

# An Overview of Dementia and California's Alzheimer's Disease Program

Presentation to the Department of Motor Vehicles'  
Disability Advisory Committee Speaker Series  
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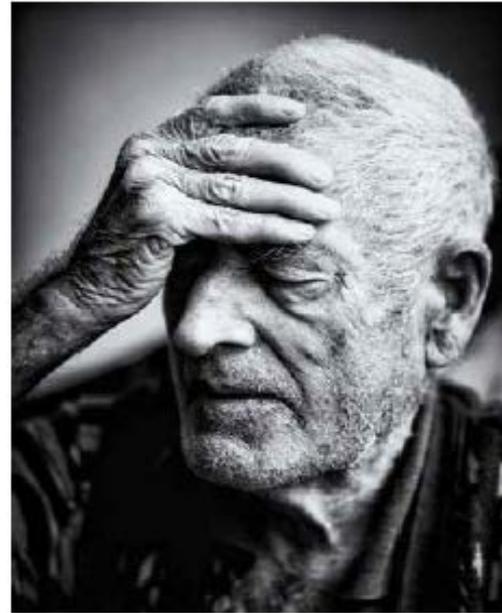
Alzheimer's Disease Program

California Department of Public Health

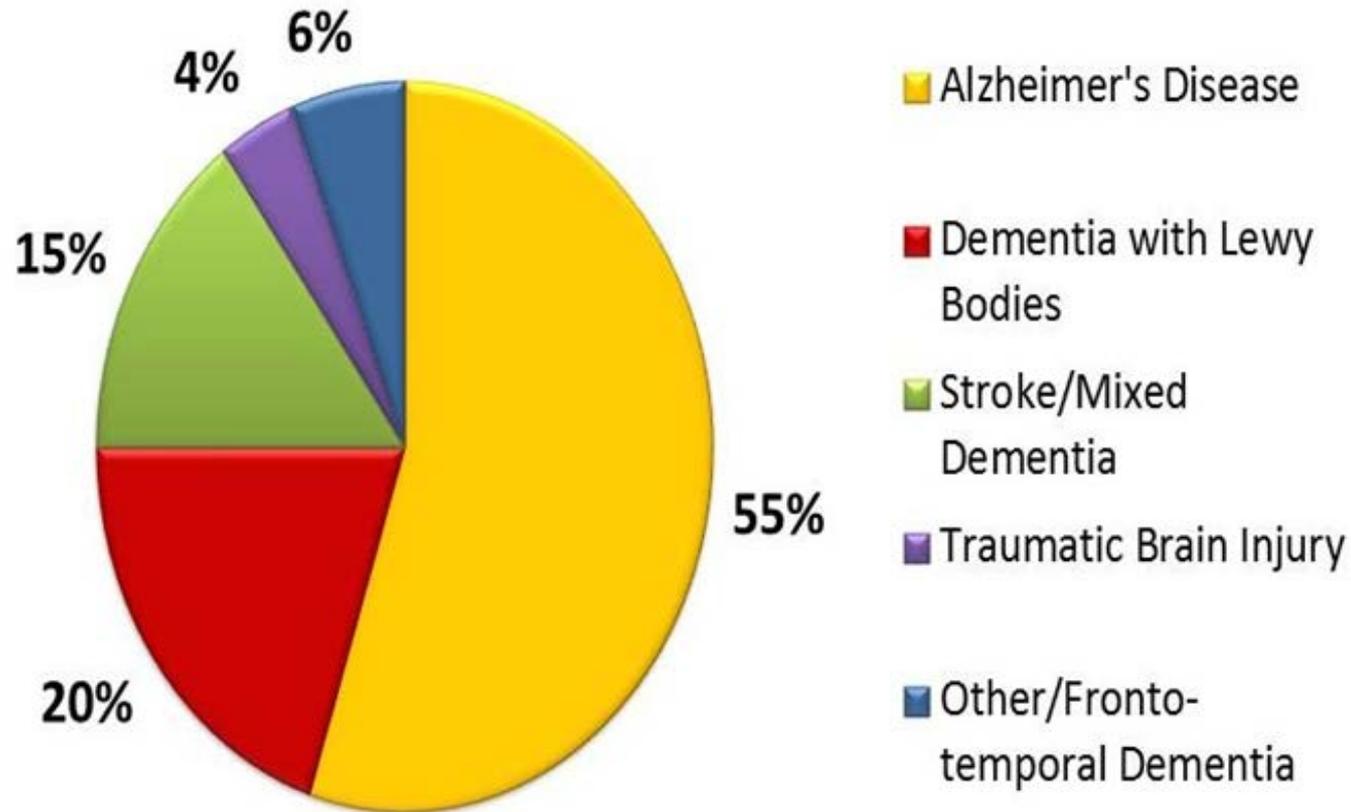


# What is dementia?

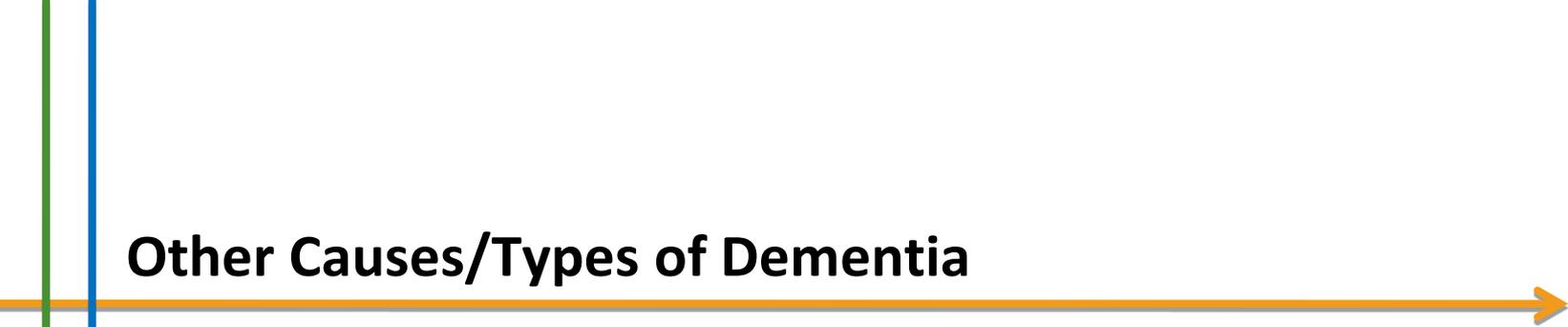
- Dementia, the loss or decline of memory and cognition (thinking and other brain functions), has various causes.
- Alzheimer's disease accounts for 50 to 80 percent of all causes of dementia.
- Cerebrovascular disease, such as a stroke, is the second most common cause of dementia.
- Other forms of dementia can be caused by other neurological or neurodegenerative diseases



## Causes/Types of Dementia



## Other Causes/Types of Dementia

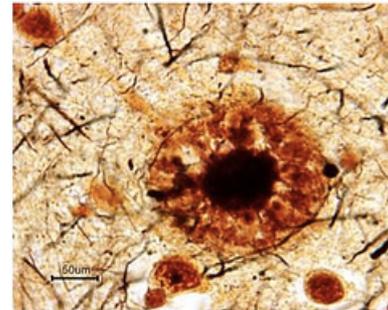


- Cerebrovascular disease/Not Vascular Dementia
- Parkinson's Disease
- Normal Pressure Hydrocephalus
- Progressive Supranuclear Palsy
- Depressive Mood Disorder
- Alcohol Abuse or Dependence
- Drug Abuse or Dependence
- Medication (toxic effect or metabolic derangement)
- Metabolic Disorder
- Toxin
- CNS Infection
- Space-occupying Lesion

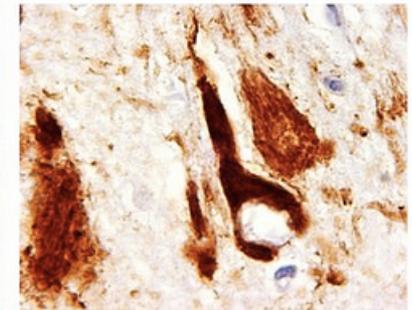
# Alzheimer's Disease

- Alzheimer's disease is the most common type of dementia.
- It is a progressive and ultimately fatal brain disorder characterized by memory loss (especially of recent events), behavioral changes, and loss of other functions including language, decision-making, walking and swallowing.
- Alzheimer's disease is characterized by brain abnormalities caused by protein deposits and malformations such as Amyloid Plaques and Neurofibrillary Tangles.

Plaques



Neurofibrillary Tangles



Plaques and Tangles were typically labeled and used to diagnose Alzheimer's disease at autopsy but medical advancements have allowed for the labeling and use of these proteins as biomarkers in living individuals, and are used to study the presence, absence, or severity of disease.

## Risk Factors

- Age
  - Prevalence doubles every 5 years beyond age 65
  - Prevalence reaches 50 percent for those age 85 and over
  - AD is *not* normal aging, and evidence suggests that a healthy lifestyle, higher levels of education, cognitive activity, and other factors could prevent some cases of Alzheimer's disease.
- Inherited Genetic Factors
  - Mutations in genes involved in processing amyloid protein—seen in familial, early-onset cases.
  - Variation in a gene (apolipoprotein) that produces a protein essential for clearing cholesterol and other molecules out of the bloodstream.

# Prevention

Research indicates that half of all Alzheimer's disease cases could be prevented with lifestyle changes and the prevention or treatment of chronic health conditions.

The most changeable risk factors in the U.S. are, in order of magnitude:

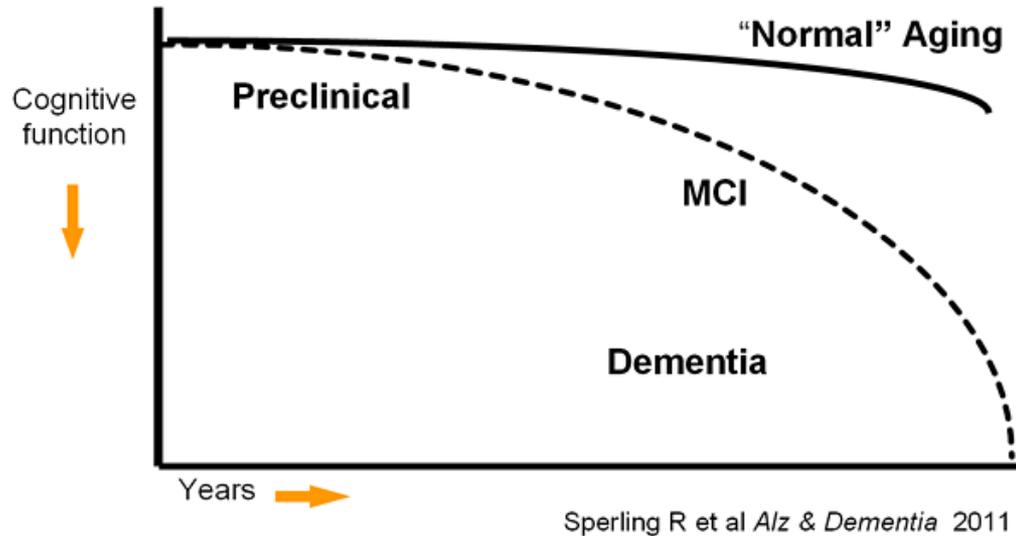
- Physical Inactivity
- Depression
- Smoking
- Midlife Hypertension
- Midlife Obesity
- Cognitive Inactivity or Low Educational Attainment
- Diabetes



## New Criteria for Alzheimer's Disease Diagnosis

- In 2011, the criteria for diagnosis were updated for the first time in 27 years since the criteria was initially established in 1984.
- The new guidelines established 3 stages of the disease with a spectrum between and within each stage.
- The guidelines emphasize new research advancements and methodologies, and provide a framework for studying and characterizing the disease in earlier stages—critical for prevention and treatment.

# Stages of Alzheimer's Disease

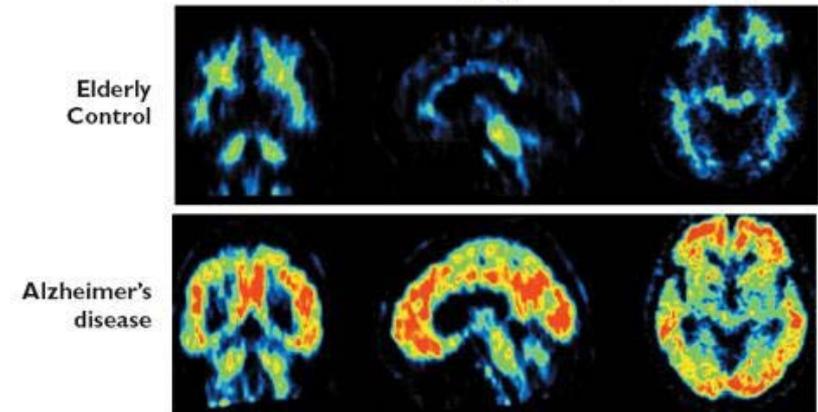


- **Preclinical Alzheimer's Disease**
  - No symptoms; Brain Hallmarks Present
- **Mild Cognitive Impairment**
  - Mild symptoms, Independence Maintained
- **Dementia Due to Alzheimer's Disease**
  - Substantial declines; Loss of Independence

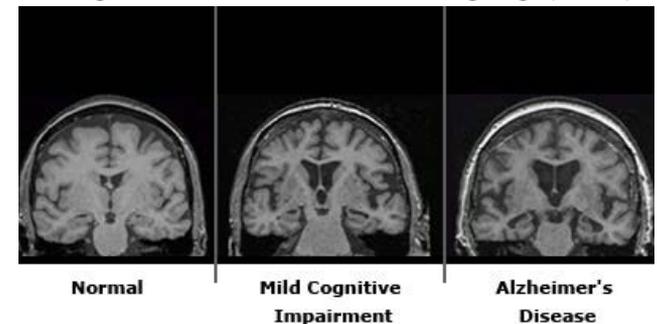
# Tools used in Detection and Diagnosis

- Individual/Informant Reports to Physician or Specialist
  - Helps establish a medical history
  - Interview is followed by Physical Exam, Diagnostic Tests, and a Neurological Exam
- Neuropsychological Testing
  - Testing Cognition, Episodic Memory, and Executive Function
- Brain Imaging
  - Positron Emission Tomography (PET) to label amyloid
  - Magnetic Resonance Imaging (MRI) to detect changes in brain size

<sup>18</sup>F-AV-45 PET imaging of amyloid plaque



Magnetic Resonance Imaging (MRI)



# Tools used in Detection and Diagnosis Continued

- Cerebrospinal Fluid Tests
  - Detect the level of Amyloid (if less in the CSF, indicates that there is more in the brain) and Tau (if there is more in the CSF, indicates that that it has become destabilized within the brain)
- Blood Tests
  - Used in Diagnostic Testing
  - Can Identify Genetic Risk Factors
  - Can Identify Blood Biomarkers used to Predict Future Disease
    - Plasma Proteins
    - Molecules that Regulate Gene Expression
    - Fats
    - Still Relatively New/Used in Research Settings Only

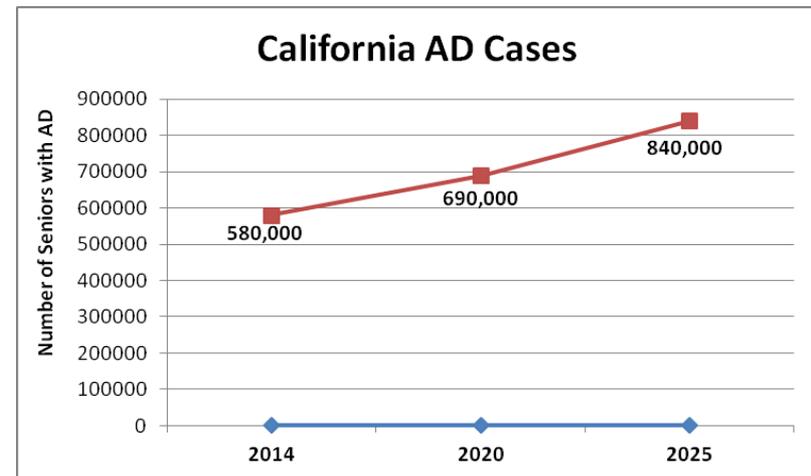
# California Workgroup on Guidelines for Alzheimer's Disease Management

- Treatment Recommendations:
  - Pharmacology to treat cognitive decline and memory loss
  - Appropriate structured activities for recreation and exercise
  - Nonpharmacological approaches to address changes in mood and behavior, followed by pharmacological approaches, if necessary
  - Treatment for comorbid (coexisting) conditions
  - End-of-life care

\*\*Please see the handout of the Guidelines

# Societal and Economic Impact

- Aging Population and Increase in Projected Cases
  - 45% increase in a little over a decade
  - Health disparities will significantly impact Latinos, African Americans, and Asians
  - AD is the 5<sup>th</sup> leading cause of death in CA.
- Unpaid Caregivers
  - In 2013, 1.5 million caregivers in California provided 1.7 billion hours in unpaid care, worth \$22 billion in value.
  - Emotional, Physical, and Financial Impacts
- Major Driver of Health Care Costs
  - Direct Care Costs in the U.S. (in 2010) was \$109 billion, higher than heart disease (\$102 billion and cancer (\$77 billion)



## Resources and Programs



- California Alzheimer's Disease Program
  - California Alzheimer's Disease Centers
  - Alzheimer's Disease and Related Disorders Research Fund and Research Awards
- Key Partners
  - Family Caregiver Alliance/Caregiver Resource Centers
  - The Alzheimer's Association
  - The Alzheimer's and Related Disorders Advisory Committee
  - Department of Aging

# California Alzheimer's Disease Program

- Established in 1984 through legislation to relieve the human burden and economic costs associated with Alzheimer's disease and related dementias, and to assist in ultimately discovering the cause, treatment, and prevention of these diseases.
  - **California Alzheimer's Disease Centers (CADCs)**
    - 10 university-based specialty clinics that provide diagnostic assessment to those with memory concerns
    - The CADCs also provide professional training to medical residents, postdoctoral fellows, interns, students, nurses, social workers and other health care/medical professionals.

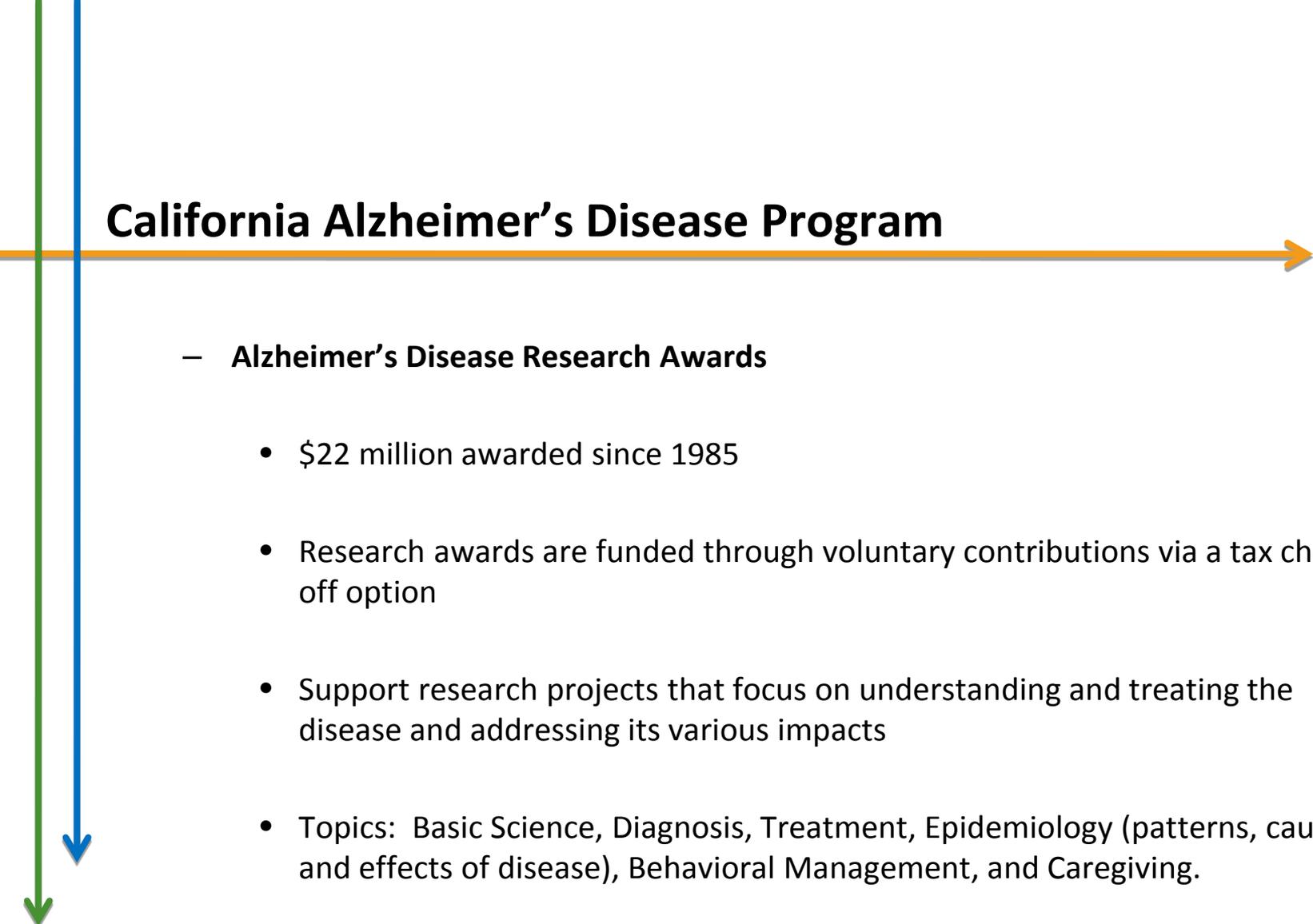


## Patient Care at the CADCs

- Patients may be self-referred or referred by a family member, agency, or physician
- Evaluation processes occur over 2-3 visits lasting 1-2 hours
- Family conferences are held with patients and their families to help better understand the diagnosis and treatment recommendations
- Patients continue to see their personal physicians for prescriptions and basic health care
- Patients have the opportunity to participate in research depending on their diagnosis; participation is voluntary



# California Alzheimer's Disease Program



## – Alzheimer's Disease Research Awards

- \$22 million awarded since 1985
- Research awards are funded through voluntary contributions via a tax check-off option
- Support research projects that focus on understanding and treating the disease and addressing its various impacts
- Topics: Basic Science, Diagnosis, Treatment, Epidemiology (patterns, causes, and effects of disease), Behavioral Management, and Caregiving.

## Family Caregiver Alliance/Caregiver Resource Centers

- Nonprofit [Caregiver Resource Centers](#) (CRCs), serve more than 14,000 families and caregivers of adults affected by chronic and debilitating health conditions including dementia, Alzheimer's disease, cerebrovascular diseases (such as stroke or aneurysms), degenerative diseases such as Parkinson's, Huntington's and multiple sclerosis, or traumatic brain injury (TBI), among many others.
  - \*\*Please see the handout with all the CRCs in California with the counties that they cover.

# The Alzheimer's Association



- The Alzheimer's Association is the world's leading voluntary health organization in Alzheimer's care, support, and research.
  - Enhances Care and Support
  - Advances Research
  - Advocacy

# The Alzheimer's Association Continued

*In Memory of the Founding President and Honorary Chair of the Alzheimer's Association  
Jerome H. Stone (1913-2015)*



## The Alzheimer's Disease and Related Disorders Advisory Committee

- The Committee was established by legislation in 1988, to provide advice and assistance to the Administration and the Legislature in addressing the program needs and priorities of the Alzheimer's population.
- Membership includes representation from researchers, medical and legal professionals, service providers, individuals and family members. Members serve on a voluntary basis and will be compensated for necessary travel expenses.
- The committee is currently requesting nominations for individuals to serve on the committee.
- Meetings are held quarterly and are open to the public. Participants can attend in-person at the Department of Aging (1300 National Drive, Suite 200) or via teleconference.
- Learn more at:

<http://www.chhs.ca.gov/Pages/AlzheimersDiseaseandRelatedDisordersAdvisoryCommittee.aspx>



## Department of Aging

- Administers a host of programs for seniors, caregivers, and adults with disabilities .
- To learn more about services within your area, please call 1-800-510-2020
- Some dementia-specific activities and resources include:
  - Dementia CalMediConnect Grant
    - Partnership with the Alzheimer’s Association to expand capacity to serve persons with dementia in participating managed care plans
    - Train care managers at health plans to provide better disease education and support to people with dementia and family members/caregivers
    - Identify and train key personnel to be a “Dementia Care Specialist”
    - Provide respite and other direct services
  - Alzheimer’s Day Care Resource Centers
    - Provide services to persons with Alzheimer’s disease and related dementias and their families and caregivers.
    - Services include respite care, training opportunities, education and informational resources, and support.



Thank you for your time!

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