

# ALZHEIMER'S

## FROM **A** TO **Z**

Despite afflicting more than **5 million U.S. patients** – with a sharply expanding number of new diagnoses each year – Alzheimer's disease remains a mystery to many Americans. In order to spread the word about Alzheimer's disease and build awareness of the devastation it exacts each day, **below is a guide to Alzheimer's fundamentals, from A to Z!**

### **A** Alois Alzheimer

In **1906**, **Dr. Alois Alzheimer** first lectured on the case of a woman who presented "an unusual disease of the cerebral cortex," which resulted in memory loss, disorientation, and hallucinations, before she ultimately passed away at only **55 years** of age.

### **B** Beta-amyloid plaques

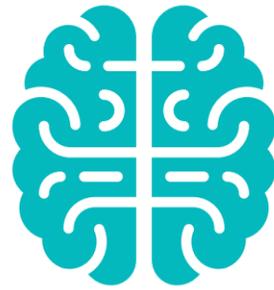
Autopsy studies in Alzheimer's patients demonstrate a buildup of "**beta-amyloid plaques**." In excess, these "sticky" amino acid particles clump together between brain cells, blocking critical communication between synapses and causing cell death.

### **C** Caregivers

According to the Center for Disease Control and Prevention, each year, **15.9 million** Americans provide more than **18.1 billion** hours of **unpaid care** for family and friends with Alzheimer's disease and related dementias.

### **D** Dementia

Alzheimer's disease is the most common cause of **dementia**, an umbrella term that describes a symptomatic loss of mental abilities.



### **E** Epidemic

Alzheimer's disease stands to be one of the definitive public health challenges of the 21st century, as its rate of incidence is sharply on the rise. Without a medical breakthrough, by **2050**, **13.5 million** Americans are expected to suffer from Alzheimer's disease.

### **F** Four (out of 127)

Since **1998**, only **4 out of 127** experimental compounds in clinical trials for Alzheimer's disease received approval for use. Alzheimer's disease poses exceptional and unique challenges when it comes to drug development.



### **G** Genetics

While the cause of Alzheimer's is still not fully understood, it is widely believed that **genetics, environment, and lifestyle** can all play a factor in its occurrence. Today, there is believed to be a strong genetic association with early-onset Alzheimer's especially.

### **H** Healthcare Costs

Aside from the devastating toll Alzheimer's disease takes on patients and their loved ones, it poses unprecedented challenges to the **cost of our overall healthcare system**. Without any medical breakthroughs, total cost of care will eclipse **\$1 trillion by 2050**, the majority of that being subsidized by Medicare.



### **I** Immunotherapy

One of the most powerful agents in the fight against Alzheimer's disease may turn out to be our own immune systems. **Training and activating the immune system** has shown tremendous potential to someday slow, alter, or possibly prevent the path of the disease.



### **J** Join

Many people wonder what they can do to help us defeat Alzheimer's disease. The answer is simple: **join in!** To find a way to get involved wherever you live, visit the Alzheimer's Association's website.

### **K** Knowledge

While we still have more questions than answers regarding the origins of Alzheimer's disease, **we know so much more today than ever before**. Thanks to the efforts of many people, both inside and outside the scientific community, each progressive day represents a new height in our understanding of this devastating disease.

### **L** Long-term Care

As Alzheimer's disease advances and patients lose their ability to independently function, many families face no choice but to find residence for their loved one in an expensive **long-term care facility**. On average, a semi-private room in a nursing home costs more than **\$80,000** annually.



### **M** Modifying treatments

There are two kinds of treatments for any disease: symptomatic treatments that address the symptoms of a disease but not its underlying cause, and **disease modifying treatments** that aim to alter, prevent, or eliminate the disease entirely. In Alzheimer's disease, developing both types of treatments is critically important.



### **N** Nutrition

While no one cause has been identified for Alzheimer's disease, there is good reason to believe that maintaining proper **nutrition** may at least help fend off its arrival.

### **O** Opportunity

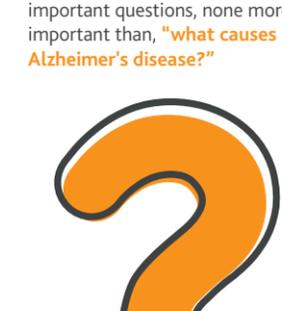
Alzheimer's disease stands to be one of our defining 21st century public health challenges. We have an incredible **opportunity** to save millions of families from the tragedy of personal suffering, and to avert a financial disaster as a nation.

### **P** Patient Groups

Thanks to **groups** like the **Alzheimer's Association**, **LEAD Coalition**, and **UsAgainstAlzheimer's**, there are thousands of individuals who spend personal time raising much needed money for research, building awareness, and generating public support for Alzheimer's patients and families.

### **Q** Question

Over the coming years, Alzheimer's researchers around the world will be concentrated on a handful of important questions, none more important than, "**what causes Alzheimer's disease?**"



### **R** Research

Alzheimer's disease is the target of a significant amount of **research** within the pharmaceutical industry as well as at government and academic research institutions, and Lundbeck is helping lead the charge of this effort.



### **S** Stigma

An unfortunate consequence of Alzheimer's disease, for many patients, is the **stigma** associated with the disease. According to Alzheimer's Disease International (ADI), **three-quarters** of people living with dementia believe that the disease is perceived negatively.

### **T** Tau protein

One of the key processes that either causes Alzheimer's disease or amplifies its effects is the disintegration of tau protein in the brain. **Tau protein** provides essential structure to brain cells, allowing for the healthy movement of important nutrients.

### **U** Understanding

The greatest challenge we face in developing treatments for Alzheimer's disease is **understanding** where it begins and how it evolves.

### **V** Volunteer

A breakthrough in the treatment of Alzheimer's disease will be largely powered by the **volunteer efforts** of patients, caregivers, friends and family who build awareness and raise resources for much needed research about the disease.



### **W** World Alzheimer's Month

September marks the 5th annual "**World Alzheimer's Month**," an effort spearheaded by Alzheimer's Disease International to raise awareness of the devastation exacted by this disorder, and to challenge and defeat its associated stigma. To participate in World Alzheimer's Month, share a picture or favorite memory of a loved one with the hashtags **#RememberMe** and **#WAM2016**.



### **X** X-Ray

**X-Rays** and **biopsies** can identify a tumor, a blood test can detect HIV, or a cholesterol test can be easily employed to warn of heart disease, but there is no easy way to look inside the brain and detect signs of Alzheimer's.



### **Y** You

**You** have a stake in Alzheimer's disease, because if it hasn't already touched your life in a personal way, the odds are overwhelming that it will in your lifetime. Without that breakthrough, Alzheimer's is only going to visit more families as its rate of incidence increases.

### **Z** Zero

Alzheimer's disease is America's only **top 10 leading cause of death** with **zero cures**. Fortunately, many leading pharmaceutical companies, including Lundbeck, are aggressively pursuing new treatments from a variety of angles that aim to either cure this ugly disease, or at the very least manageably slow its path while reducing its symptoms.

