

ECHO IDAHO

**Alzheimer's Disease and
Related Dementias**

Reducing Dementia Risk in At Risk Populations

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None of the planners or presenters for this educational activity have relevant financial relationship(s) to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

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University of Idaho
School of Health and Medical
Professions



Disclosures


- I am a full-time employee of the Alzheimer's Association.
- Received grant funding from National Institutes of Health and Center for Disease Control and Prevention.
- Spouse is an employee in Abbott Labs in an unrelated field.

Alzheimer's Association

The Alzheimer's Association forges partnerships with all those with the shared commitment to end Alzheimer's and other dementia, including Alzheimer's organizations around the globe, the National Institutes of Health, National Institute on Aging, universities, corporations and the pharmaceutical, biotech and device industries. This and additional information can be found at www.alz.org/about/transparency.

Learning Objectives

- Describe the current landscape of what we know about prevalence and incidence across the U.S. and in populations that may have greater risk.
- Detail examples of modifiable risk factors for cognitive decline and dementia.
- Outline strategies being pursued to address modifiable risk factors, and the current state of this research.



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



Our Research Strategy

Dynamic, Durable, Multi-dimensional, Multi-faceted



SEED

new ideas



SPEED

the development of
new therapies



SCALE

to accelerate the
science



\$430M

currently
active



1150

projects



57

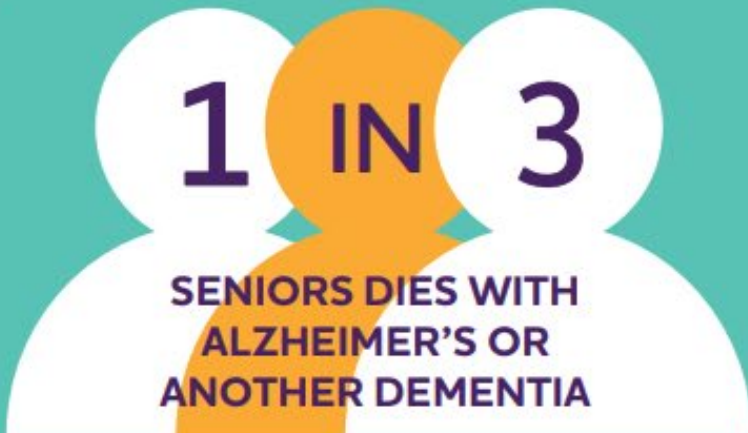
countries



2024 ALZHEIMER'S DISEASE FACTS AND FIGURES



NEARLY
7 MILLION
AMERICANS ARE LIVING
WITH ALZHEIMER'S

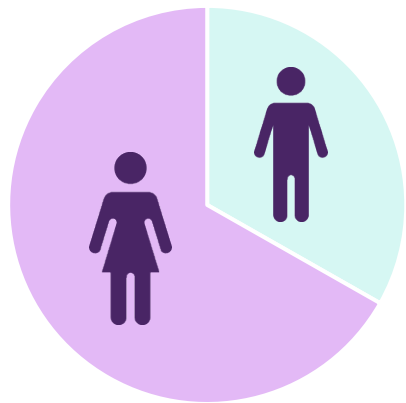


IT KILLS MORE THAN
BREAST CANCER AND
PROSTATE CANCER

— + —
COMBINED

OVER **11 MILLION**
AMERICANS PROVIDE
UNPAID CARE
FOR PEOPLE WITH ALZHEIMER'S
OR OTHER DEMENTIAS

What We Know about Prevalence and Incidence



Almost **two-thirds** of Americans with Alzheimer's are **women**.



Older **Black** and **Hispanic** Americans are disproportionately more likely than older **Whites** to have Alzheimer's or other dementias.

Prevalence of cognitive impairment approx 54% in American Indians aged 70-95



35% Mild Cognitive Impairment;
10% dementia

Significant impact of cardiovascular disease, hypertension & diabetes

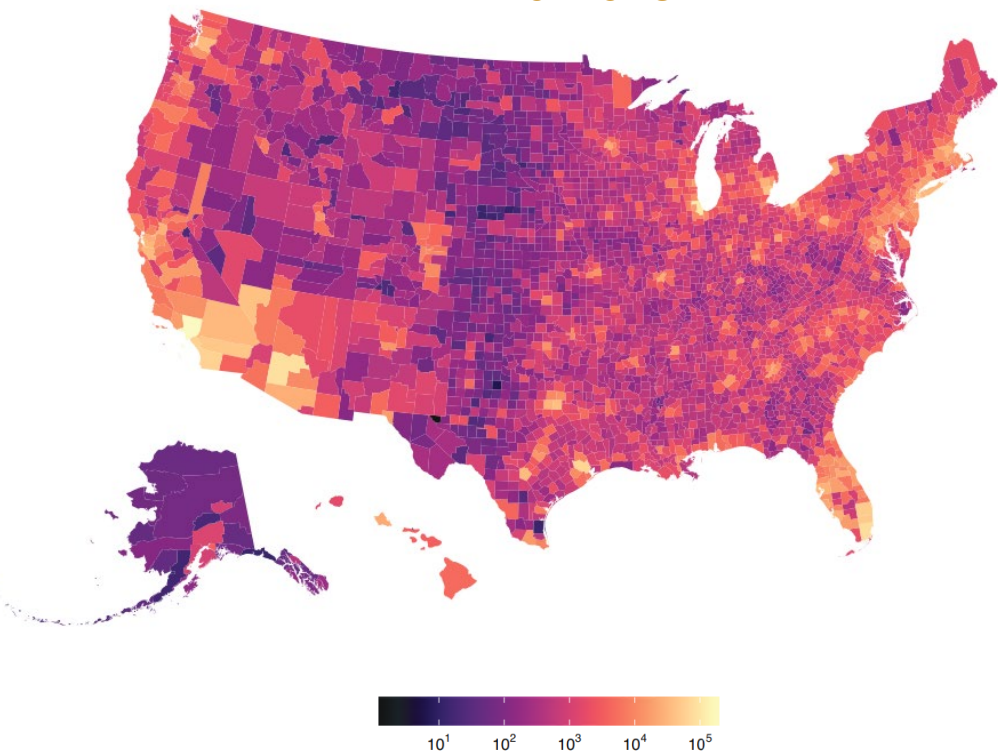
Opportunities to address risk factors such as hypertension & diabetes

Need for culturally sensitive screening tests



US County Dementia Level Prevalence

Estimated number of people living with
Alzheimer's



This is the **first ever county-level** estimates of the **prevalence** of Alzheimer's dementia in people 65 and older

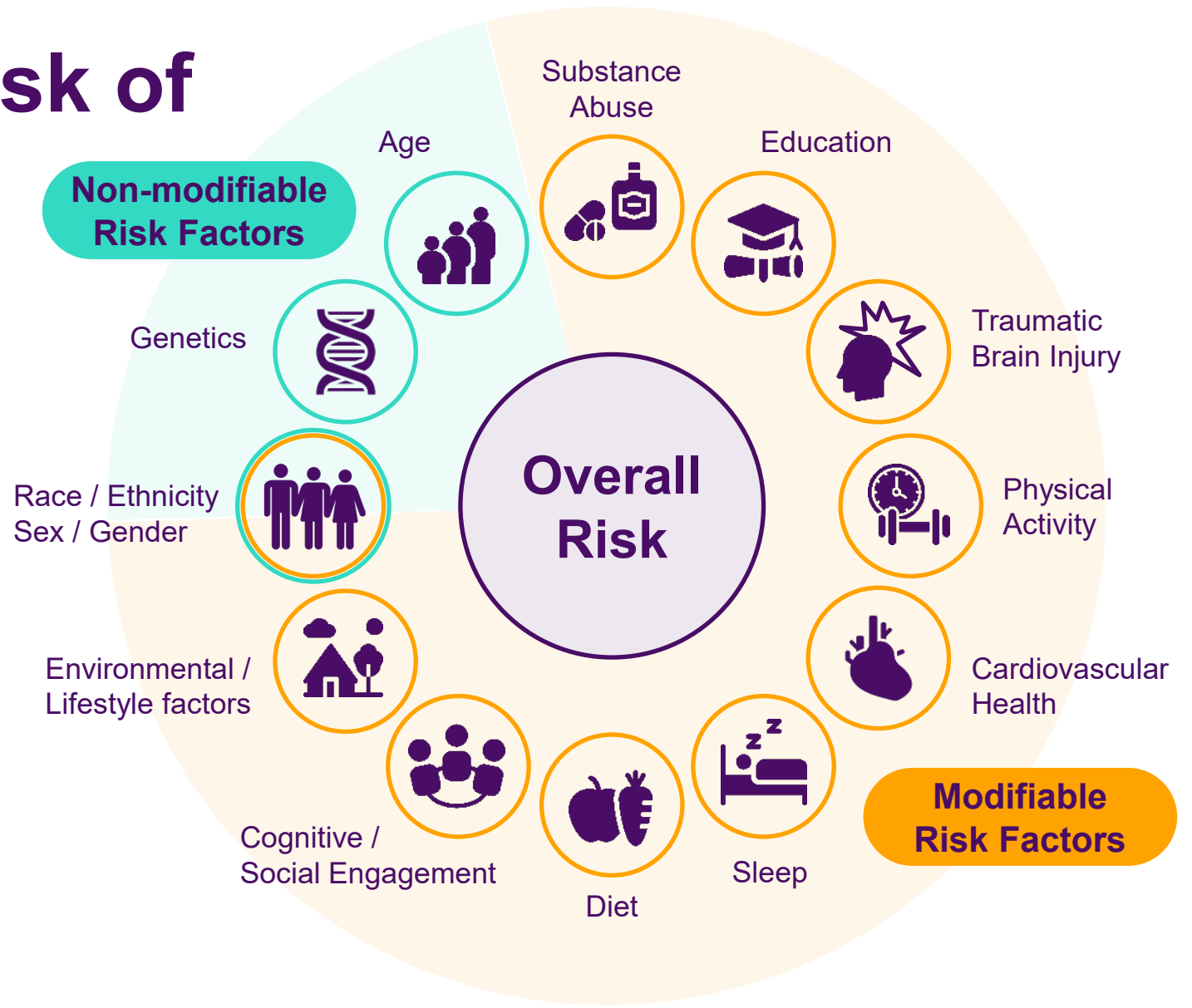
They found the **highest** U.S. prevalence of Alzheimer's are in the **East** and **Southeastern** regions

Demographic characteristics including **older average** and **higher percentages** of **Black** and **Hispanic** residents may explain elevated prevalence

First ever **county level prevalence** for Alzheimer's will help public health programs better understand and pinpoint **areas** of **high risk** and **need**

What May Impact Risk of Cognitive Decline or Dementia?

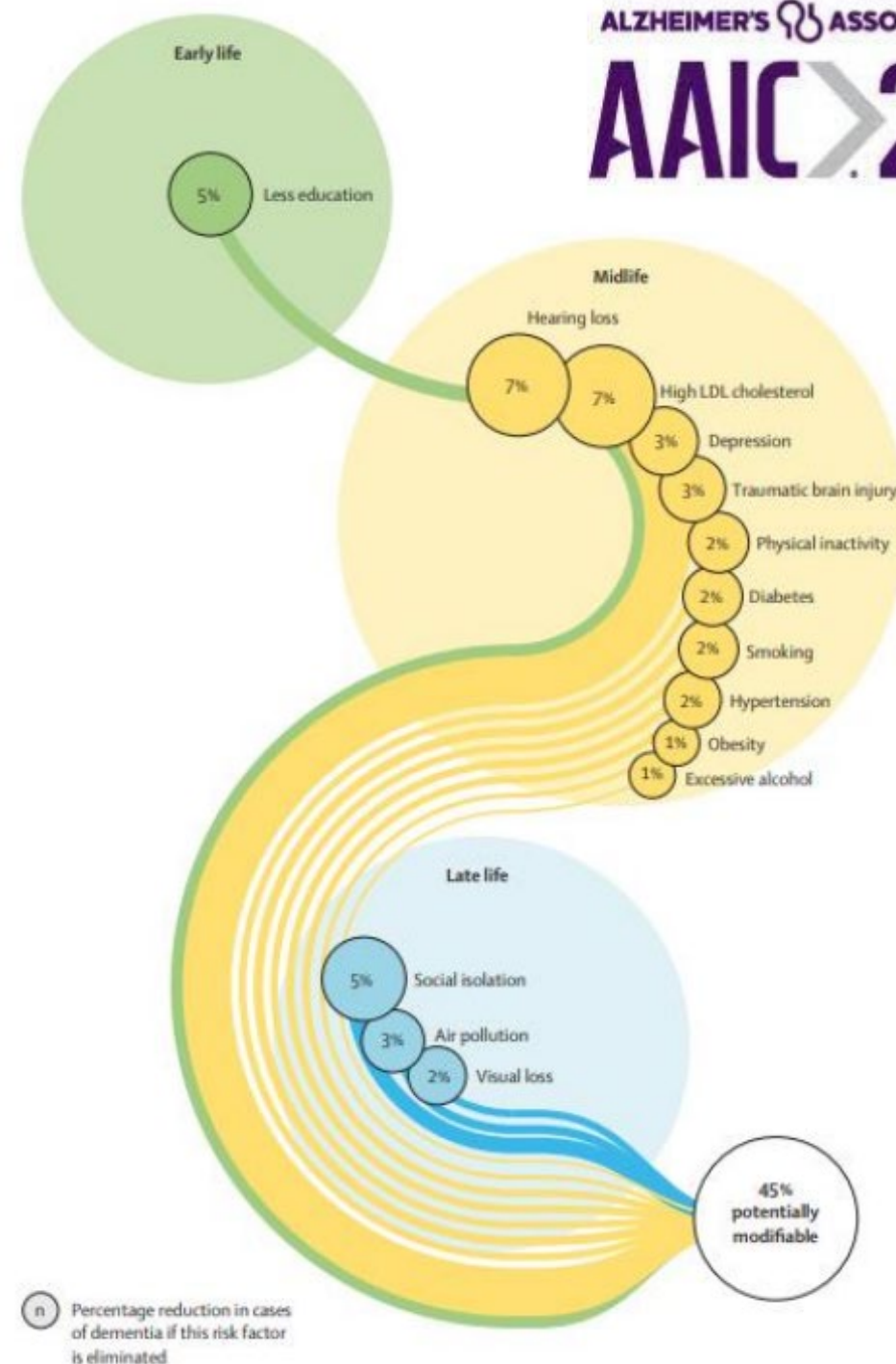
- Constellation of reasons may be fundamental; each person's risk is unique to their lived experience
- Environment may impact one or more of these
- Strength of our understanding is different across risk factors
- Need to study risk from **ALL angles**



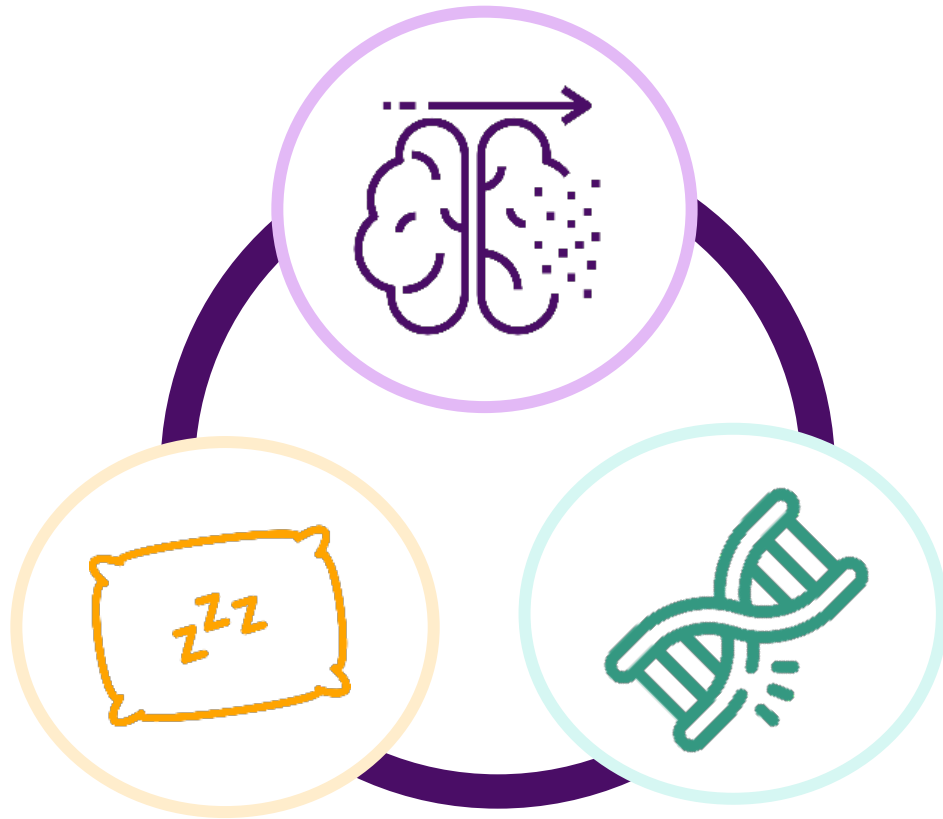
Focus on Risk Reduction

THE LANCET

Suggests 14 modifiable risk factors, if eliminated, would have impact on nearly **50%** of all dementia worldwide.



Sleep As a Risk Factor for Cognitive Decline and Dementia



Studies indicate that those who report short sleep in mid life have an increased risk of developing dementia 25-30 years later.

Poor sleep is associated with changes in Alzheimer's biomarkers including amyloid and tau.

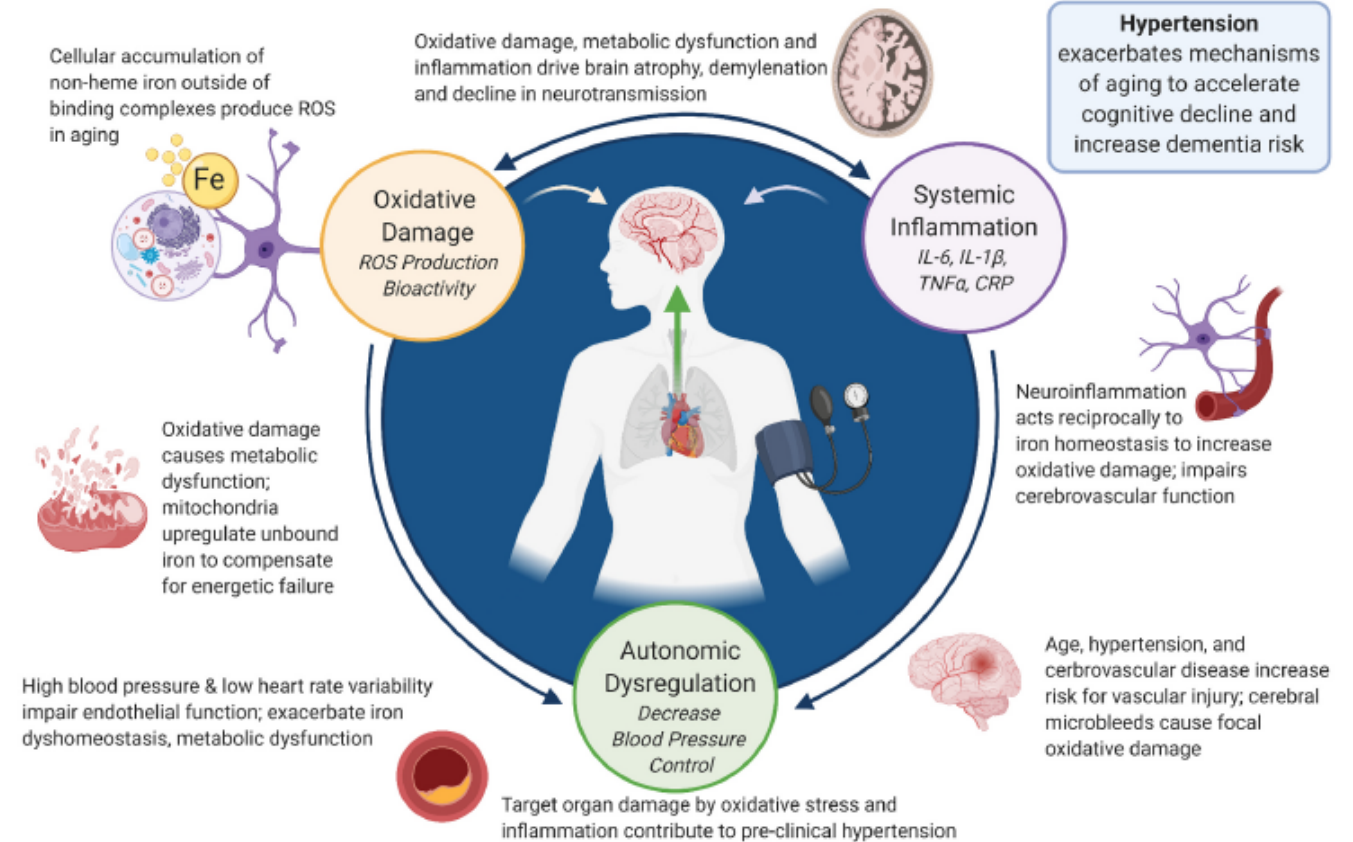
Recent (small) study showed treatment of sleep disturbances reduced the levels of Alzheimer's-related biomarkers. Possible strategy for prevention

Strong Links to Vascular Health

- Confounding factors
 - Midlife Hypertension
 - Midlife Obesity
 - Diabetes
 - Smoking
 - Physical Activity
 - Sleep Quality
- Possible Mechanisms
 - Arterial stiffness
 - Endothelial dysfunction
 - Oxidative damage
 - Inflammation

A.M. Daugherty

Seminars in Cell and Developmental Biology xxx (xxxx) xxx



Daugherty, *Seminars in Cell and Developmental Biology*,
<https://doi.org/10.1016/j.semcd.2021.03.002>

Obesity as a Risk Factor for Cognitive Decline and Cognitive Impairment

IMPACT

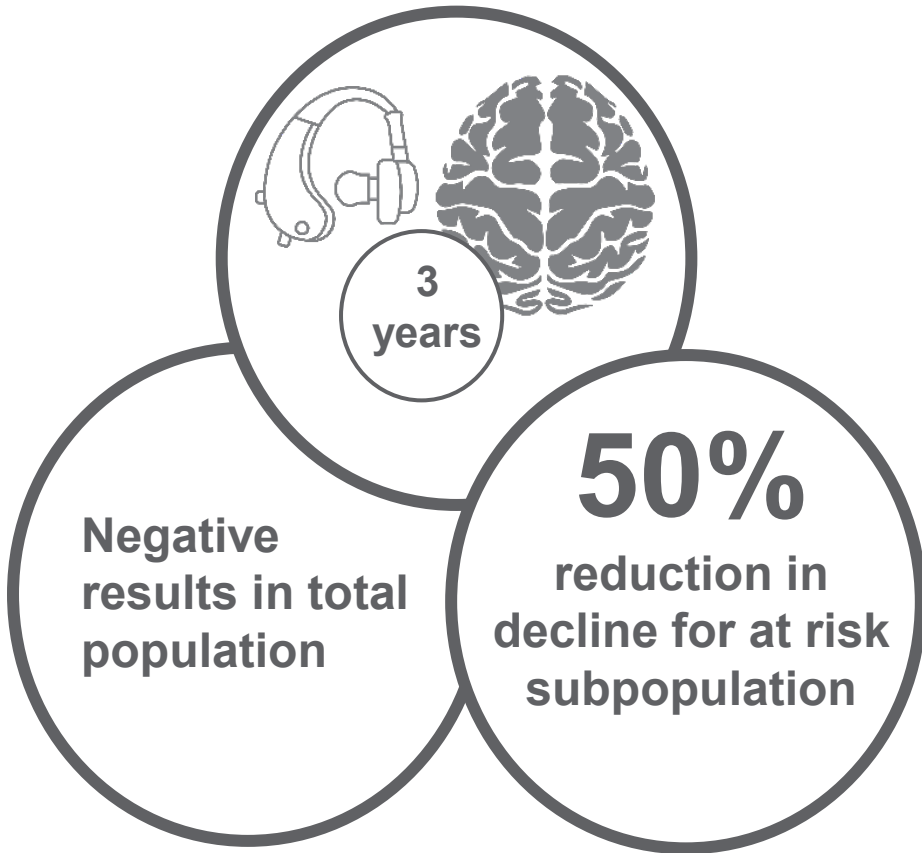
- Mid-life obesity is associated with:
 - Concurrent relative deficits of cognitive function
 - Increased rates of cognitive decline
 - Increased risks (50-90%) for dementia
- Late-life obesity: relationships are less clear
 - Obesity paradox
 - Survivorship bias
 - Later-life weight loss / frailty

MECHANISMS

- Inflammation
- Risk factors for vascular disease
- Hypertension, Insulin resistance, Dyslipidemia
- Accelerated aging
- Disruption of energy metabolism

Obesity Prevention as a Means to Reduce Risk: Strategies

Hearing Aid Intervention Shows Benefit For Some



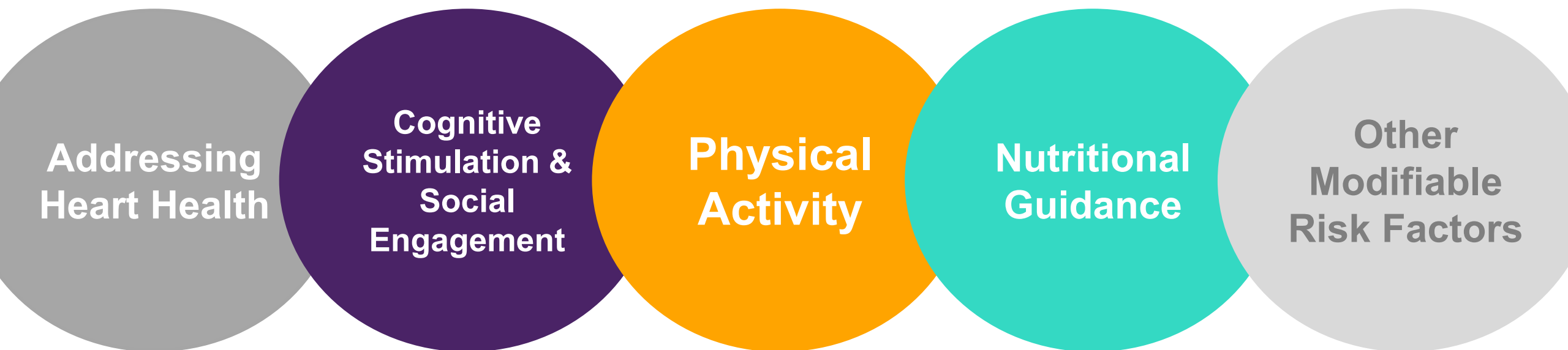
Previous research identified **hearing loss** as potentially largest **dementia risk factor** that can be addressed with existing tools

ACHIEVE study was a **3-year intervention** with **hearing aids** to investigate reduction in long-term cognitive changes

In **total study population**, there was **no benefit** of the intervention on cognitive decline. For a **subgroup** at risk of cognitive decline, the intervention **cut decline in half**

Take home message: Strategies to reduce cognitive decline risk will likely need to **target more than one** risk factor for success

Synergy: Multi-Component Interventions



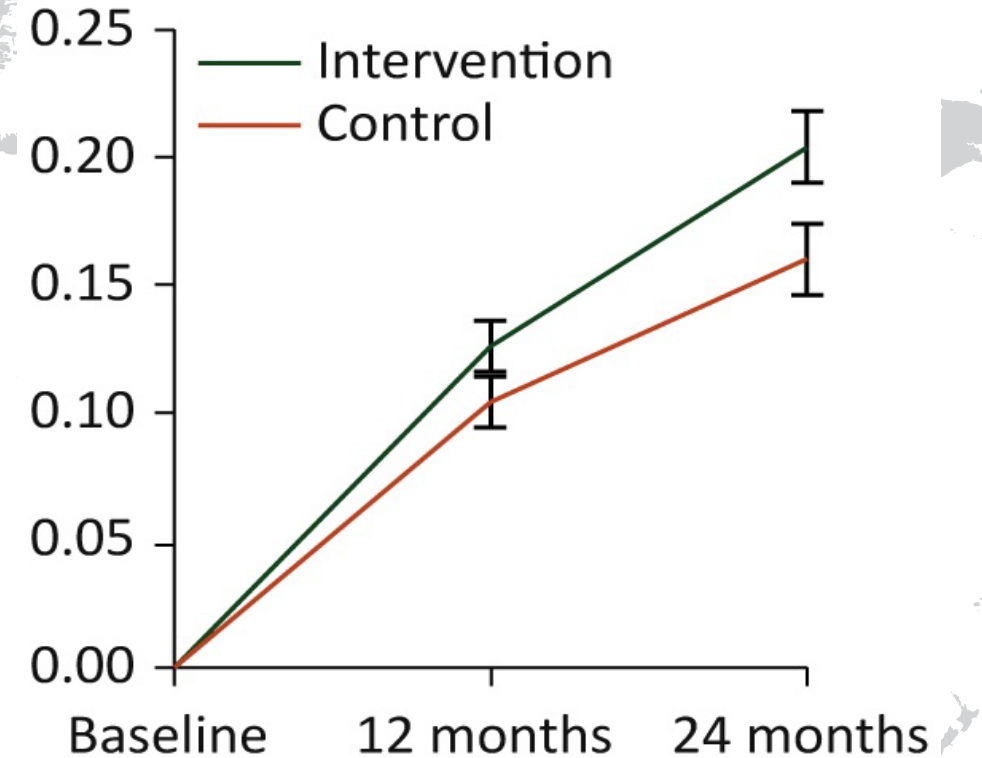
The FINGER Study: Design and Outcome



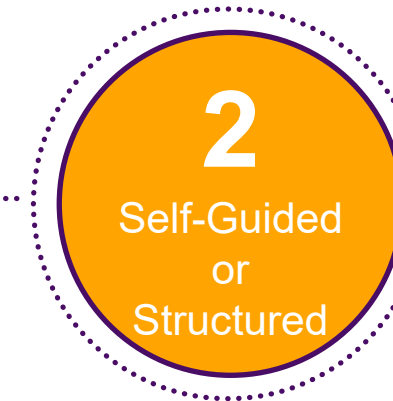
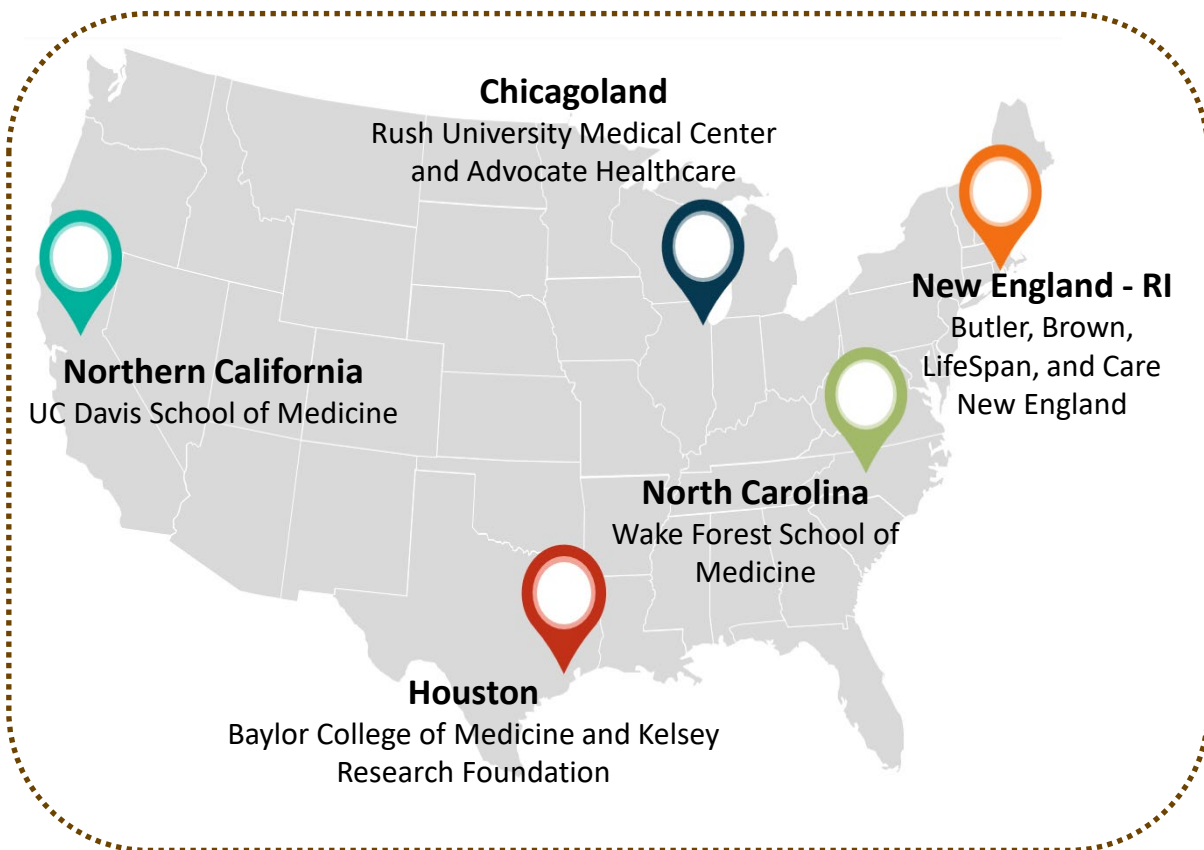
- 1260 cognitively healthy 60-77 year old adults, at increased risk for cognitive decline
- 2 year multi-domain study of Lifestyle Intervention vs. Usual Care
 - Nutrition
 - Exercise
 - Cognitive training
 - Vascular risk monitoring

Results of the large, long-term, randomized controlled **FINGER Study** suggested that a multi-domain intervention could **improve or maintain cognitive functioning in an at-risk population.**

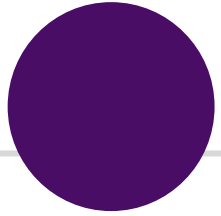
Cognition



Our Biggest Research Investment in Your Community

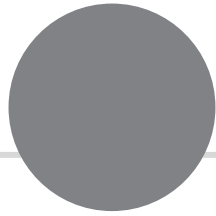


A Landmark Study for the US and Global Community



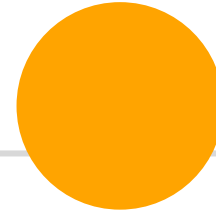
Participants

Older adults (60-79
years, no objective
cognitive impairment)
at increased risk for
cognitive decline



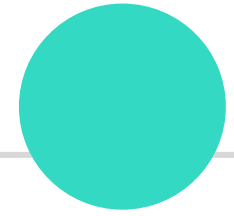
Study Design

Large, randomized
controlled trial testing
the effects of lifestyle
intervention on
cognitive function



Multi Domain

Self-guided and
Structured
Interventions:
Physical Activity,
Nutrition, Cognitive
Exercise, Medical
Monitoring



Robust Data Collection

Clinical, Biofluid,
Genetic, Imaging,
Sleep, Microbiome,
Neurovascular



TRIAL RESULTS EXPECTED



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A large graphic on the left side of the slide, consisting of two overlapping diagonal bands. The top band is yellow and contains the text 'ECHO IDAHO' in white. The bottom band is light gray and contains the text 'Alzheimer's Disease and Related Dementias' in black.

ECHO IDAHO

Alzheimer's Disease and
Related Dementias

Thank YOU!

More info: alz.org

Contact: hsnyder@alz.org

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