Risk Factors						Prevention		
Risk factors are traits, conditions, or habits that						∃ Today there is no proven way to prevent		
 increase your chances of developing a disease. Disease outcomes are often the result of multiple risk factors. 						Alzheimer's disease. The strongest evidence to date suggests you may be able to lower your risk of Alzheimer's disease by reducing your risk of		
						heart disease. Important factors that may be involved include high blood pressure, high choles- terol, diabetes, and obesity.		
• unmodifiable				modifiable		quality of life		
in Unmodifiable factors are factors that cannot be changed.	Unmodifiable factors are factors that cannot be			n Modifiable factors are factors that can be changed to improve health.		Decreases symptoms.		
aging	• genetics	• being female	head trauma + brain injury	other diseases and	inflammation may be controlled by	↓ protective factors	Diagnosis	
Alzheimer's disease is not a normal part of aging;		Women who carry the ApoE4 gene, in particular,	Repetitive head injuries and brain trauma can lead	Risk factors for other diseases impact		G Protective factors are anything that prevents or	Early diagnosis of Alzheimer's disease is critical;	
but increasing age is the single largest risk factor of the disease. Why risk rises so dramatically with age is not well understood.	udes :	appear to be at higher risk. The reason for the increased risk is not well understood.	to Alzheimer's disease. Head injuries also have some of the same pathologies as Alzheimer's disease.	Alzheimer's disease.		reduces vulnerability for the development of a disorder.	changes in Alzheimer's disease can begin up to 20 years before diagnosis. Today, there is no : single test to detect Alzheimer's disease. The	
						One positive lifestyle choice can influence and encourage other positive lifestyle choices.	diagnostic process, based on symptoms, can require a lengthy elimination process over a period of months and years.	
	 deterministic genes 	risk genes		• Vascular disease	Type 2 diabetes	and ·····	• awareness leads to	medical search can lead to diagnostic proce
	n Directly cause Early-onset Alzheimer's disease.	increase the likelihood that a person with the gene (or genes) will develop a disease.		risk facto	caused by		бу	to find
				's inclu	insulin resistance can be lowered through		patient + family members	<pre>information + resources</pre>
				d es 	Insulin resistance is a condition in which the natu- ral hormone insulin becomes less effective at lowering blood sugars.		o bserve	
		•••••••••••••••••••••••••••••••••••••••	······		Insulin resistance causes a buildup of blood		can be a Smack moment	
	Amyloid precursor protein 및 Located on Chromosome 21.	Apolipoprotein (ApoE)	new gene variants	sedentary lifestyle	sugars in the brain.	physical activity	cognitive change can lead to consultation with	primary care physician may refer to a ······
		α S S S	Researchers have recently identified new gene variants that are linked to the development of Alzheimer's disease Some are involved with cho- lesterol and others are linked to inflammation or the transport of molecules inside cells.	eads to	···▶ can be lowered through ·····	ncreases ···	an lead to .	egins
	Presenilin-1 (PS1)	Alleles	CR1	high blood pressure		BDNF		initial investigations can lead to secondary inves
	and Located on Chromosome 14.	n One of two or more common forms of a gene.	On Chromosome 1.	May damage blood vessels in the brain.		Brain derived neurotrophic factor supports the survival of existing neurons and encourages the	▼ 1•	ConstructionOr to no diagnosis ►2Psychiatric AssessmentConstructionor to misdiagnosis ►3Test to rule out other orConstructionor to MCI ►4Test to rule out other or
		des	On Chromosome 8.			growth of new ones.	no action result of stigma fear	
	• Presenilin-2 (PS2)	 Apolipoprotein E e4 (ApoE4) 	PICALM	 high cholesterol 	▶ can be lowered through	÷ cognitive reserve	denial	office examination
	Located on Chromosome 1.	The largest known risk factor for Alzheimer's disease. ApoE4 is involved in metabolizing cholesterol.		chan May inhibit ability to clear beta-amyloid an creation in the brain.				 Patient physical Family history Medical history
			On Chromosome 2.	eases t				- Medical history
		 Apolipoprotein E e3 (ApoE3) 	MS4A7	ਡ obesity		···▶ diet ∢·····		Hab tests + surveys (to rule out other causes)
		and	On Chromosome 11.	Creates fatty tissue that produces hormones resulting in inflammation.		and		
			CD33					 Depression Psychosis Delirium Parkinson's disease Thyroid issues Vitamin B-12 deficiency
		 Apolipoprotein E e2 (ApoE2) 	On Chromosome 19.	imited formal education (8 years	s or less)	Hes higher education		- Thyroid issues - Vitamin B-12 deficiency
			On Chromosome 6.	≦ S May decrease cognitive reserve.				★
			ABCA7	relate		uences		medication inventory
			On Chromosome 19. EPHA1	socioeconomic factors		environment		mental status examination psychiatric assessment
			On Chromosome 7.	with		and		
				↓ [®] tobacco exposure ∢	lowe	ers stop smoking stress management sleep quality		
				Interferes with blood and oxygen flow to the brain.		stress management		

including the arts and sciences

treatments

research data 🖡

disease standards

• perceptions can include ····

- and
- private sector
- **nn**
- government

conducts The Arts and S work together i and public outr tion of Alzheim	ciences, Private Sector, and Governmen in the public interest through consortiu each projects to change public percep- er's disease, raise funding, support encourage citizen participation.				
Pesearch ca results in caregiving		••• Clinical trials are a part of the ••••• 175 Alzheimer's disease clinical trials are active in the United States today.	Intersection of the second	ess can lead to 3 drugs become	
Such as: - Center for Dis - Food and Druc - National Instit - National Inst - US Departmen - Administra	At creates standardizes funds research ▶1 monitors drug development process approves drugs ▶3 Sease Control (CDC) g Administration (FDA) tute of Aging (NIA) stitute of Health (NIH) nt of Health and Human Services of Veteran Affairs		> legislation Such as: - National Alzheimer's Project Act (N (Bill passed by Congress)	NAPA)	
5 non-profit a (NPOs) Such as:	agencies form ····· create ····· fund research ►1	•	 Such as: Alzheimer's disease Centers The Alzheimer's Project International Group on Alzheimer's Project (GAP) Alzheimer's Disease Neuro Imaging Initiative (ADNI) National Cell Repository for Alzheit Disease (NCRAD) Alzheimer's Disease Genetics Cons 	g mer's	·······
has lobbies private incluc funds partn	Government ►4			genome service agencies	

imaging techniques -

diagnostic tools

genomic +

phenotypic data sets to facilitate research >1

Symptoms

by the time the first symptoms of Alzheimer's disease appear. Symptoms, order of appearance, and duration **–** of steps is different for each person. In most cases, Alzheimer's disease progresses slowly, over a 7- to 10-year period.

80% of the damage to the brain has already occurred

.... genes

..... stigma

stages ca

cognitive decline Includes: - Memory loss - Executive Function decline - Impaired visuospatial abilities - Impaired language function - Changes in behavior and personality - Decline in physical abilities

in A transitional state from healthy to diseased, that is still being defined. People with MCI are more likely to develop Alzheimer's disease. memory problems indicated by Greater than those expected for age. Changes in behavior or personality are not indicated.

Mild Cognitive Impairment can lead to Early Alzheimer's leads to Can continue for 2–4 years. Most people are diagnosed in this phase. recent memory loss

communication difficulties functional changes cognitive changes

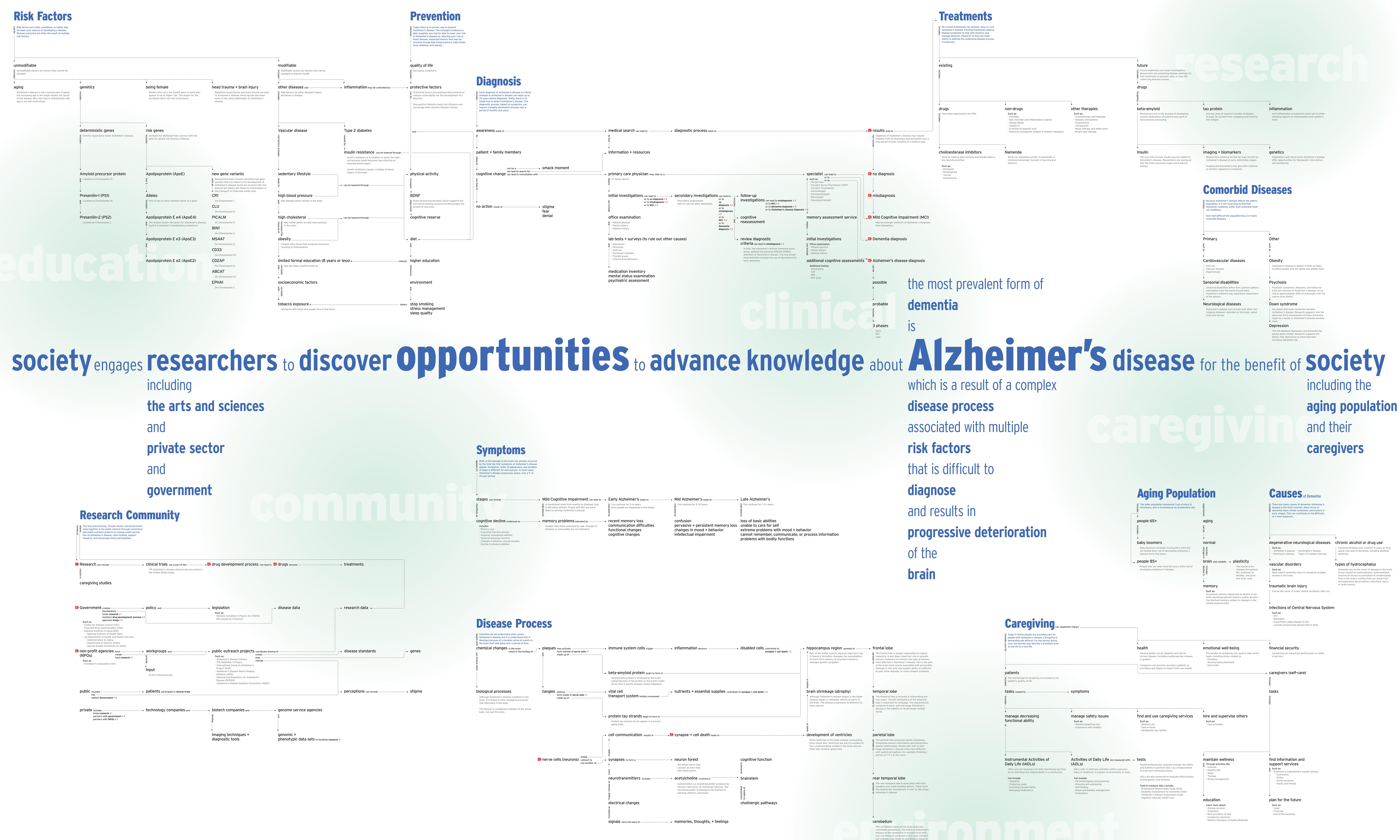
Mid Alzheimer's leads to -🛱 Can continue for 2–10 years. confusion pervasive + persistent memory l changes in mood + behavior intellectual impairment

Disease Process

Scientists do not understand what causes Alzheimer's disease, but it is understood that it develops because of a complex series of events i

he brain that take place ov	ver a period of time.						
emical changes	in the brain	→ plaques		re cells ►1	•••	immune system cells trigger	► inflammation
		•			••••	beta-amyloid protein begin to form in Amyloid beta protein is produced by the brain; overproduction of the protein or the brain's inabil- ity to clear it quickly enough causes imbalance.	
Ological processes Although Alzheimer's disease manifests in the orain, it is linked to other biological processes hat take place in the body.		tangles	destroy ·····		1	vital cell	nutrients + es
			form inside of nerve of			transport system inhibits movement	
The disease is considered a ody-not just the brain.	a disease of the whole					protein tau strands begin to form in	
						Protein tau strands do not appear in a normal aging brain.	
					•••	cell communication results in	synapse + cel
				inhibit		enable	
		Le nerve ce	ells (neurons)	connect to one another at ······	••••	Synapses to form a	 Neuron forest 100 billion nerve cel connect at more that 100 trillion points.
						neurotransmitters includes	→ acetylcholine
						trigger release of	Acetylcholine is a neurons referred to neurotransmitter is learning, memory, a
						electrical charges	
						coded as	

signals form the basis of ...



mid- to late-stage Alzheimer's disease.

