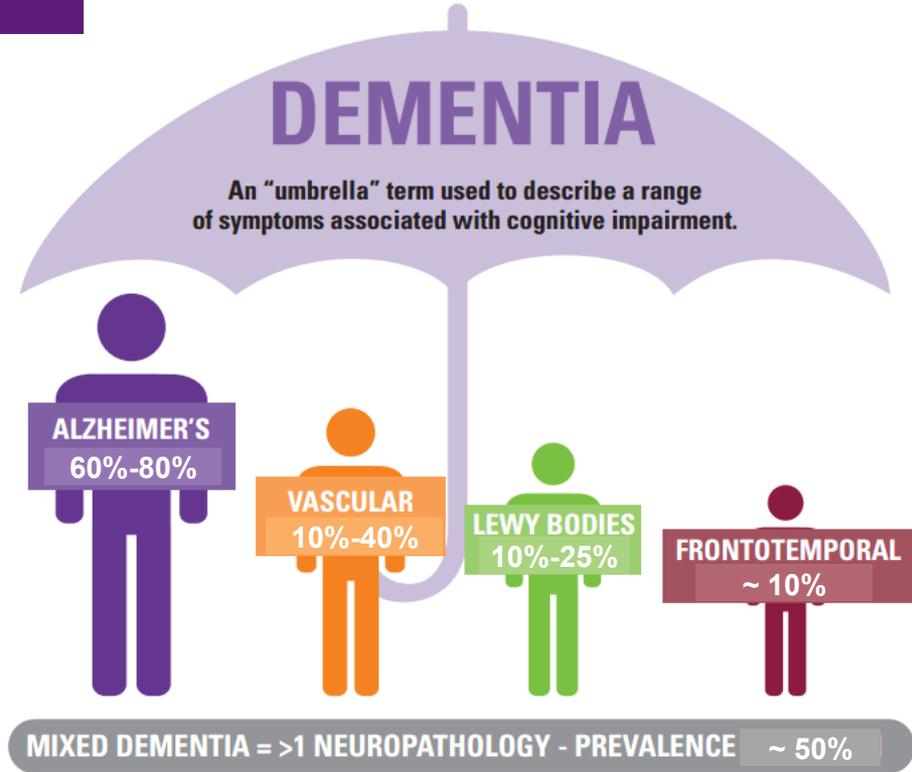
OUR WORK IS ABOUT PEOPLE AND SCIENCE



The Alzheimer's Association is a worldwide voluntary health organization dedicated to Alzheimer's care, support and research.

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



CONTINUUM OF COGNITIVE IMPAIRMENT

Impairment does not interfere
with activities of daily living

Impairment in two or more cognitive functions
that interfere with activities of daily living



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



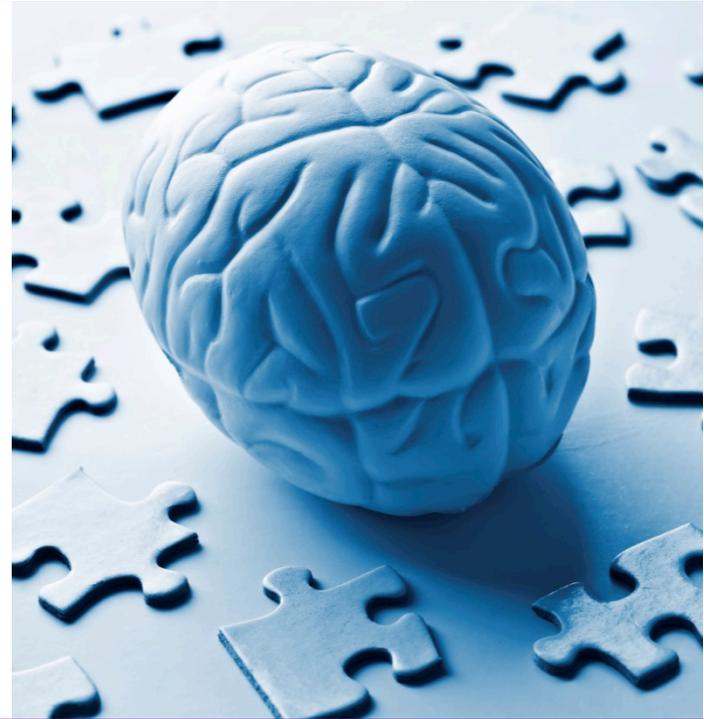
WHAT MAY IMPACT RISK:

- Age
- Genetics
- Race / Ethnicity
- Environmental and Lifestyle Factors
- Cardiovascular Health
- Physical Activity
- Diet
- Sleep
- Social / Cognitive Engagement
- Education

DRUG TRIALS IN THE NEWS

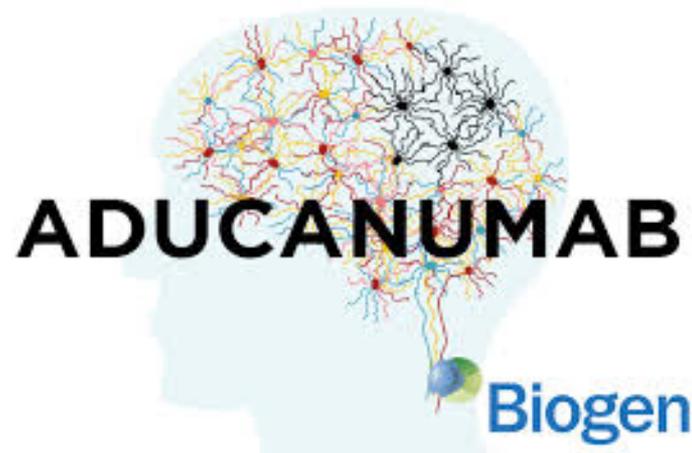
BIOGEN TO SEEK FDA APPROVAL FOR ADUCANUMAB

- EMERGE and ENGAGE Phase 3 Trials
 - Anti-amyloid therapy
 - MCI due to Alzheimer's and mild Alzheimer's dementia
- Expanded Data Analysis
 - Reduction in clinical decline
 - Benefits on cognition and function
 - Reduction in amyloid/tau biomarkers



ANNOUNCEMENT SURPRISES THE FIELD

- *March 2019:* Trials halted due to futility analysis conducted on partial data set
- *October 2019:* Announcement expanded data set shows promise
- *December 2019:* Results reported at CTAD
- *March 2020:* Launch of re-dosing studies to provide drug access to trial participants
- *Mid 2020:* Submitting to FDA for regulatory review
- *Summer 2020:* FDA has prioritized regulatory review



Seed, Speed and Scale Scientific Advances



Discovery
Science



Early
Detection



Treatment

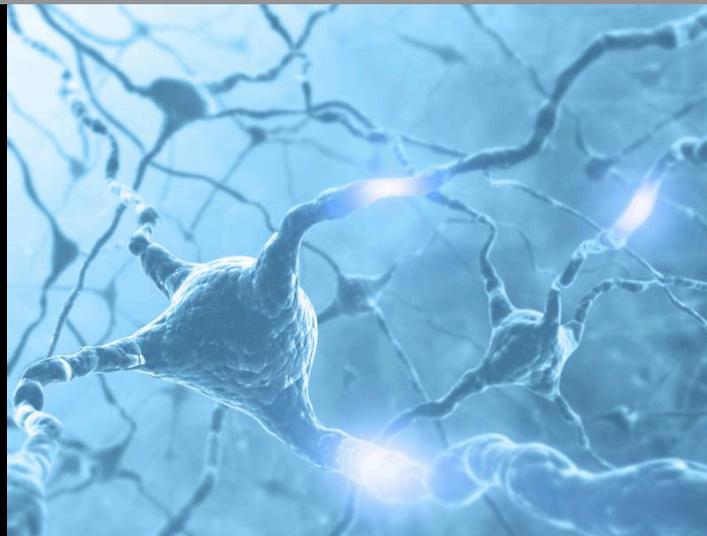


Prevention

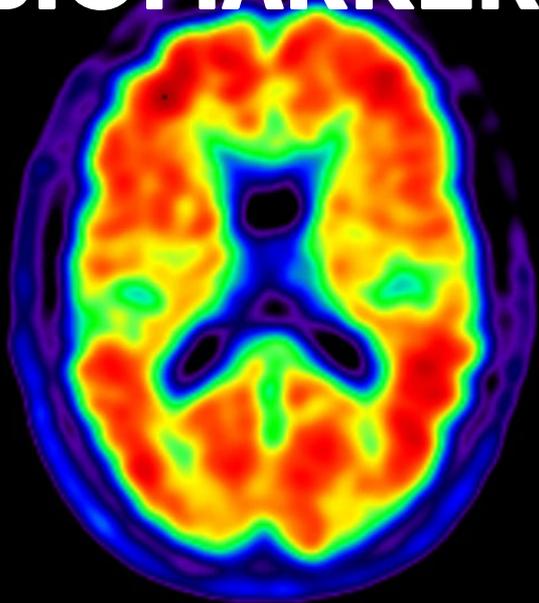
Research Priority Areas

Inform the Structure of
our Grant Program and
Global Collaborative
Partnerships

EXCITING TIME IN RESEARCH



BIOMARKERS ARE CHANGING THE GAME



ACCELERATING THE SPEED OF RESEARCH

Brain Imaging

Biofluid Analysis

Emerging Markers

PROGRESS TOWARDS A BLOOD TEST

- Global race to uncover and develop blood based biomarkers for Alzheimer's and other dementia
- More research validating amyloid beta in blood by comparing to imaging and cognitive testing
- New research on blood tests for alpha synuclein and neurofilament light
- Not in your doctor's office tomorrow, but are already being used for clinical trials

IN THE NEWS

AAIC: A Potential New Biomarker for Alzheimer's Disease

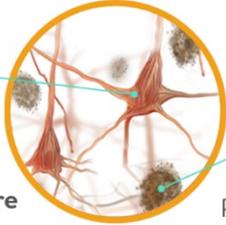
Published: Jul 15, 2019 | By Mark Terry



TAU: ANOTHER BLOOD BIOMARKER EMERGES

TANGLES

Research is looking at twisted proteins called tau tangles that build up inside cells and **may correlate more closely with cognitive decline than beta amyloid.**



PLAQUES

These amyloid protein deposits build up between brain cells in Alzheimer's disease.

Research suggests that a form of tau called p-Tau217 is very specific to Alzheimer's and, when measured in the blood, is highly accurate in distinguishing Alzheimer's from other neurodegenerative disorders.



Differentiate Alzheimer's from other dementias



Diagnose stage of disease



Identify appropriate people for clinical trials



Show changes 20 years before dementia symptoms arise

While still in research stages, blood tests are easier to administer and more accessible than current methods of evaluating Alzheimer's

MODERNIZING THE DIAGNOSIS

Cognitively Unimpaired

Alzheimer's Dementia

Biomarkers

History & Cognition

20

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

VACCINATIONS AND DEMENTIA

New research presented
at #AAIC20 suggests

**FLU AND PNEUMONIA VACCINES
MAY BE ASSOCIATED WITH A LOWER
RISK OF ALZHEIMER'S.**

One study found a **single flu
shot** was associated with a

17%

**LOWER PREVALENCE
OF ALZHEIMER'S.**

**STARTING VACCINATIONS
EARLIER ALSO PLAYED A ROLE**

60 **70**

people who received
their first flu shot at age 60
benefitted more than those
who received it at age 70.

**Another study reported that
for people between 65 and 75,
A PNEUMONIA VACCINE
REDUCED THE RISK OF
ALZHEIMER'S BY UP TO 40%.**

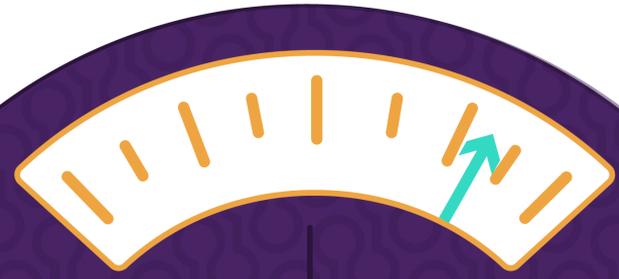


**MORE FREQUENT FLU
AND PNEUMONIA VACCINATIONS**
were associated with an
even greater risk reduction.

YOUR BMI MAY BE MORE IMPORTANT THAN YOU THINK

According to data presented at #AAIC20

Higher body mass index (BMI) between the ages of 20-49 may be associated with higher late-life dementia risk



1.8x

higher risk for **overweight** women

2.5x

higher risk for **obese** women

EARLY LIFE RISK FACTORS IN AFRICAN AMERICAN YOUTH

Are cardiovascular disease (CVD) risk factors developed prior to mid-life associated with late-life cognition?

- African Americans have a higher risk of CVD risk factors compared to other racial/ethnic groups from adolescence through adulthood.
- A study of over 700 African Americans found that **high blood pressure and diabetes**, or a **combination of multiple heart health-related factors**, are common in adolescence and are associated with **worse late-life cognition**.
- Efforts to promote heart and brain healthy lifestyles should also include younger adults and adolescents who may be especially susceptible to the negative impact of poor vascular health on the brain.



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AAIC>20

PROGRESS TOWARD MORE EFFECTIVE TREATMENTS



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

MEDICINES FOCUSED ON BEHAVIORAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA

- A major quality of life problem for people living with dementia
- Must be tested in dementia population
- Ongoing clinical trials focusing on therapies for:
 - **Agitation** (aggression)
 - **Sleep disturbances** (insomnia / interrupted sleep disorders)
 - **Psychosis** (hallucinations / delusions)
 - **Apathy** (lack of appropriate emotional response)

COMBINING MULTIPLE HEALTHY LIFESTYLE FACTORS



HEALTHY DIET

MODERATE TO VIGOROUS PHYSICAL ACTIVITY

LITTLE TO NO SMOKING

COGNITIVE STIMULATION

LIGHT TO MODERATE ALCOHOL INTAKE

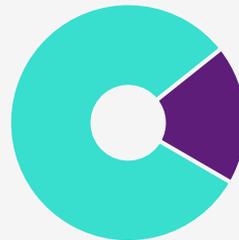
- Combining 4 or 5 factors 59% lower risk
- Combining 2 or 3 factors 39% lower risk
- May even offset risk associated with genetics

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AAIC >19

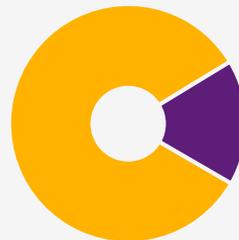
THE SPRINT-MIND STUDY

First Study to Demonstrate Reduction of New Cases of Cognitive Impairment

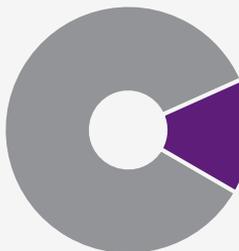
- 9,000+ people, Over age 50, All-cause dementia risk
- Standard vs. Intensive Blood Pressure Intervention
- Intensive treatment 120 systolic vs. 140 systolic
- Dramatic reduction of small vessel disease on **MRI**



19% REDUCED
risk for **MCI**



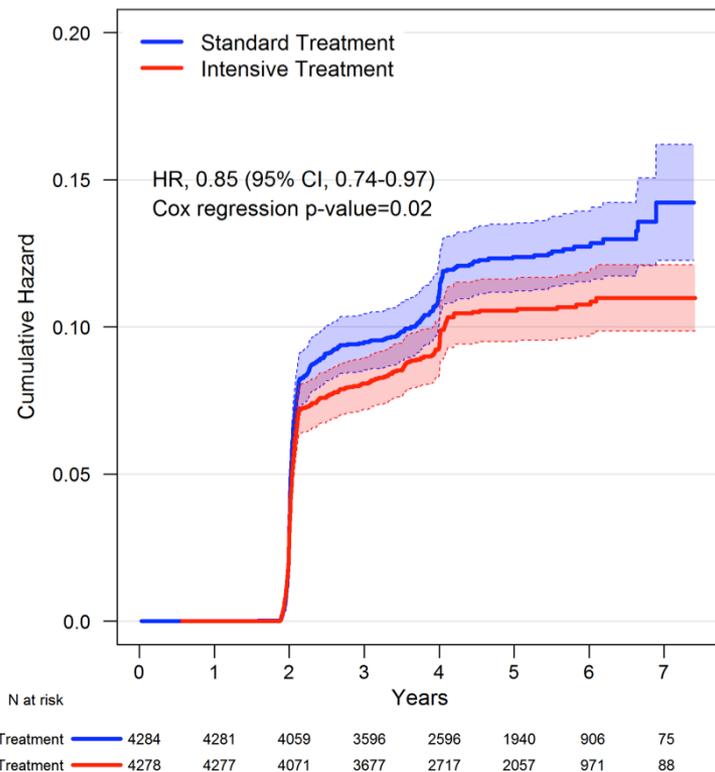
17% REDUCED
risk for **Dementia**



15% REDUCED
combined risk for
MCI and Dementia

THE SPRINT-MIND 2.0 STUDY

- ALZ **SEEDED** SPRINT-MIND 2.0 to clarify impact on dementia with 2 years of additional follow-up
- Over 7,000 will be contacted for additional follow up
- Initiated study **immediately** to allow for maximum participant retention



INTERVENTIONS TO POSSIBLY REDUCE RISK...

Lifestyle Modification &
Potential SYNERGISTIC
Effects on Cognition



**Physical
Activity**

**Cognitive &
Social Stimulation**



**Healthy
Diet**



WHY IS THIS IMPORTANT?

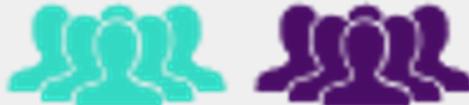
There are things you can do to reduce your risk of MCI and dementia – especially regarding cardiovascular disease risk factors.



**Immediate
opportunity with
life changing
impact potential**



Two year multi-center randomized clinical trial



Self-Guided and Structured Lifestyle Groups



2,000 Participants at five U.S. sites, 60-79 years old, with suboptimal lifestyles

A LANDMARK STUDY: TWO LIFESTYLE INTERVENTIONS

Self-Guided
Lifestyle
Intervention

*Differ in format,
expectations, and
accountability*

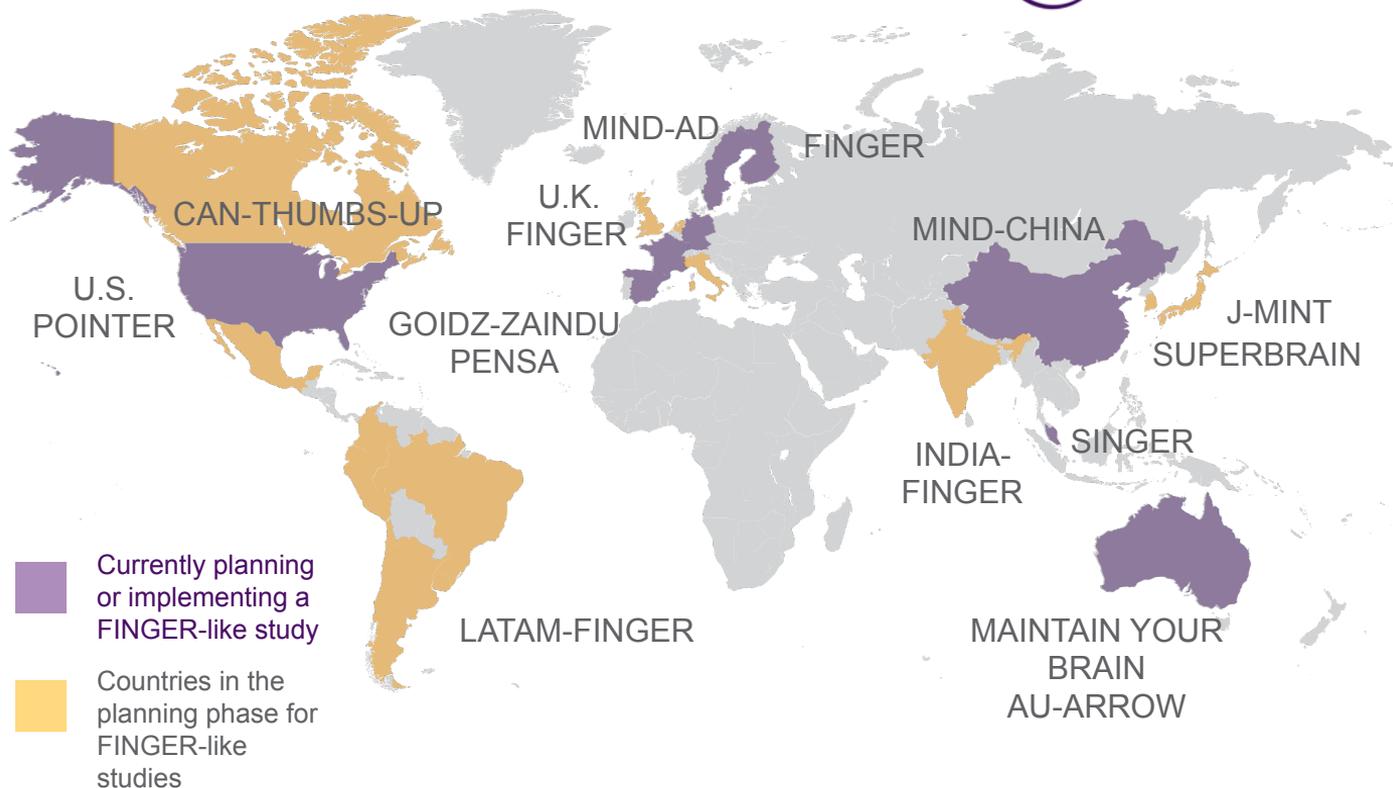
Structured
Lifestyle
Intervention

Physical Activity | Nutrition | Cognitive Stimulation | Health Coaching

GLOBAL

U.S. POINTER ISN'T ALONE

World Wide FINGERS is a broad, international network sharing experiences, data, and planning joint efforts for the prevention of cognitive impairment & dementia worldwide.



NEW AND IMPROVED TRIALMATCH NOW LIVE

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

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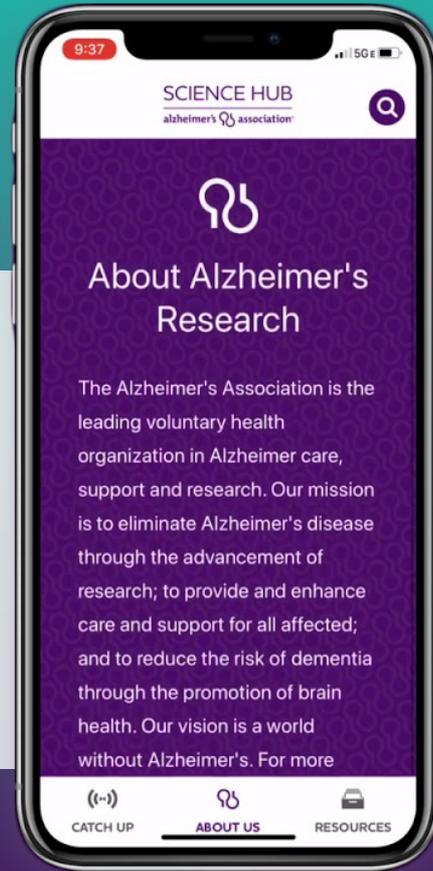
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- Easier to use, connects you with clinical studies faster, and gives you more control over how you search for studies.
- Privacy is key, and the Alzheimer's Association will not share data with anyone.
- Allows you to search for studies without even sharing your name.
- It is up to you to connect with researchers to participate. Simply email or call the research team with the click of a button.



Introducing the Alzheimer's Association Science Hub App





Vision: A world without
Alzheimer's disease
and all other dementia.™

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