



WHY WE HAVE HOPE



“The emphasis on basic knowledge is absolutely critical. The tendency is to be driven by urgency which leads you to take any possible avenue, and that is a dangerous approach that leads to short-cuts, guesses, and applying investment dollars with no true underlying understanding. It also moves people away from the long-term research that is necessary.”

DAVID BALTIMORE, PH.D., NOBEL LAUREATE,
NOBEL PRIZE FOR PHYSIOLOGY OR MEDICINE

We Fund Basic Research
for Alzheimer's Disease



AN AGONIZING DISEASE

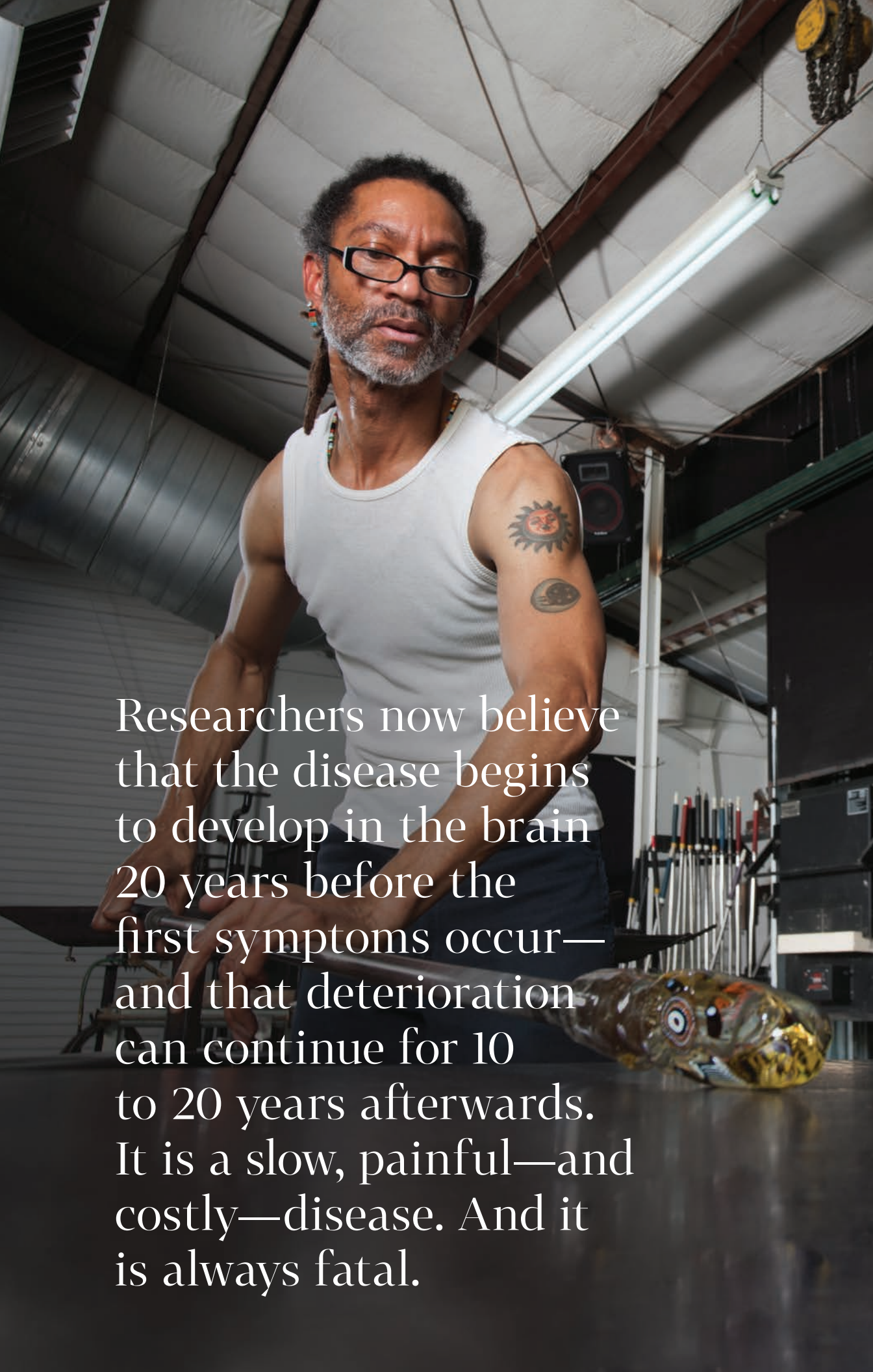
Too often, Alzheimer's disease is described as a simple loss of memory—a natural part of the human aging process. Both characterizations are wrong and harmful to those who are, and those who will become, afflicted with what is truly a dreadful disease.

The early symptoms of Alzheimer's are lapses with memory, at first infrequent and inconsistent. But over time, they become more profound.

As the disease progresses, new symptoms present themselves. Anxiety, fear, confusion, anger. Mood swings for no apparent reason. Impaired judgment. Difficulty with familiar—even simple—tasks, such as boiling water. Misplacing possessions.

But the damage wrought by Alzheimer's goes beyond such inconveniences of mild cognitive impairment. In later stages of the disease, mobility becomes limited. You forget to eat. You lose your ability to speak. Neurological deficits can result in heart attack, stroke, and other more common causes of death. The degradation of the brain manifests in many different ways.

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50

MILLION

The number of people with
Alzheimer's disease worldwide

6

MILLION

The number of people
with Alzheimer's disease
in the United States

250,000

The number of children between
the ages of 8—18 who are
providing care for someone with
Alzheimer's disease

66%

The percentage of people with
Alzheimer's disease who are women

2x

The rate of affliction for
African-Americans
compared to Caucasians

18

B I L L I O N

The annual number of unpaid hours of care provided to those with Alzheimer's disease

16

M I L L I O N

The number of caregivers providing unpaid care for those with Alzheimer's disease

\$321

B I L L I O N

The cost to the United States government for the care of Alzheimer's disease—in 2022

6th

Alzheimer's disease is the 6th leading cause of death in the United States

0%

The survival rate of Alzheimer's disease

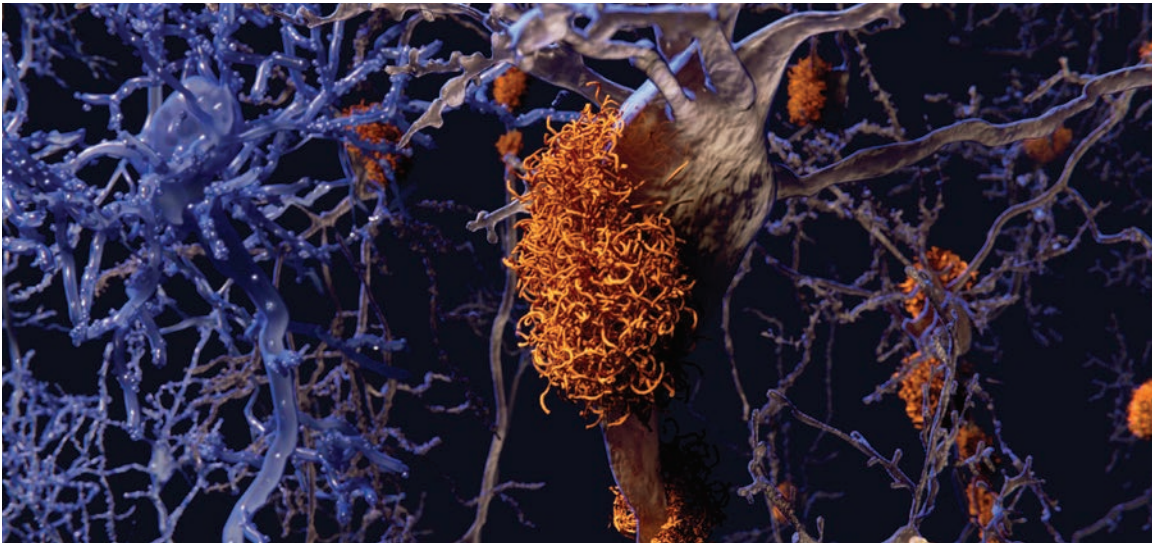
HISTORICAL PERSPECTIVE

Dr. Alois Alzheimer first discovered the disease over a century ago. He wrote about a patient who experienced loss of memory, paranoia, and other psychological changes. After her death, an autopsy documented unusual clumps in her brain, as well as significant shrinkage of brain tissue in and around the nerves.

For many decades, research into Alzheimer's stalled. Then, in 1974, the National Institute on Aging was established to develop a coordinated plan with Health, Education, and Welfare to address research in aging.

It was in the mid-1980's that progress toward an understanding of Alzheimer's finally began in earnest. In 1986, 80 years after the work of Dr. Alois Alzheimer, a team of researchers that included Rudy Tanzi, Ph.D., discovered the first Alzheimer's gene, confirming the theory that Alzheimer's has a basis in genetics. Continued investigations have increased our understanding of the brain as an extremely complex organ, with Alzheimer's the likely result of many contributing factors.





THE DISEASE PATHOLOGY

To over-simplify, Alzheimer's disease has 3 primary components: a buildup of abeta protein referred to as *Plaque bundles*; the changing composition of the neurons in the brain called *Tau Tangles*; and *Inflammation*.

The human brain has a natural cleaning system that goes to work while we sleep. While we're asleep, the microglia go through the brain and remove unwanted particles, including some proteins. In people with Alzheimer's disease, however, there is buildup of protein into plaque bundles over time.

The changing chemistry of the tau of some neurons results in what is called a "tangle." These tangles trap some of the plaque bundles and may also create blockages of normal neurotransmitters—signals in the brain that inform the human experience of memory and other cognitive ability.

Finally, there is inflammation in the brain. When combined with plaque and tangles, it appears as if there is acceleration in the decline of cognition, and eventually, other neurological functions.



Our focus is on providing proof-of-concept funding to researchers with breakthrough ideas—not incremental shifts in our understanding of the disease, but big, bold ideas.

CURE ALZHEIMER'S FUND

In 2004, 3 families—the McCances, the Morbys, and the Rappaports—founded Cure Alzheimer's Fund. They agreed to take a dramatically different approach from the standard practices of funding research, and established several fundamental principles for the organization:

- Mission:** Fund research with the highest probability of preventing, slowing, or reversing Alzheimer's disease.
- Researchers:** Identify the world's greatest researchers with the most innovative ideas, and have their grant proposals reviewed by a consortium of their peers.
- Rapid Approval:** Minimize bureaucracy with a rolling admissions process and rapid turnaround for approvals.
- Collaboration:** Require that funded scientists collaborate and meet regularly to discuss research projects.
- 100% to Research:** The Board of Directors would cover all overhead expenses of the non-profit organization so that 100% of all donations would go to research.

OUR RESEARCH FOCUS

In order for a researcher to obtain funding for a scientific theory from the National Institutes of Health (NIH), the researcher must provide data that demonstrates that the theory is valid. Without data, the NIH is unlikely to fund the work—even for the most seasoned and accomplished scientists.

These researchers need funding for basic research. Basic research is not easy; in fact, it is highly complex. But it is critical to progress.

This is where we provide an important source of funds to the scientific community. Our focus is on providing proof-of-concept funding to researchers with breakthrough ideas—not incremental shifts in our understanding of the disease, but big, bold ideas.

And there is no shortage of big ideas for this very complex disease of the brain.

MOVING CLOSER TO A CURE

Tremendous progress has been made in our understanding of Alzheimer's disease. Cure Alzheimer's Fund has played an enormous role in the advanced understanding of the disease.

Early in the history of Cure Alzheimer's Fund, a grant was provided to identify genes involved in Alzheimer's disease. This project resulted in the discovery of 5 new genes, and was recognized by *TIME* Magazine as one of The Top 10 Medical Breakthroughs of 2008. With continued investigation, we now understand that there are over 100 genes that play a role in Alzheimer's disease. Having any one

of these genes is not a guarantee that one will get the disease. But, knowing that the genes exist—and identifying the individual role of each—will help scientists to evaluate future potential therapies.

In addition to genetics, there are other contributing factors to the development of Alzheimer's pathology. These include diet, activity levels, sex-based differences, environmental factors, and the microbiome, to name just a few. Today's research is focused on understanding all contributing factors so that therapeutic solutions for prevention, slowing, or reversing the disease can be developed.





In 2014, a major development was announced. Through a grant obtained by Cure Alzheimer's Fund, Drs. Rudy Tanzi and Doo Yeon Kim created ALZHEIMER'S IN A DISH—a lab technology that allows for the replication of Alzheimer's disease pathology in a petri dish. *The New York Times* characterized the discovery as “a game changer”; *TIME* Magazine recognized Dr. Tanzi as one of The 100 Most Influential People in 2015; and the Smithsonian awarded Drs. Tanzi and Kim with the American Ingenuity Award. This

tool allows for acceleration of research in the lab as well as evaluation of existing drugs to determine if any may be effective in the fight against Alzheimer's.

In 2016, *The New York Times* described the result of a grant by Cure Alzheimer's Fund as “provocative new research.” The research showed that the abeta protein that forms plaque bundles in the brain might also play a protective role in the healthy brain.

OUR WORK CONTINUES

There have been many discoveries. There will be many more. Our researchers believe that because of the accelerated understanding of the disease, we are now at a tipping point. We are all more optimistic than ever before. We know that it is just a matter of time—and funding—before the first therapy will become available.

Cure Alzheimer's Fund has been fortunate to have thousands of donors make contributions of all sizes to support our cause. We are grateful to each and every donor, and will not stop our support of groundbreaking research until we are able to prevent, slow, or reverse Alzheimer's disease.

We appreciate your consideration of contributing to the funding of research into Alzheimer's disease.

There are many ways to help:

- Individual Donations:** through our website (www.CureAlz.Org), electronic funds transfer (EFT), check, or call 781-237-3800
- Foundations and estate planning**
- Asset Donation:** stocks—cars—boats
- Employee matching programs**
- Planned giving and bequests**
- And more.



We Are Optimistic.
We Are Driven.
Our Researchers Are
Relentless.

And, We *Will* End
Alzheimer's.

Cure Alzheimer's Fund is a non-profit dedicated to funding research with the highest probability of preventing, slowing, or reversing Alzheimer's disease. Our Board of Directors and Trustees pay for all overhead expenses: 100% of your donation will go to research.

INFORMATION ON ALL FUNDED PROJECTS CAN BE FOUND AT
WWW.CUREALZ.ORG



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Cure Alzheimer's Fund is a "doing business as" name for the Alzheimer's Disease Research Foundation,
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