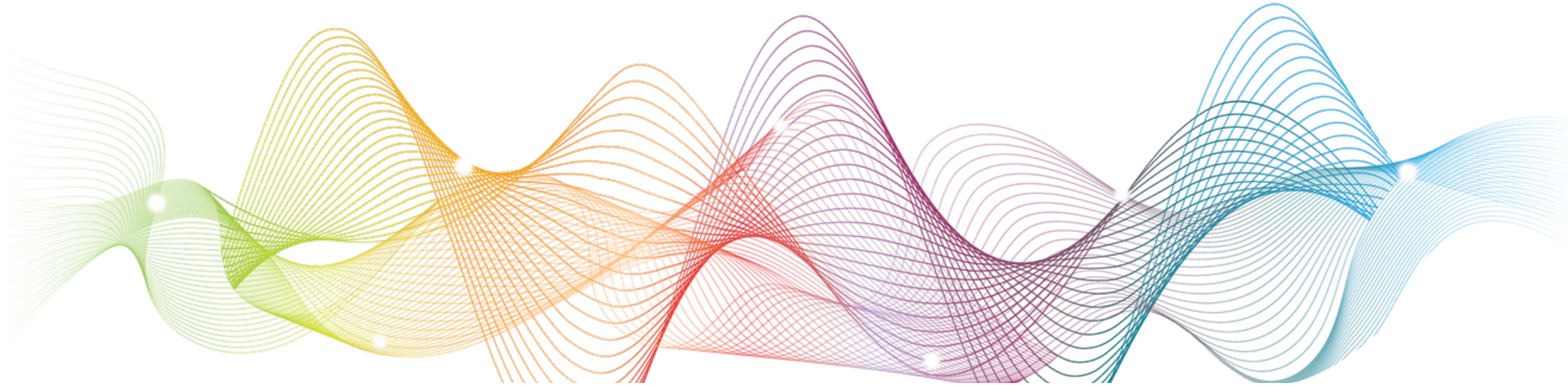
Grey Matters

Precision Brain Health Centers

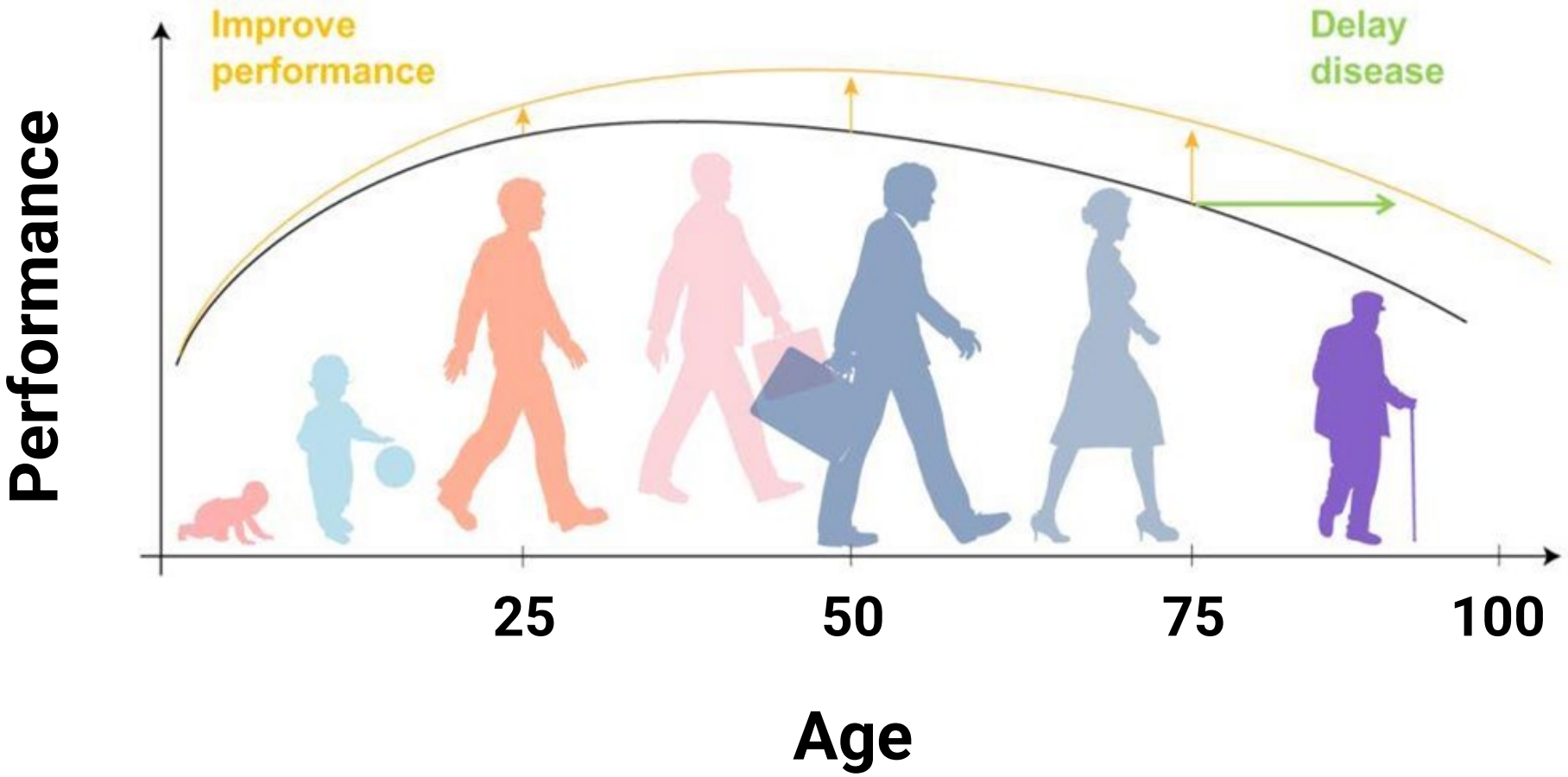
A comprehensive clinical program designed to delay, prevent, or reverse cognitive decline built on the Bredesen Protocol.



Outline

- What is Brain Fitness and why does it matter?
- What exactly does the brain do?
- What is Dementia and how does it happen?
- Who is Dr. Dale Bredesen?
- What is the Bredesen Protocol?
- Why does the Amyloid Precursor Protein matter?
- What are the many causes of Dementia?
- What can we do to prevent and even reverse Dementia?

Why Brain Fitness Matters



Grey Matters
Precision Brain Health Centers

The Human Brain - Alzheimer's Association



Cerebrum
Thinking, planning
Remembering, speech

Cerebellum
Balance, coordination

Brain Stem
Automatic functions
Digestion, breathing

Grey Matters
Precision Brain Health Centers

Dementia

A chronic or persistent disorder of the mental processes caused by brain disease or injury and marked by memory disorders, personality changes, and impaired reasoning.

Dementia is a general term for loss of memory and other mental abilities severe enough to interfere with daily life. It is caused by physical changes in the brain. Alzheimer's is the most common type of dementia, but there are many kinds.

Common forms of Dementia



- Alzheimer’s Dementia
- Vascular Dementia
- Lewy Body Dementia
- Frontotemporal Dementia
- Parkinson’s Dementia
- Mixed Dementia

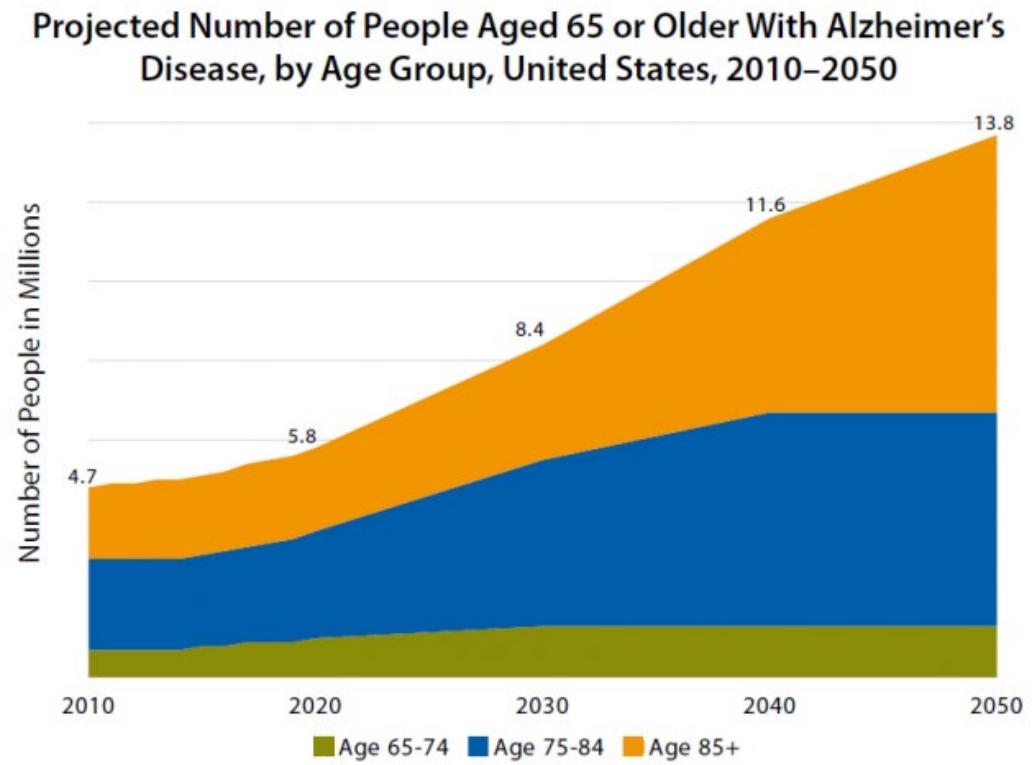
Grey Matters
Precision Brain Health Centers

Mixed Dementia - Memory and Aging Project Study

Long-term cognitive assessments followed by eventual brain autopsy:

- 94% of participants who were diagnosed with dementia were diagnosed with Alzheimer's. The autopsies of those diagnosed with Alzheimer's showed that 54% had coexisting pathology.
- The most common coexisting abnormality was previously undetected blood clots or other evidence of vascular disease.
- Lewy bodies were the second most common coexisting abnormality.

Alzheimer's Prevalence - U.S.



Source: Created from data in Hebert LE, Weuve J, Scherr PA, Evans DA. Alzheimer disease in the United States (2010–2050) estimated using the 2010 Census. *Neurology*. 2013;80(19):1778–1783.

- Growing rapidly as population ages - CDC estimates 13.8 million by 2050.

Dr. Dale Bredesen

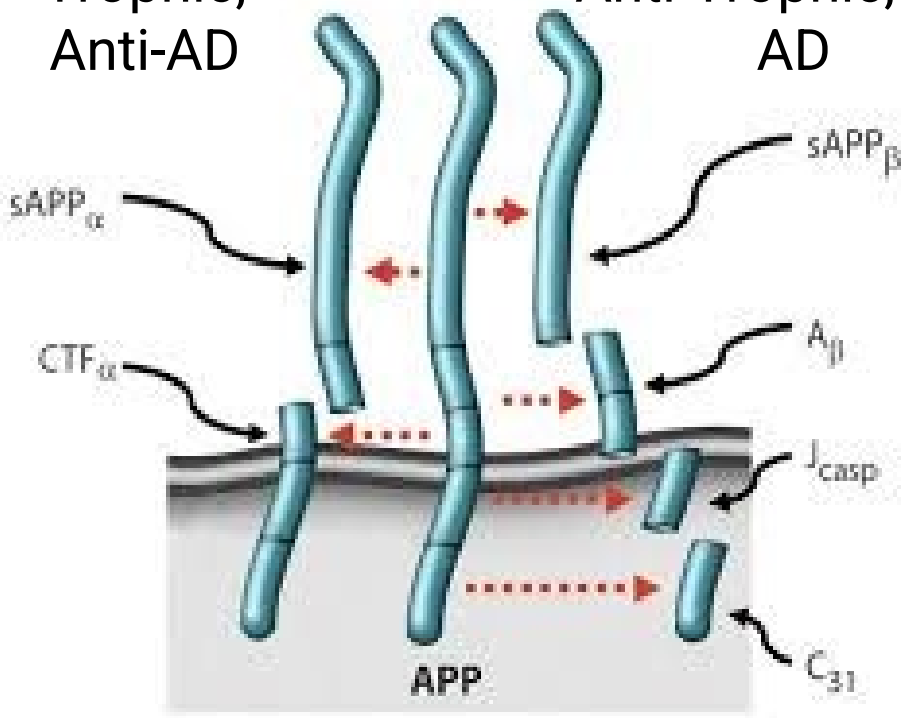
- Graduated from California Institute of Technology
- M.D. from Duke
- Residency at UC San Francisco
- Researched Alzheimer’s for over 30 years



Amyloid Precursor Protein

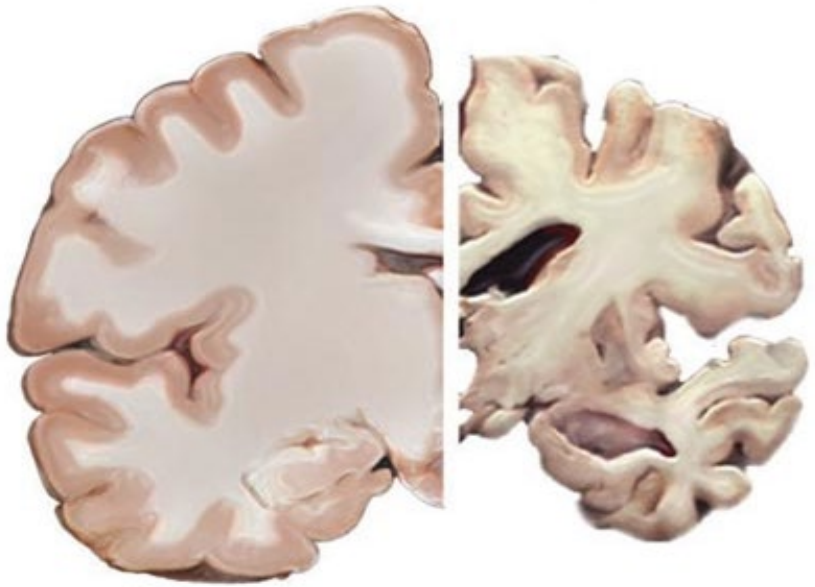
Trophic, Anti-AD

Anti-Trophic, Pro-AD



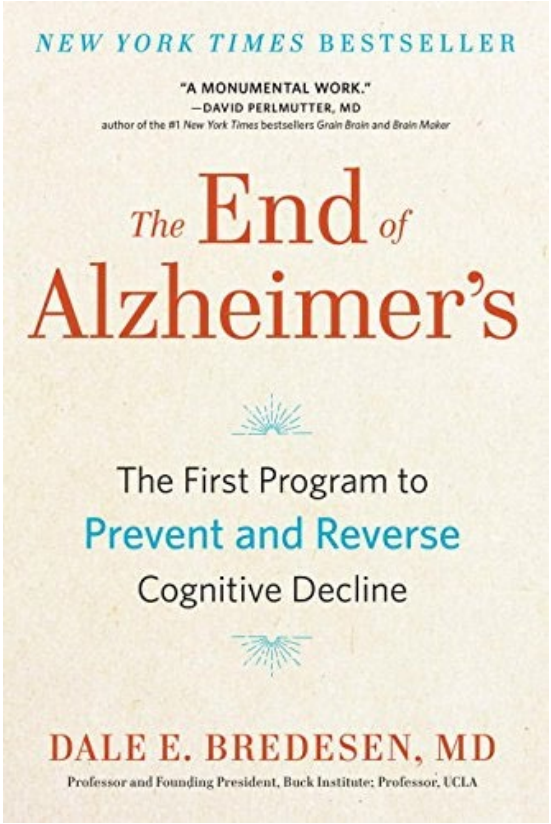
Healthy Brain

Severe AD



The Bredesen Protocol: Reversal of Cognitive Decline in Alzheimer's Disease

- Identifies various subtypes of Alzheimer's Disease
- Inflammatory, Glycotoxic, Trophic, Toxic, Trauma subtypes
- Addresses the individual with a personalized plan
- Cognoscopy – Identify Problems early and treat preemptively
- Treating the Root Cause, Diet, Lifestyle, Supplements

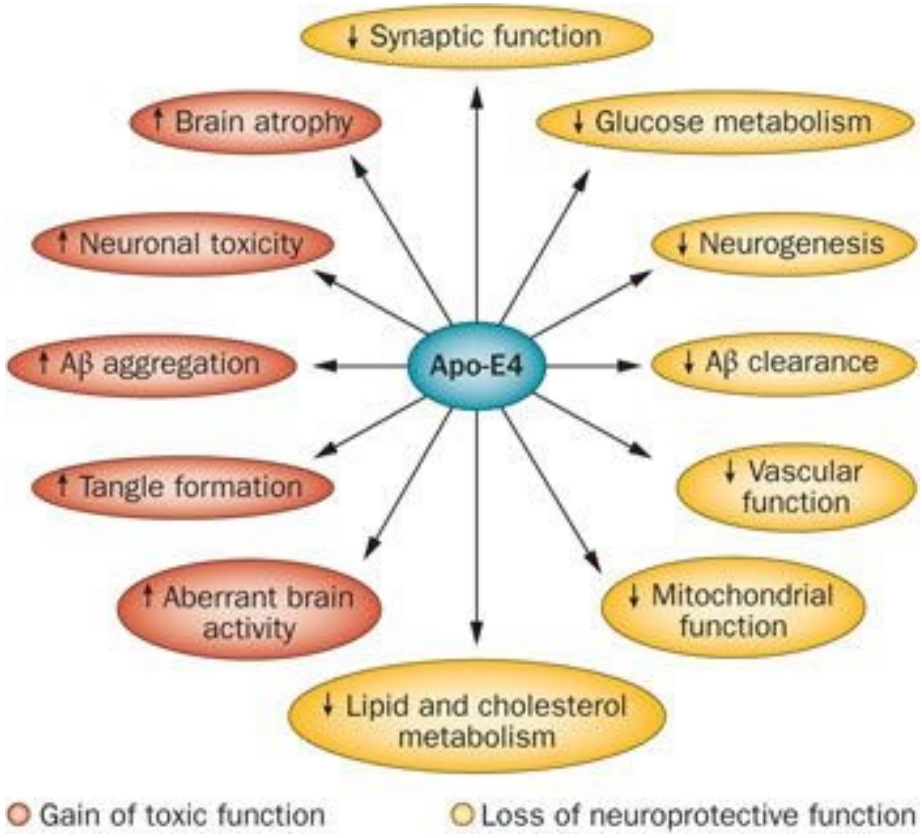


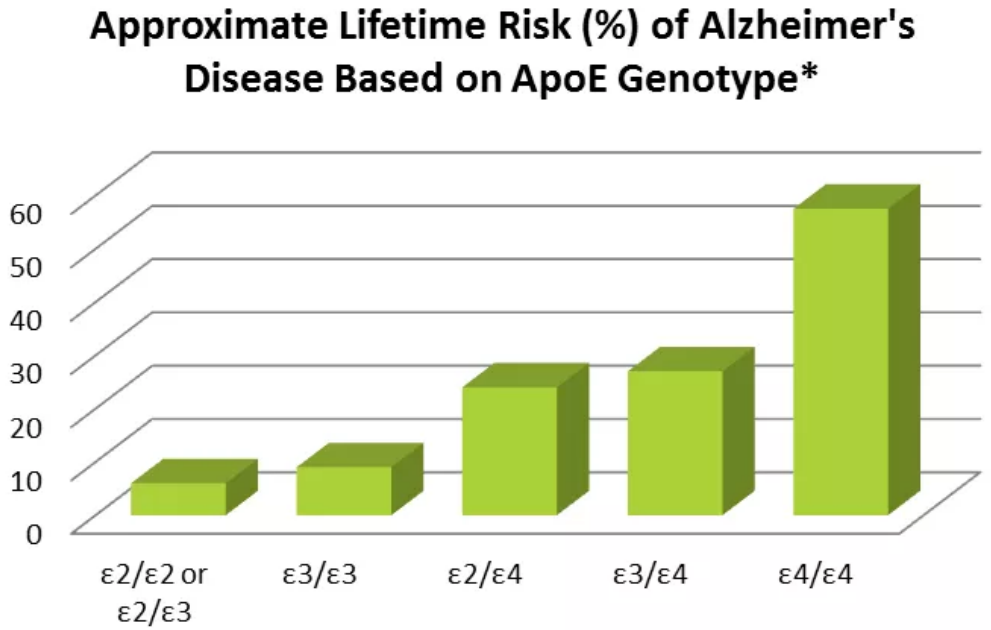
Grey Matters
Precision Brain Health Centers

Dale E. Bredesen,1,2 Edwin C. Amos,3 Jonathan Canick,4 Mary Ackerley,5 Cyrus Raji,6 Milan Fiala,7 and Jamila Ahdidan8

Aging (Albany NY). 2016 Jun; 8(6): 1250–1258.

ApoE Gene and Alzheimer's Disease





Grey Matters
Precision Brain Health Centers

Inflammatory, Trophic, and Toxic Substances



Grey Matters
Precision Brain Health Centers

Alzheimer's Disease - Type 3 Diabetes?



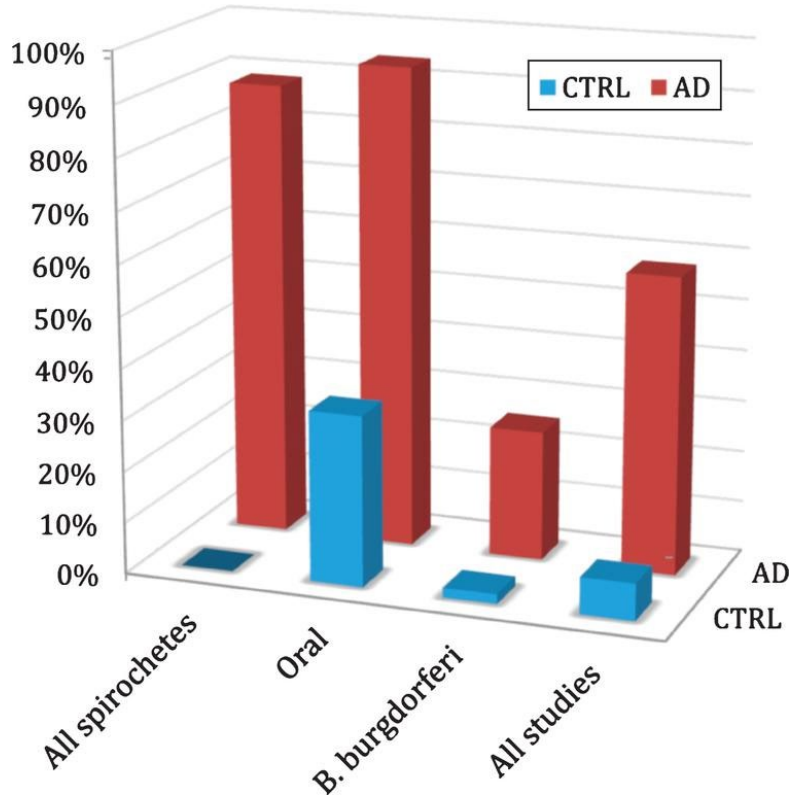
80% of people with Alzheimer's have insulin resistance or type 2 diabetes



Grey Matters
Precision Brain Health Centers

Infections and Alzheimer's Disease

- Herpes Virus
- Lyme Disease
- Oral Bacteria
- H. Pylori



Grey Matters
Precision Brain Health Centers

Polymicrobial Infections in Brain Tissue from Alzheimer's Patients D. Pisa et al Scientific Reports 2017 (7) 5559

Heavy Metal Toxicity



Grey Matters
Precision Brain Health Centers

Mold Toxin and Alzheimer’s Disease

Inhalational Alzheimer’s & Mold Illness



Grey Matters
Precision Brain Health Centers

The Perfect Alzheimer's Drug Would:

Reduce APP β-cleavage, reduce γ-cleavage, increase α-cleavage, reduce caspase-6 cleavage, reduce caspase-3 cleavage, prevent oligomerization, increase neprilysin, increase IDE, increase microglial clearance of Aβ, increase autophagy, increase BDNF, increase NGF, increase netrin-1, increase ADNP, reduce homocysteine, increase PP2A activity, reduce phospho-tau, increase phagocytosis index, increase insulin sensitivity, improve axoplasmic transport, enhance mitochondrial function and biogenesis, reduce oxidative damage and optimize ROS production, enhance cholinergic neurotransmission, increase synaptoblastic signaling, reduce synaptoclastic signaling, improve LTP, optimize estradiol, progesterone, E2:P ratio, free T3, free T4, TSH, pregnenolone, testosterone, cortisol, DHEA, and insulin, reduce inflammation, increase resolvins, enhance detoxification, improve vascularization, increase cAMP, increase glutathione, provide synaptic components, optimize all metals, increase GABA, increase vitamin D signaling, increase SirT1, reduce NFkB, increase telomere length, reduce glial scarring, enhance repair, etc.

Dale Bredesen 2014

Drugs for Alzheimer’s Disease

Thus far unfruitful.

Removing the Amyloid Plaques doesn’t help and in many cases makes the patient worse.

Vitamin E, Antioxidants vs. Saturated / Trans Fats

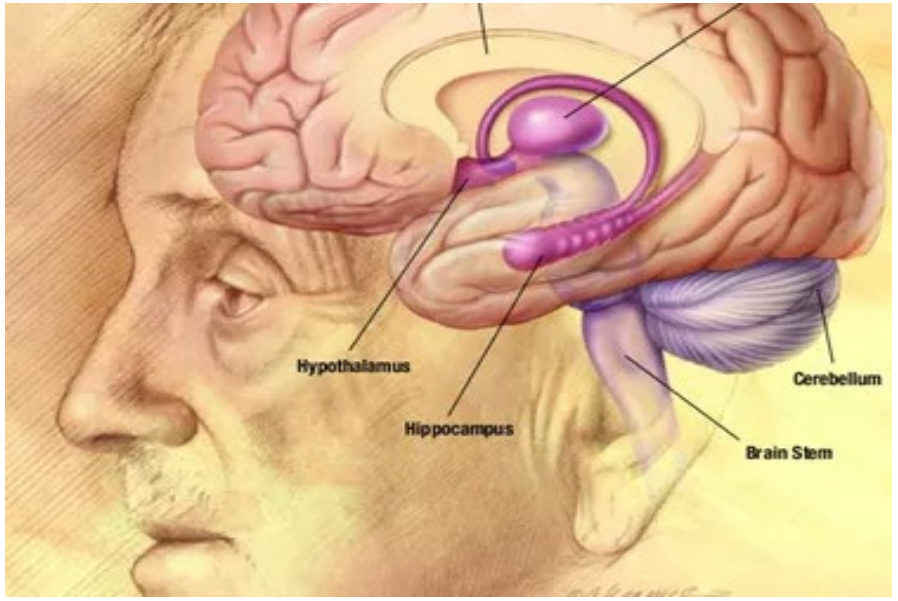


Grey Matters
Precision Brain Health Centers

Exercise your Body for your Brain

The antidepressant effect of running is associated with increased hippocampal cell proliferation.





Grey Matters
Precision Brain Health Centers

Int J Neuropsychopharmacol. 2005 Sep;8(3):357-68. Epub 2005 Mar 15.

Brain Power - Use It or Lose It



- Brain HQ
- Dual-task Training

Grey Matters
Precision Brain Health Centers

Sleep



Grey Matters
Precision Brain Health Centers

Get Your Cognoscopy

- A full check up for your brain done before anything goes wrong.



Grey Matters
Precision Brain Health Centers

Patient Receives

Patients receive-

- Advanced diagnostic tests to identify risk factors
- Unique, comprehensive care plan
- Ongoing support from experts

Identifying and treating risk factors not only improves brain health, but it also reduces chances of other chronic illnesses and promotes an overall healthier lifestyle.

Treatment Plan Options

Therapeutic System 1.0

Goal	Approach	Rationale and References
Optimize diet: minimize simple CHO, minimize inflammation.	Patients given choice of several low glycemic, low inflammatory, low grain diets.	Minimize inflammation, minimize insulin resistance.
Enhance autophagy, ketogenesis	Fast 12 hr each night, including 3 hr prior to bedtime.	Reduce insulin levels, reduce Aβ.
Reduce stress	Personalized—yoga or meditation or music, etc.	Reduction of cortisol, CRF, stress axis.
Optimize sleep	8 hr sleep per night; melatonin 0.5mg po qhs; Trp 500mg po 3x/wk if awakening. Exclude sleep apnea.	[36]
Exercise	30-60′ per day, 4-6 days/wk	[37, 38]
Brain stimulation	Posit or related	[39]
Homocysteine <7	Me-B12, MTHF, P5P; TMG if necessary	[40]
Serum B12 >500	Me-B12	[41]
CRP <1.0; A/G >1.5	Anti-inflammatory diet; curcumin; DHA/EPA; optimize hygiene	Critical role of inflammation in AD
Fasting insulin <7; HgbA1c <5.5	Diet as above	Type II diabetes-AD relationship
Hormone balance	Optimize fT3, fT4, E2, T, progesterone, pregnenolone, cortisol	[5, 42]
GI health	Repair if needed; prebiotics and probiotics	Avoid inflammation, autoimmunity
Reduction of A-beta	Curcumin, Ashwagandha	43-45
Cognitive enhancement	Bacopa monniera, MgT	[46, 47]
25OH-D3 = 50-100ng/ml	Vitamins D3, K2	[48]
Increase NGF	H. erinaceus or ALCAR	[49, 50]
Provide synaptic structural components	Citicoline, DHA	[51].
Optimize antioxidants	Mixed tocopherols and tocotrienols, Se, blueberries, NAC, ascorbate, α-lipoic acid	[52]
Optimize Zn:fCu ratio	Depends on values obtained	[53]
Ensure nocturnal oxygenation	Exclude or treat sleep apnea	[54]
Optimize mitochondrial function	CoQ or ubiquinol, α-lipoic acid, PQQ, NAC, ALCAR, Se, Zn, resveratrol, ascorbate, thiamine	[55]
Increase focus	Pantothenic acid	Acetylcholine synthesis requirement
Increase SirT1 function	Resveratrol	[32]
Exclude heavy metal toxicity	Evaluate Hg, Pb, Cd; chelate if indicated	CNS effects of heavy metals
MCT effects	Coconut oil or Axona	[56]

CHO, carbohydrates; Hg, mercury; Pb, lead; Cd, cadmium; MCT, medium chain triglycerides; PQQ, polyquinoline quinone; NAC, N-acetyl cysteine; CoQ, coenzyme Q; ALCAR, acetyl-L-carnitine; DHA, docosahexaenoic acid; MgT, magnesium threonate; fT3, free triiodothyronine; fT4, free thyroxine; E2, estradiol; T, testosterone; Me-B12, methylcobalamin; MTHF, methyltetrahydrofolate; P5P, pyridoxal-5-phosphate; TMG, trimethylglycine; Trp, tryptophan

Patient Testimonials

"I'm 67 years old, in good health and am always looking for ways to improve my health and quality of life. I had the best experience as I took several online cognitive tests and had some bloodwork done in order to determine what my current brain health was. My PreCODE results showed that I was at risk for several things. My experience with Grey Matters helped me develop my lifestyle plan to stay healthy and age with a quality of life."

"Grey Matters has treated me as a human being, not as a patient, with a real opportunity to get better. I feel like a totally different person, even my family members have noticed a difference in my behavior. We feel like we have someone who is really taking care of us."

"Medication is something you take in hopes of seeing results, this is not medication. This is a team working together to recover the perspective of how beautiful life is, a team that supports you while you work on achieving a better life."

"I can't imagine where I would be without ReCODE... I can actually see a light at the end of the tunnel."

Grey Matters
Precision Brain Health Centers

Patient Progress

We track patient progress through the MoCA assessment which looks at a patient's cognitive functions. MoCA Scores range from 1-30

Patient 1: 24/30 -> 26/30 in 4 months

Patient 2: 26/30 -> 27/30 in 14 months

Patient 3: 27/30 -> 30/30 in 4 months

Patient 4: 25/30 -> 28/30 in 7 months

Patient 5: 23/30 -> 28/30 in 12 months

Patient 6: 25/30 -> 28/30 in 4 months

GUIDE Model (Guiding an Improved Dementia Experience)

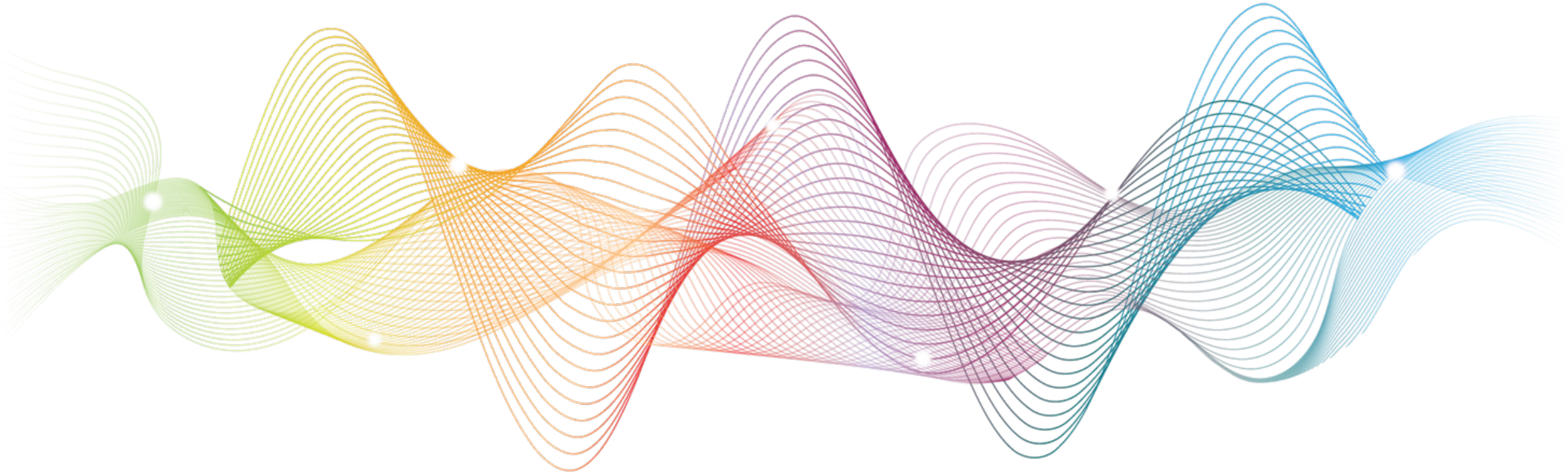
- Launched July 1 by **Medicare** – To improve quality of life for people with dementia (and their caregivers) and help them remain in place at home
- Only **96 providers** were selected by Medicare to launch GUIDE nationally
- Grey Matters is the only GUIDE Model provider in Sarasota and one of only 3 in Jacksonville

What does GUIDE Model provide?

If you qualify, your **Grey Matters Care Navigator** will help you receive:

- Assessments and care plans
- 24/7 access to a team member or help line
- Meals and transportations through local organizations
- Caregiver respite services
- Training on caring for loved ones living with dementia

Thank You!



Grey Matters

Precision Brain Health Centers

Ruth Ann O'Ski, APRN
2801 Fruitville Road Suite 220
Sarasota, Florida
Telephone (941) 529-0077
www.GreyMattersHealth.org

