



FACING ALZHEIMER'S DISEASE

A RESOURCE GUIDE
FOR PATIENTS & CAREGIVERS



FISHER CENTER FOR
ALZHEIMER'S
RESEARCH FOUNDATION
ALZinfo.org

Who We Are

The Zachary and Elizabeth M. Fisher Center for Alzheimer's Research Foundation was founded in 1995 by Zachary Fisher and David Rockefeller. Each year, the Fisher Center Foundation raises millions of dollars to fund Alzheimer's research and provide information and resources to the public.

The Foundation primarily funds scientific research at the Fisher Center Laboratory at The Rockefeller University, one of the largest and most modern scientific facilities in the world. Grants also support The Zachary and Elizabeth M. Fisher Alzheimer's Education and Resources Program at New York University Grossman School of Medicine and The Imagine Institute at The Institute of Brain and Spine in Paris, France.



Our mission is to understand the **causes** of Alzheimer's disease, improve the **care** of people living with it, and find a **cure**.

Our vision is working towards a future where Alzheimer's is nothing but a memory.

What is Alzheimer's Disease?

Alzheimer's disease is a neurological brain disorder that causes problems with memory, thinking skills, and behavior. It was named after a German physician, Alois Alzheimer, who first described it in 1906. Dr. Alzheimer was a pioneer in linking the symptoms of what we now call Alzheimer's disease to the abnormal clumps (amyloid plaques) and tangled bundles of fibers (neurofibrillary tangles or tau tangles) in the brain.

Memory loss is one of the earliest symptoms of the disease, along with a gradual decline of other intellectual and thinking abilities (called cognitive functions), and then changes in personality or behavior. There are seven clinical stages used to identify the progression of Alzheimer's. A description of each stage can be found here: www.alzinfo.org/understand-alzheimers/clinical-stages-of-alzheimers/.

Currently, there are more than six million Americans living with Alzheimer's. While scientists have made significant progress in understanding the disease, a cure has yet to be found. If you or a loved one is experiencing symptoms, it is important to seek a medical diagnosis as soon as possible. There are many causes for dementia symptoms, and early intervention can be helpful in determining how to treat or manage them.

Alzheimer's is the most common form of dementia.



What causes Alzheimer's Disease?

Scientists have made significant progress in understanding the possible causes of Alzheimer's disease, but countless questions remain. It is likely that multiple factors, both inherited and environmental, interact to cause the disease.

FAMILY HISTORY

Having a parent or extended family member with Alzheimer's increases your risk of developing the disease.

GENETICS AND ENVIRONMENT

The presence of beta-amyloid in the brain has been thought to be one of the main signifiers of Alzheimer's disease. For about 20 years, the gene known as APOE has been recognized as a risk factor. Thanks to the work of Dr. Victor Bustos and other scientists at the Fisher Center Laboratory, we now have a new culprit: a precursor of beta-amyloid called C99.

Many environmental factors may also increase risk. There is recent evidence that environment and experiences early in life may play a role in the development of Alzheimer's. Examples would be a serious head injury, lower levels of formal education, and lower socioeconomic status, although scientists are not sure why or how these various factors interact to produce the disease in some people but not others.

AGING

Old age does not cause Alzheimer's, however, it is a common known risk factor. Alzheimer's disease is most common in people 65 or older.

Alzheimer's vs Dementia

The terms Alzheimer's and dementia are often used interchangeably, but they have very different meanings. Dementia is a syndrome which describes a wide range of symptoms that impact a person's ability to perform everyday activities independently. Alzheimer's is a neurodegenerative disease that is the most common cause of dementia. With Alzheimer's, the brain can show signs of the disease before the person experiences any symptoms.

Dementia is the name of a group of symptoms that make it hard to remember, think clearly, make decisions, or even control emotions. It is important to note that dementia is not a disease per se, and the occurrence of dementia symptoms are caused by various conditions.

Dementia means "deprived of mind;" a term that covers memory loss, confusion, changes in personality, and a decline in thinking skills. It is usually irreversible unless it is caused by certain conditions such as vitamin deficiency, underactive thyroid gland, depression, or stress. In these cases, treating the underlying cause can reverse the dementia.



What Happens to the Brain with Alzheimer's?

A person with Alzheimer's disease gradually suffers memory loss and a decline in thinking abilities, as well as significant personality changes. These losses in cognitive function are accompanied by changes in the brain, including the build-up of amyloid plaques and tau—containing neurofibrillary tangles—which result in the death of brain cells and the breakdown of the connections between them.

Due to widespread brain cell death, several brain regions (such as the cortex) shrivel up, and fluid-filled spaces meant to cushion and protect the brain grow larger (see illustration below). The person loses their ability to communicate, recognize family and friends, and care for themselves. The person also loses their ability to think and reason, followed by difficulty in walking and bladder control.

Progression of Alzheimer's Disease



Healthy Brain



Mild Alzheimer's Disease



Severe Alzheimer's Disease

The brain is the most powerful organ in the body, and Alzheimer's disease has a devastating effect on its ability to function.



How is Alzheimer's Disease Treated?

RESEARCH

Until scientists better understand the causes of Alzheimer's disease, a cure will continue to elude us. While great progress has been made, there is still no effective treatment for the illness, and none that addresses the underlying disease processes. But there are drugs and non-drug treatments that may help with both cognitive and behavioral symptoms. Doctors can evaluate signs and symptoms to assess memory impairment and other thinking skills to help treat or manage symptoms.

EDUCATION

The Fisher Center Foundation's Alzheimer's Information Program is designed to provide education and disease awareness to the public. When the family and caregiver(s) of a person with Alzheimer's understands the disease and learns how to communicate and interact with the person in ways appropriate to the disease stage, they are better able to reduce behavioral problems and improve the quality of life for all involved.



Alzheimer's in the United States

Alzheimer's disease is becoming increasingly prevalent. According to a new analysis of U.S. Census data, the number of people with the disease is expected to triple in the next 40 years.

The successes of medical science have led to an unprecedented increase in the life expectancy of Americans. With this "graying of America," Alzheimer's disease looms as the most severe socio-medical problem our nation will face.

**EVERY
65 SECONDS**
someone in the United States
develops Alzheimer's disease



More than
6 million Americans have Alzheimer's today.

**16 billion hours of
Alzheimer's care**



Families and other caregivers provide nearly \$272 billion worth of unpaid care in a year in the U.S.

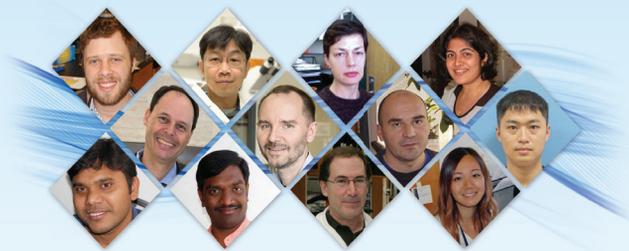


Medical and long-term care costs for the elderly with Alzheimer's disease and other forms of dementia are estimated to be at \$377,621 per individual in 2021 dollars.

Total healthcare costs are more than three times higher for people with Alzheimer's and other dementias than for other people age 65 and older.



Breakthrough Research to Find a Cure



The Fisher Center Laboratory of world renowned scientists' accomplishments include:

- Publishing studies that detail an advanced process that could help remove the toxic component in the brain called beta amyloid peptide. Several forms of beta amyloid peptide aggregates are associated with some of the disease symptoms such as memory loss.
- Publishing innovative findings reframing/redefining the beta-amyloid hypothesis. The researchers determined that a fragment called C99 of the protein APP is associated with selective death of vulnerable neurons in the brain. This new discovery will help us better understand how Alzheimer's disease attacks the neurons in our brains, and presents new pathways to target Alzheimer's research.
- Developing advanced technology that will accelerate Alzheimer's research by allowing scientists to analyze thousands of genes at once instead of one at a time, and identify pathways responsible for disease vulnerability.
- Building a drug-screening platform that dramatically speeds up the drug discovery process.

Information Program



Get additional Alzheimer's disease education, awareness and resources through our website, ALZinfo.org.

- Learn about the symptoms and stages of Alzheimer's disease.
- Discover treatment options for slowing down the progression of symptoms and managing the behavioral symptoms.
- If you are unable to find answers to your questions on our website, you can submit your questions to the experts.

alzinfo.org/research/ask-our-experts

Alzheimer's Research News You Can Use

Sign up for our free, bi-weekly e-newsletter, the most reviewed Alzheimer's and dementia news on the web.

alzinfo.org/news/e-newsletter

Preserving Your Memory®

Subscribe to our award-winning magazine. Get the latest on Alzheimer's research, caregiving advice, healthy recipes, and memory sharpening exercises.

alzinfo.org/pymmag

Caregiver's Corner

- Get caregiving information on long-term planning, home modification, cognitive stimulation, physical exercise, music and art therapy, and much more. alzinfo.org/treatment-care/caregivers-corner
- Use our updated "Resource Locator" to find physicians, specialists, home health agencies, nursing homes, hospice care, and other resources using a zip code. alzinfo.org/resource-locator

Memory Wall

Losing someone is devastating, however long or well-lived their life was. You can keep your loved one's memory alive by uploading a photo, bio and audio of them for yourself and others to treasure.

alzinfo.org/memory-wall





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