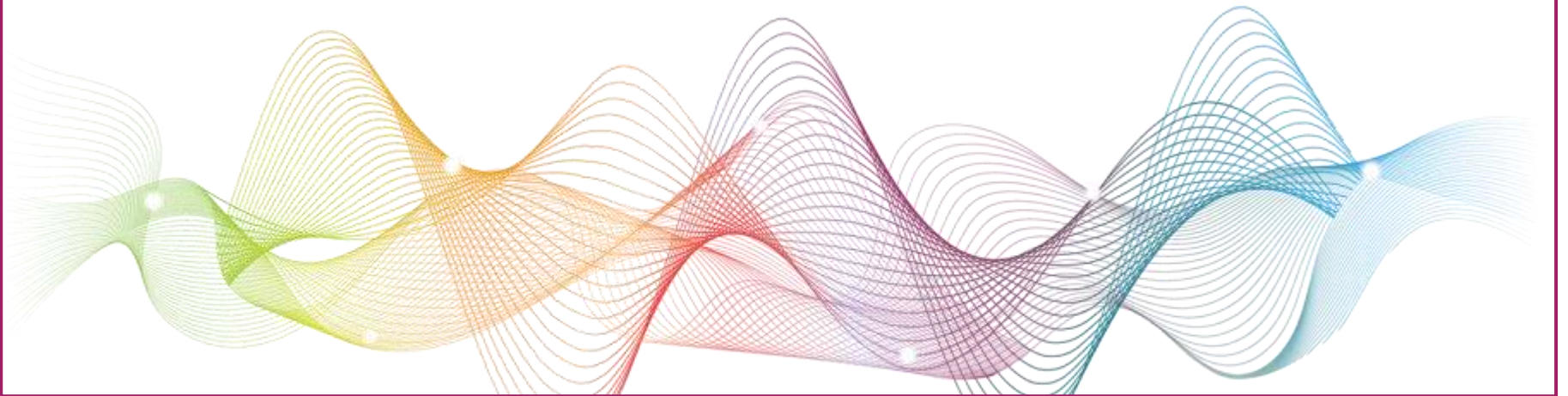


Grey Matters

Precision Brain Health Centers

We are **the** Dr. Dale Bredesen Clinic

The first comprehensive clinical program for persons with cognitive decline.





William Niels, M.D.

Grey Matters

950 S Tamiami Trail, Suite 210

Sarasota, FL 34236

www.greymattershealth.org

(941) 529-0077

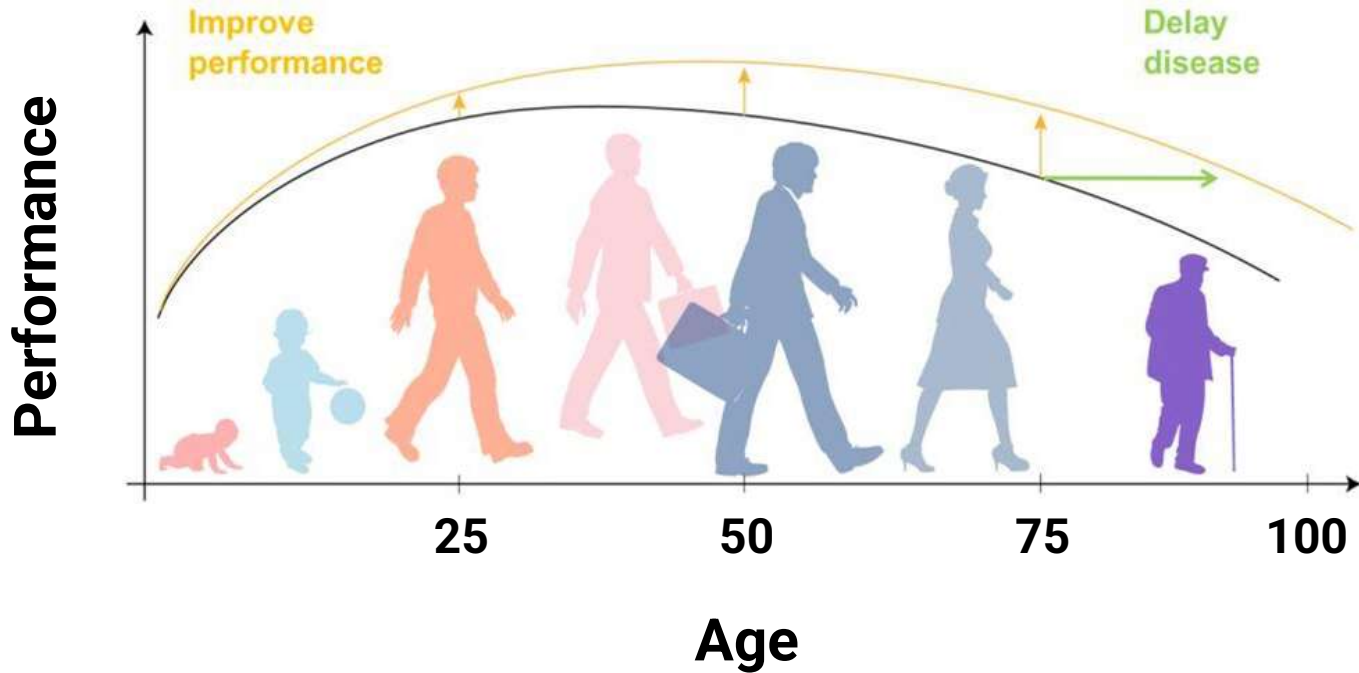
Contactus@greymattershealth.org

Outline



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

Why Brain Fitness Matters



The Human Brain - Alzheimer's Association



Cerebrum

Thinking, planning
Remembering, speech



Cerebellum

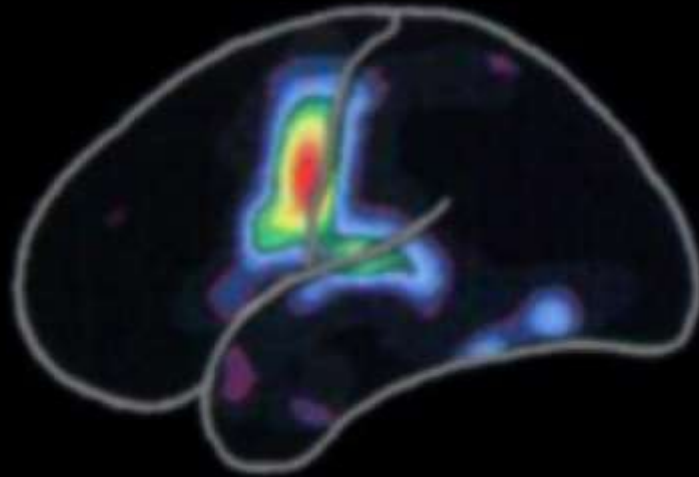
Balance, coordination



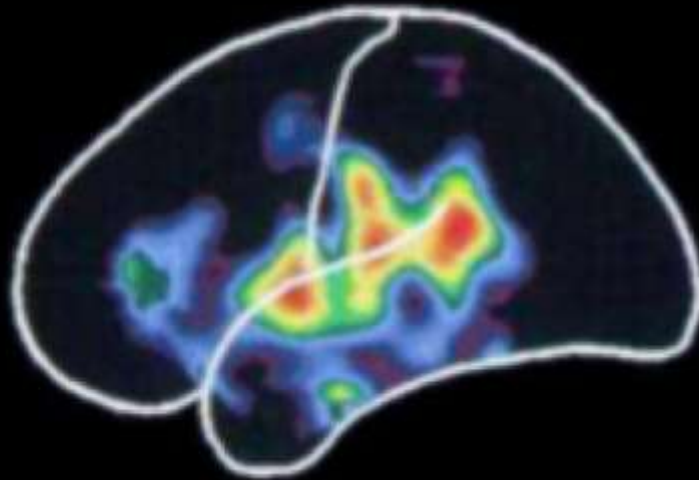
Brain Stem

Automatic functions
Digestion, breathing

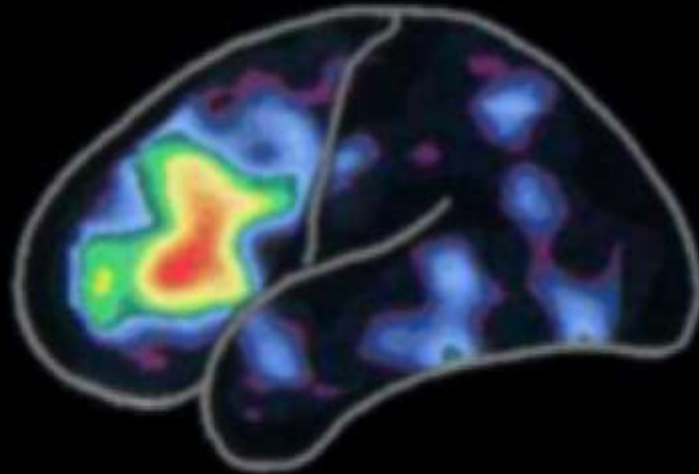
Speaking and Reading Words



Hearing Words



Thinking About Words



Executive Function - Prefrontal Cortex: Cognition

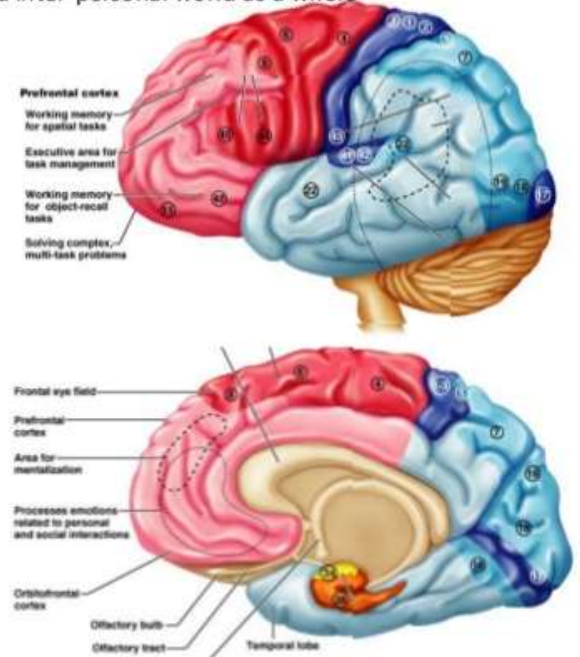


- + Planning
- + Reasoning
- + Attention
- + Judgement
- + Impulse control

This area is remodeled during adolescence until the age of 25 and is very important for well-being; it coordinates the brain/body and inter-personal world as a whole

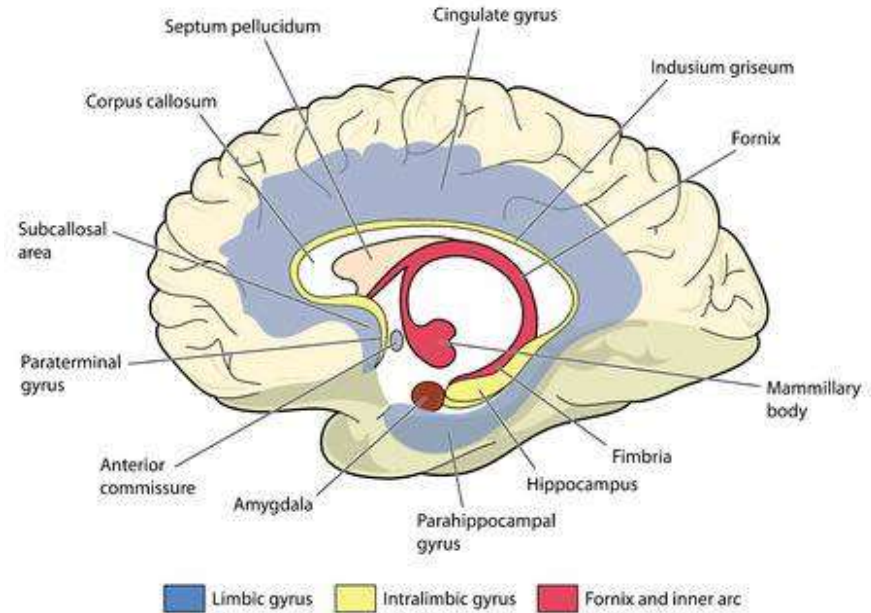
- | | |
|--------------------|--------------------|
| Intellect | Social skills |
| Abstract ideas | Appreciating humor |
| Judgment | Conscience |
| Personality | Mood |
| Impulse control | Mental flexibility |
| Persistence | Empathy |
| Complex Reasoning | |
| Long-term planning | |

Executive functioning
e.g. multiple step problem solving
requiring temporary storage of info (working memory)



Memory

- + Encode memories
- + Recall memories
- + Working memory (important for multi-step sequences)



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

Mixed Dementia - Memory and Aging Project Study



Long-term cognitive assessments followed by eventual brain autopsy:

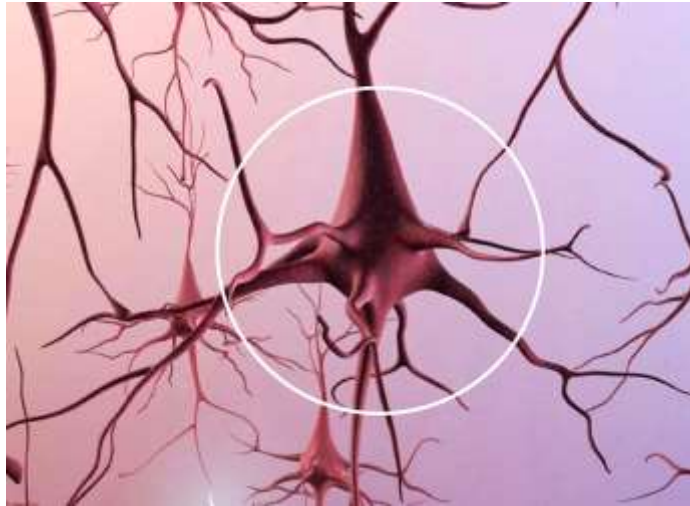
- + 94% of participants who were diagnosed with dementia were diagnosed with Alzheimer's. The autopsies of those diagnosed with Alzheimer's showed that 54% had coexisting pathology.
- + The most common coexisting abnormality was previously undetected blood clots or other evidence of vascular disease.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

Damage to Nerve Cells

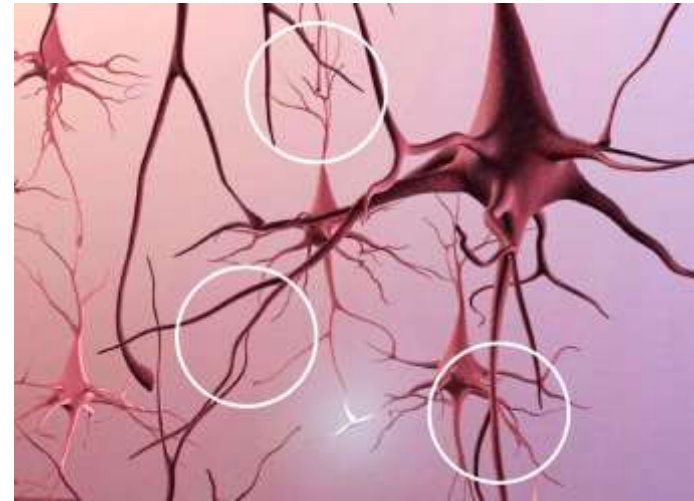


- + Trauma
- + Toxins
- + Infections
- + Loss of blood supply (stroke)
- + Programmed cell death

Brain Cells - Neurons

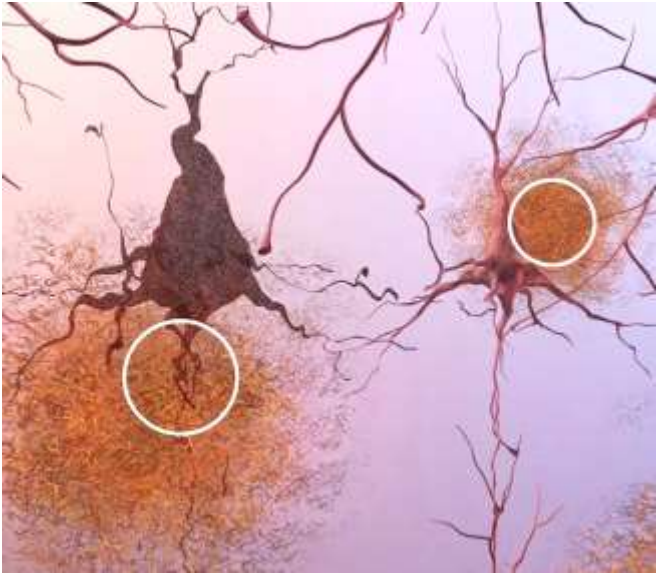


100 Billion Nerve cells



Synapses: 100 Trillion connections

Amyloid Plaques and Dying Cells with Tangles



Alois Alzheimer



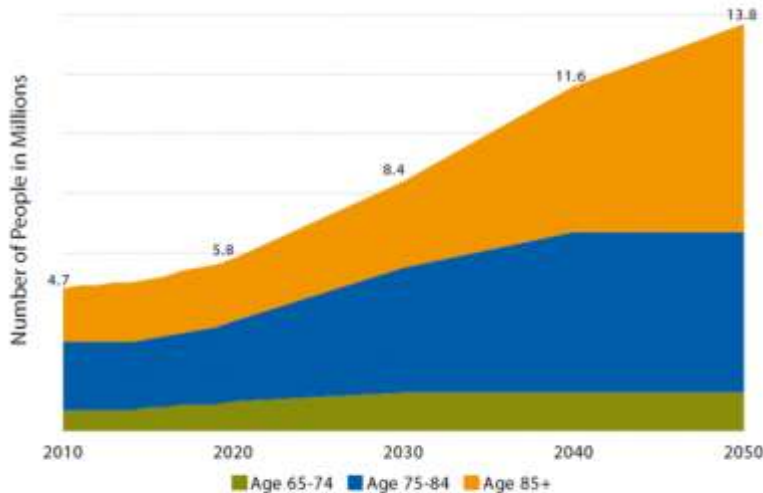
Dr. Alois Alzheimer - DialoguesClinNeurosci-5-101-g001. Alois Alzheimer. About 1909. © Archive for History of Psychiatry, Department of Psychiatry University of Munich. [From: <http://openi.nlm.nih.gov/>]

- + 1906 described “Presenile Dementia” characterized by amyloid plaques and tangles.
- + Largely ignored

Alzheimer's Prevalence - U.S.



Projected Number of People Aged 65 or Older With Alzheimer's Disease, by Age Group, United States, 2010–2050



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.

Drugs for Alzheimer's Disease



Thus far unfruitful.

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

Much attention has been turned towards prevention.

Healthy Diet, Exercise, Brain Stimulation.

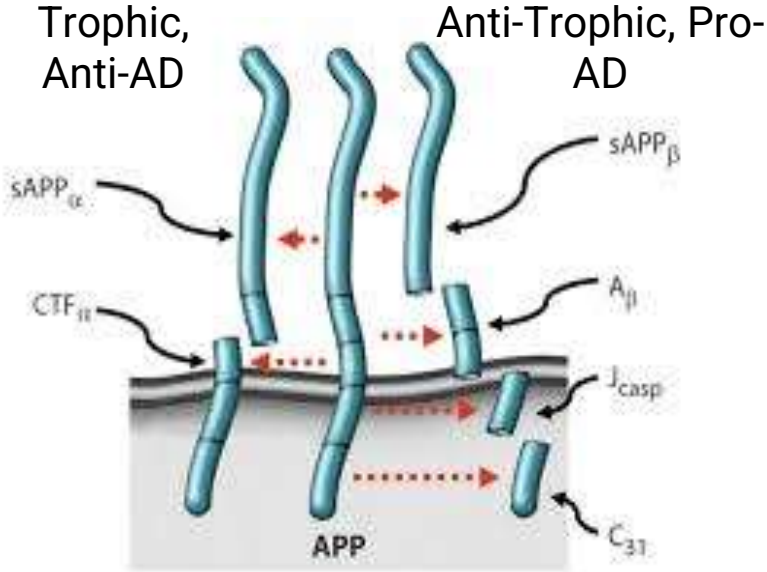
The Perfect Alzheimer's Drug Would:



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 A β , 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 NF κ B, increase telomere length, reduce glial scarring, enhance repair, etc.

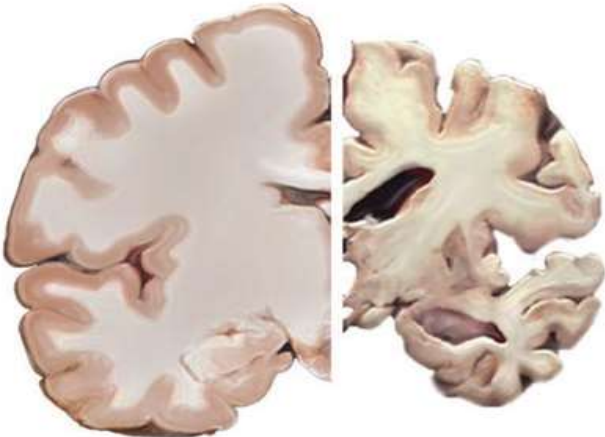
Dale Bredeesen 2014

Amyloid Precursor Protein



Healthy Brain

Severe AD



Alzheimer's - like a roof with 36 holes



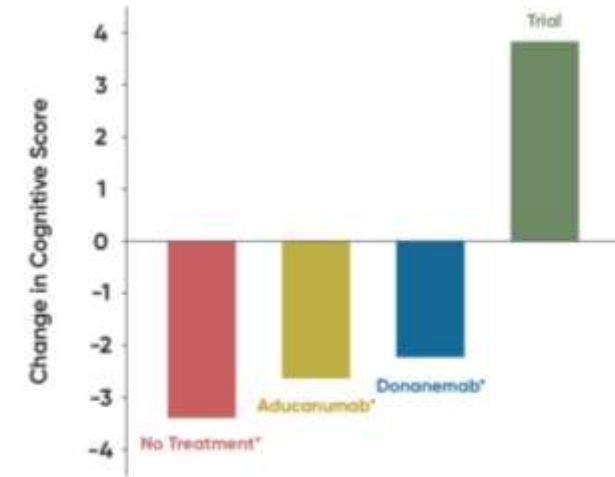
The Bredesen Protocol: Clinical Trials



Dr. Dale Bredesen and his team recently published a clinical trial into the Journal of Alzheimer's Disease (JAD):

- 25 patients were treated and 84% improved
- Both cognitive testing AND MRI brain volumetrics improved
- The JAD requested a larger, randomized controlled trial from Dr. Bredesen and his team, set to begin later this year

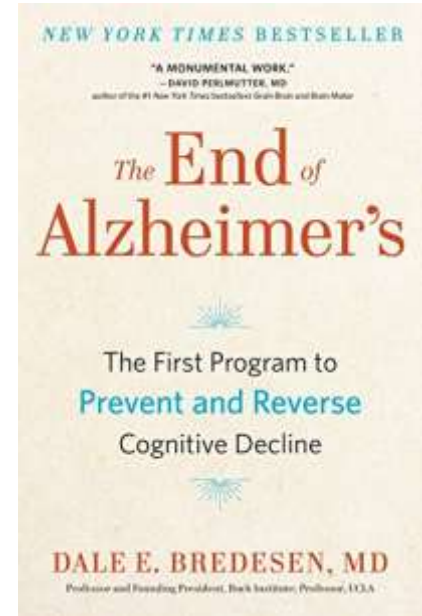
As noted, 84% of patients improved. However, we treated patients in relatively late stages (MCI and early dementia). When we treat patients with SCI, virtually 100% improve. And when we place patients on prevention, we have not seen anyone advance to dementia yet.



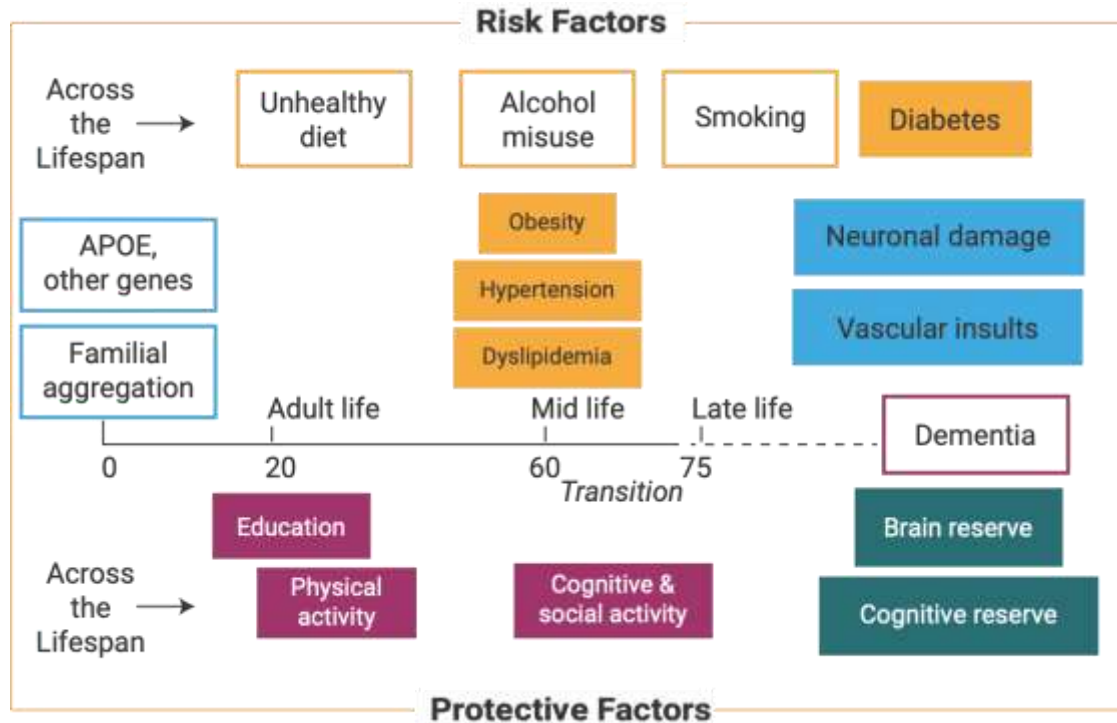
* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6888888/>
 ** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6888888/>

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

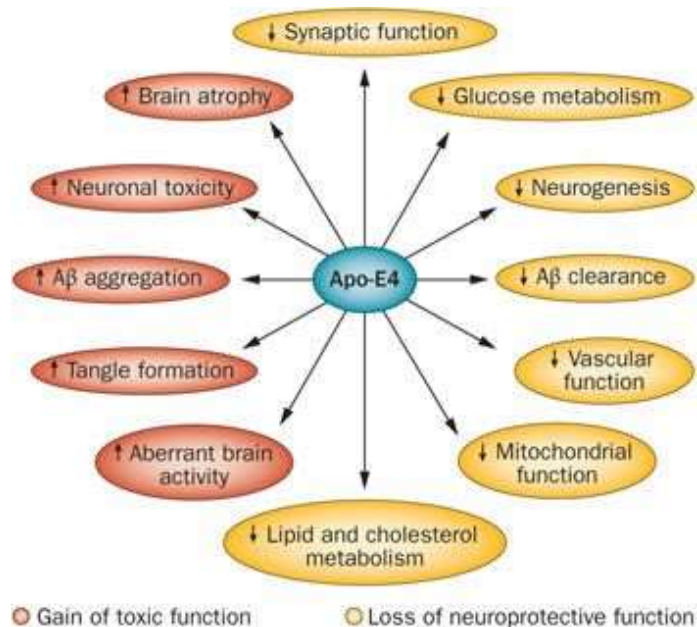
- + Identifies various subtypes of Alzheimer's Disease
- + Inflammatory, Glycotoxic, Trophic, Toxic, Trauma subtypes
- + Addresses the individual with a personalized plan
- + Cognoscopy – Identify Problems early and treat preemptively
- + Treating the Root Cause, Diet, Lifestyle, Supplements



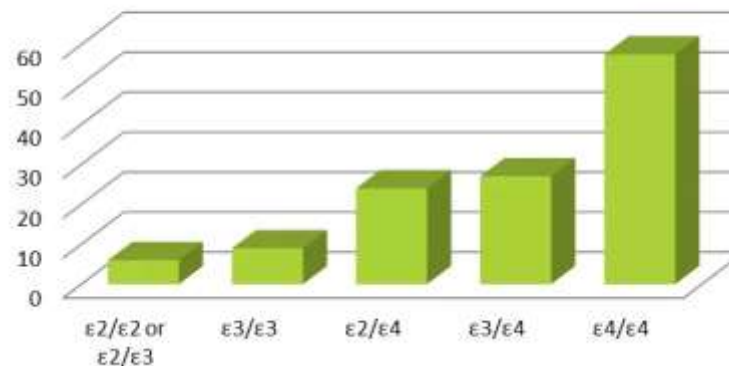
Dementia - an additive effect



ApoE Gene and Alzheimer's Disease



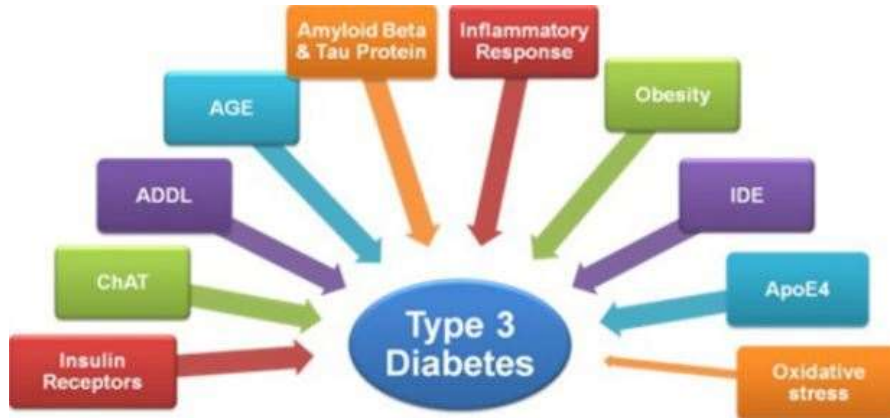
Approximate Lifetime Risk (%) of Alzheimer's Disease Based on ApoE Genotype*



Inflammatory, Trophic, and Toxic Substances



Alzheimer's Disease - Type 3 Diabetes?



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



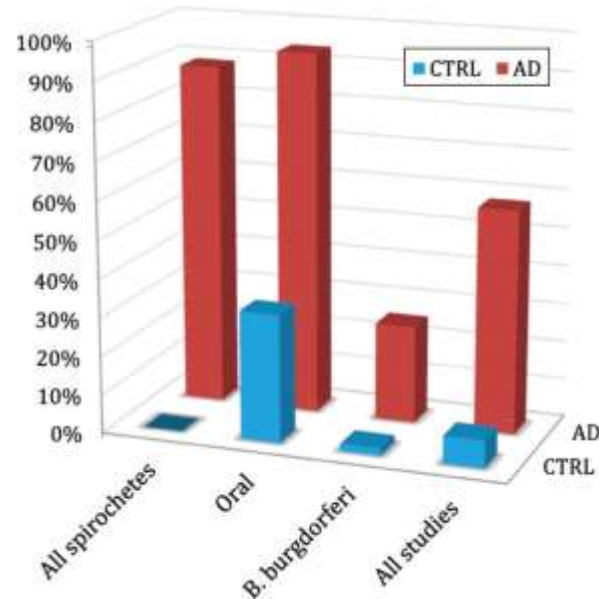
Mold Toxin and Alzheimer's Disease

Inhalational Alzheimer's & Mold Illness



Infections and Alzheimer's Disease

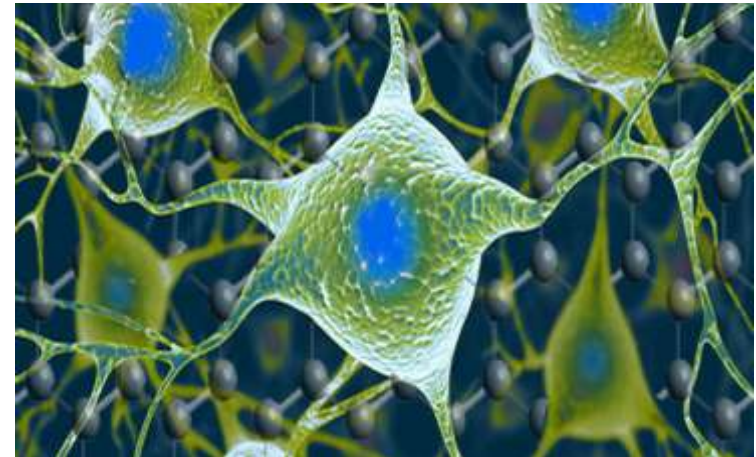
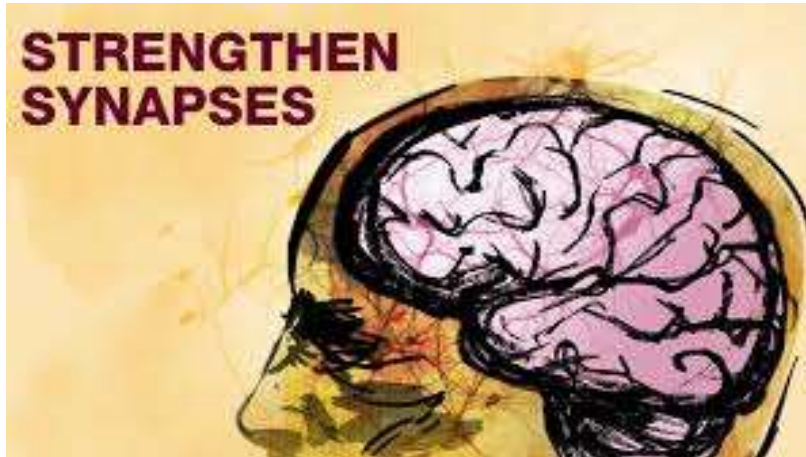
- + Herpes Virus
- + Lyme Disease
- + Oral Bacteria
- + H. Pylori



Heavy Metal Toxicity



Strengthen Synapses and Maintain Neurons

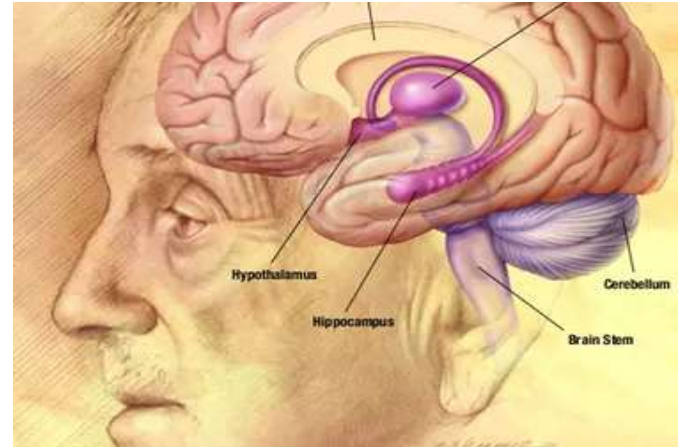


Vitamin E, Antioxidants vs. Saturated / Trans Fats



Exercise your Body for your Brain

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



Brain Power - Use It or Lose It



- + Brain HQ
- + CNS Vital Signs

Sleep



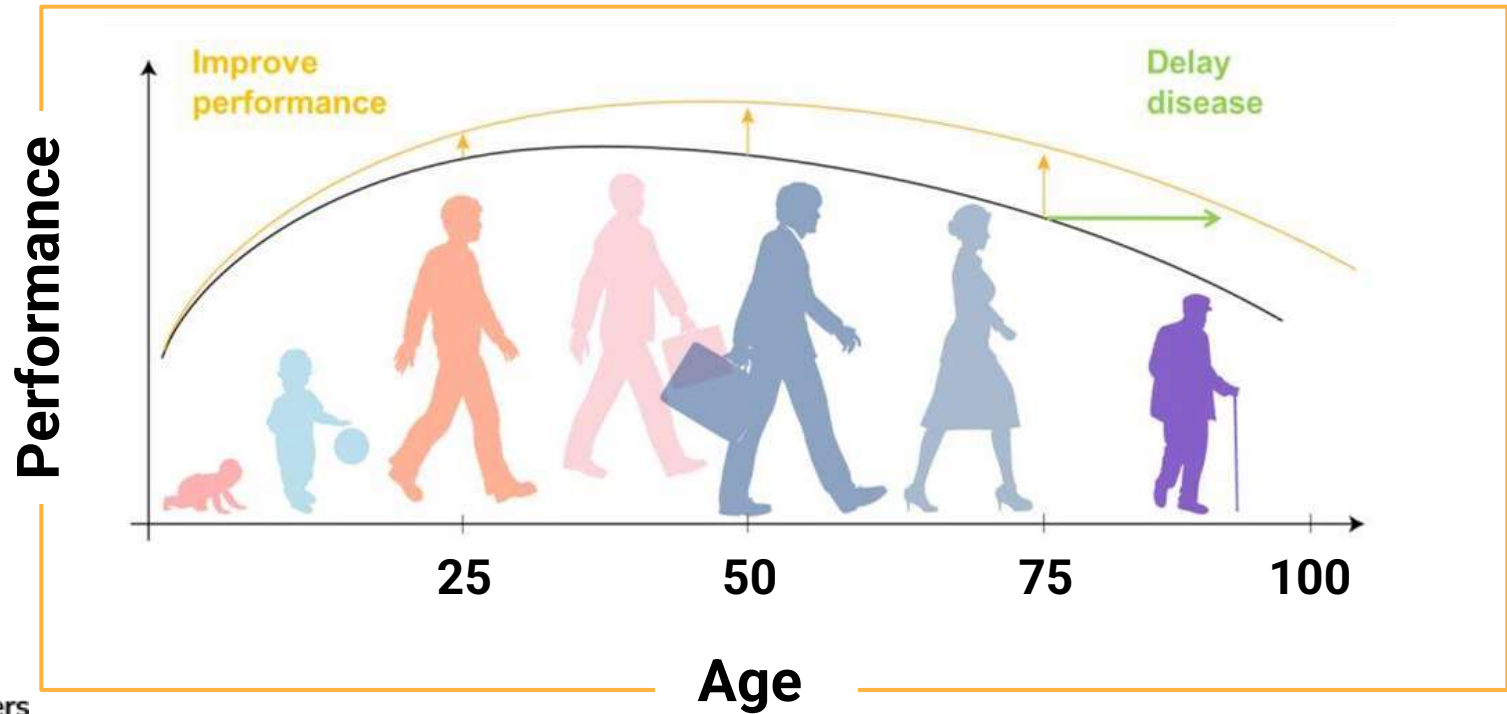
Treatment Plan Options

Therapeutic System 1.0

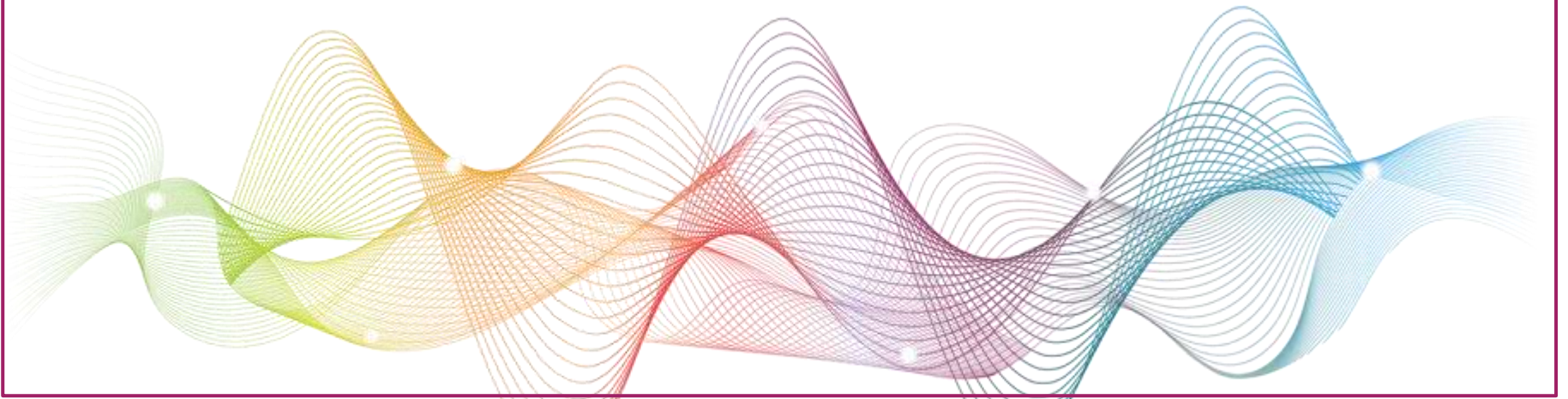
Goal	Approach	Rationale and References
Optimize diet: minimize simple CHO, minimize inflammation	Patients given choice of several low glycemic, low inflammatory, low grain diets.	Minimize inflammation, minimize insulin resistance
Enhance autophagy, ketogenesis	Fast 12 hr each night, including 3 hr prior 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 0.3mg po qhs; Trp 500mg po 3x/wk if awakening. Exclude sleep apnea.	[36]
Exercise	30-60' per day, 4-6 days/wk	[17, 38]
Brain stimulation	Passive 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; HbA1c <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 = 30-100ng/ml	Vitamins D3, K2	[48]
Increase NGF	IL-1ra/ra or ALCAR	[49, 20]
Provide synaptic structural components	Citicoline, DHA	[51]
Optimize antioxidants	Mixed tocopherols and tocotrienols, Se, blueberries, NAC, ascorbate, α-lipoic acid	[52]
Optimize Zn:Cu 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	Parathionic 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	Cocconut oil or Avana	[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

Get Your Cognoscopy



Thank You!





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William Niels, M.D.

Grey Matters

greymattershealth.org

(941) 529-0077

Contactus@greymattershealth.org

Locations in Sarasota & Jacksonville