

# Alzheimer's Disease: Prevention and Treatment

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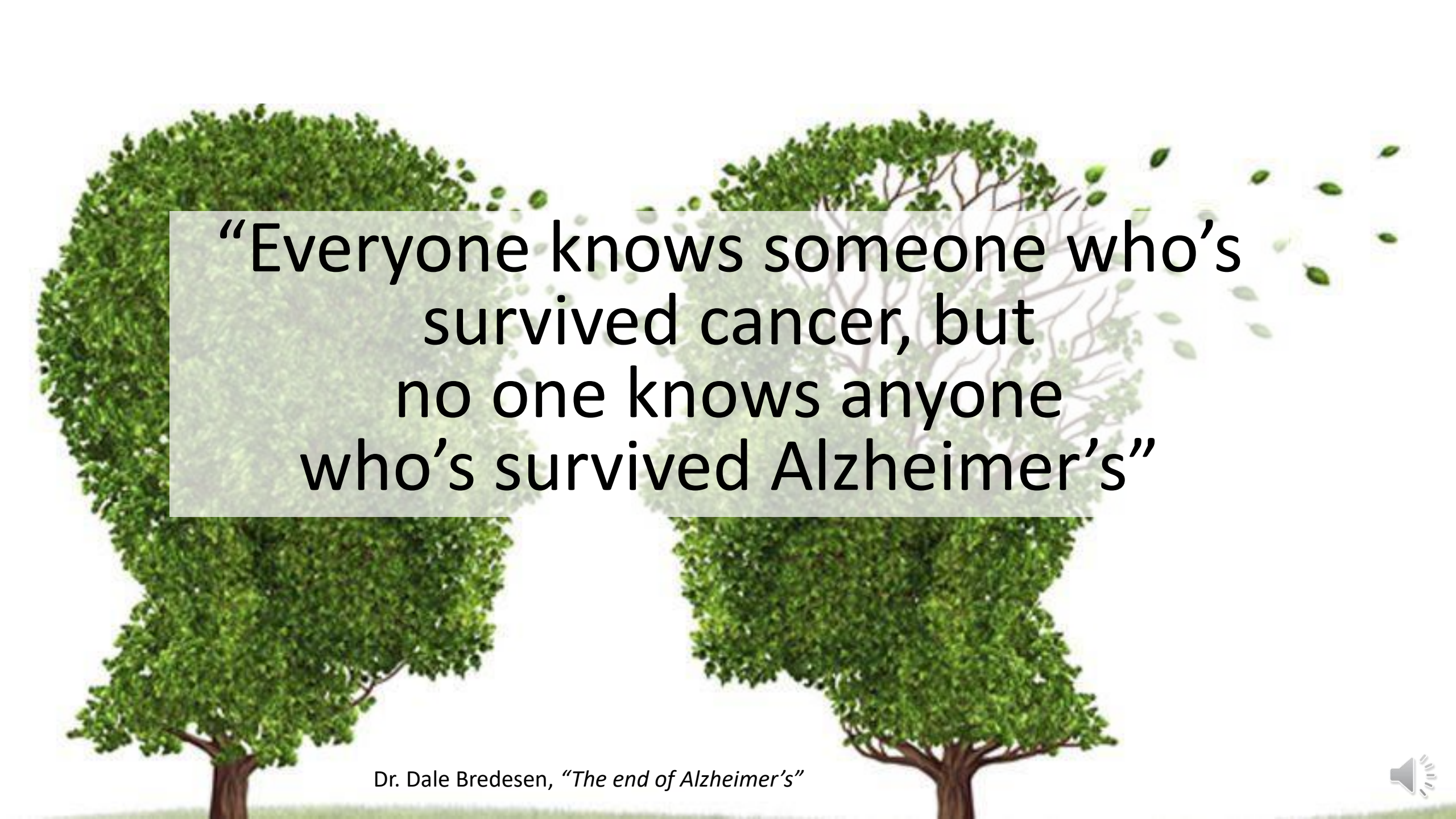
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“Everyone knows someone who’s  
survived cancer, but  
no one knows anyone  
who’s survived Alzheimer’s”

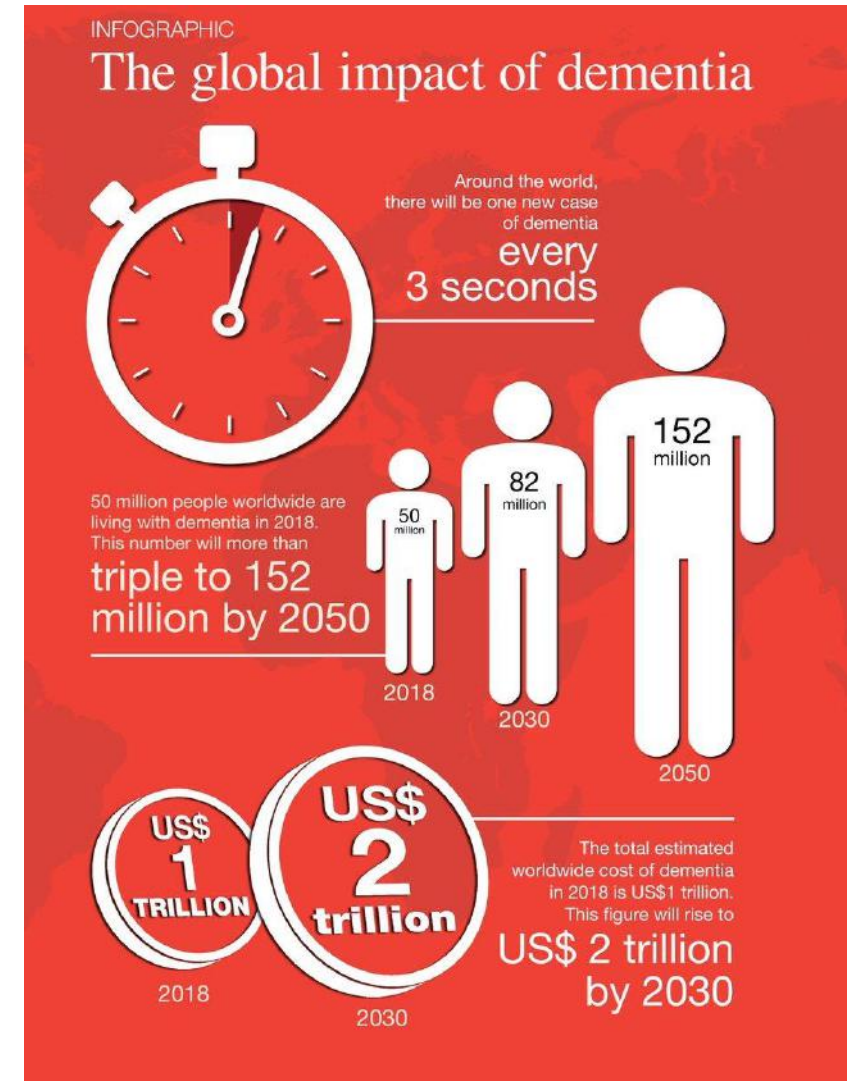
Dr. Dale Bredeesen, *“The end of Alzheimer’s”*



# ALZHEIMER'S DISEASE

- **6<sup>th</sup> leading cause of death** in the US; **7<sup>th</sup>** in the world
- 2000-2015: heart attack deaths decreased 11%; Alzheimer's deaths **increased** 123%
- 1 in 3 seniors die from Alzheimer's/dementia – kills more than breast and prostate cancer combined
- 2018 – Alzheimer's/dementia (US) cost \$277 billion
- By 2050 – Alzheimer's/dementia (US) could cost > **\$1.1 trillion**
- Someone in the US develops the disease every **65 seconds**

*Alzheimer's Association 2018 Alzheimer's Disease Facts and Figures  
World Alzheimer's Report 2018*



Credit: World Alzheimer's Report 2018



# Women's brains in Alzheimer's Disease

- 60-70% of Alzheimer's sufferers are women
- Women with MCI found to decline faster than men with similar diagnosis
- Similar levels of biomarkers might have different prognostic values for men and women
- Potential female risk factors:
  - Ovariectomy
  - Hypertensive complications during pregnancy
  - Number of pregnancies
- Mounting evidence indicating microglial cells are different in women than men





# Head injuries may lead to early Alzheimer's

- Contact sports that can result in concussions – football – lead to early onset Alzheimer's
- Conclusions drew by looking at post-mortem Alzheimer's cases
- Alzheimer's onset could be “accelerated” by up to 9 years





Concussion  
linked to  
**brain changes**  
in people at genetic  
risk for Alzheimer's

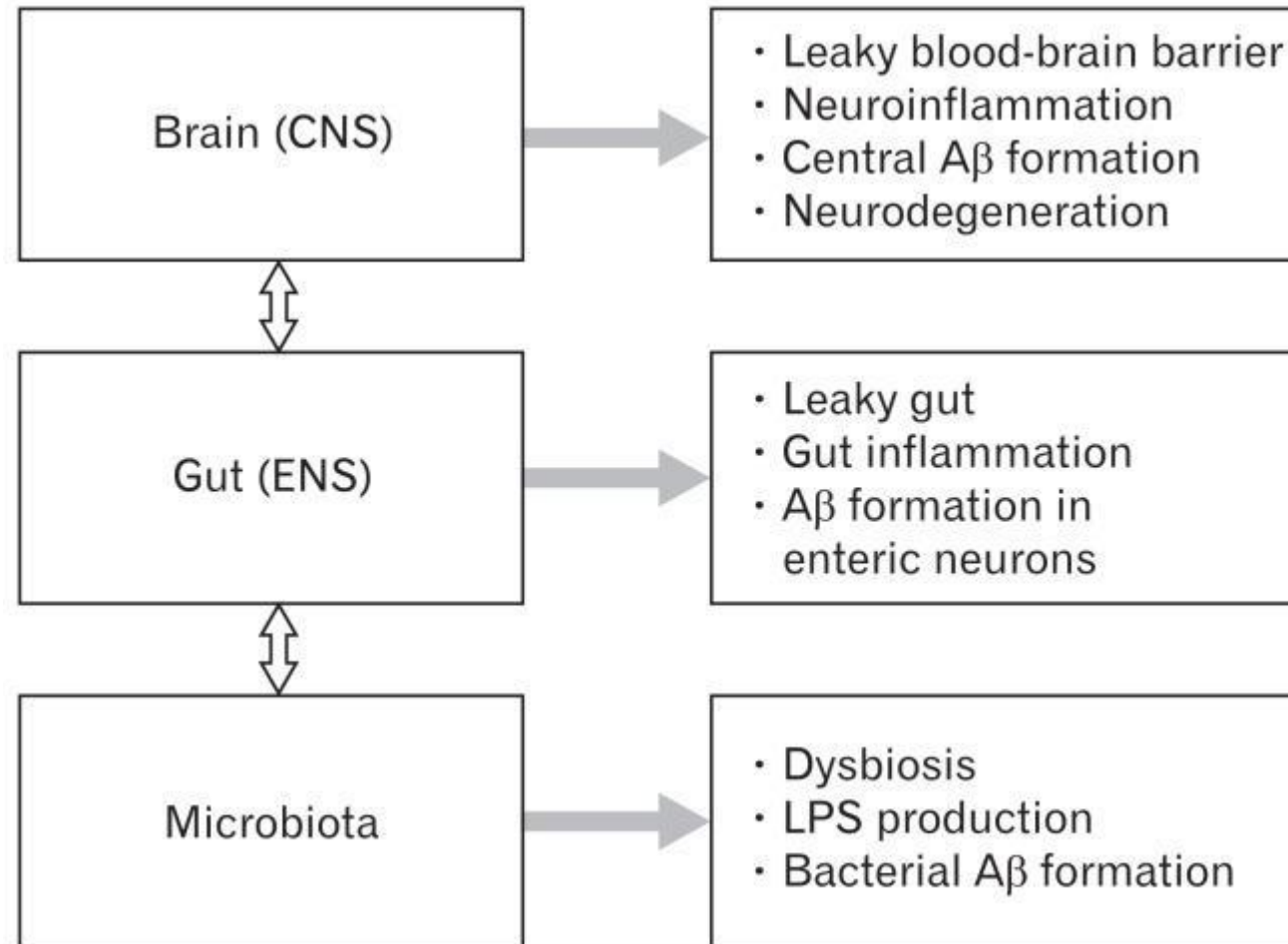


# ApoE

- ApoE gene on chromosome 19
- Encodes the instructions for making protein that helps transport cholesterol and other types of fat in the bloodstream
- 3 main focus:
  - ApoE2 – relatively rare. If you inherit this allele it's protective of developing Alzheimer's
  - ApoE3 – most common allele, no real effect
  - ApoE4 – 25 to 30 percent of population. Most common Alzheimer's allele



# Disturbances of the brain-gut-microbiota axis in Alzheimer's disease





# *P. gingivalis* in Alzheimer's disease

- *P. gingivalis* found in brains of Alzheimer's patients
- Bacteria creates destructive enzymes – gingipains
- Infiltrates brain and causes inflamed damage
- Over 90% of Alzheimer's disease samples had gingipains
- Also identified in CSF



# Lab tests for brain health

- Fasting blood glucose
- Hemoglobin A1c
- Fasting insulin
- Homocysteine
- C-reactive protein
- Vitamin D





ReCODE:  
**THE REVERSAL OF  
COGNITIVE DECLINE**





# Anti-Alzheimer's Diet: Ketoflex 12/3 (cont'd)

- Choose foods with GI under 35
- Avoid gluten and dairy
- Reduce toxin load
- Include good fats
- Avoid processed foods
- Eat SMASH fish

- Intermittent fasting
- Keto/Flex
- Add MCT oil
- Plant-based diet
- Test ApoE4
- BHB



# ANTI-ALZHEIMER'S DIET: KETOFLEX 12/3

- Include supplements:
  - Methylated B vitamins
  - Vitamin C – 1 g
  - Vitamin D – 5000 IU
  - Vitamin E – mixed tocopherols – 600 IU
  - Vitamin K2 (MK-4 and MK-7) – 100 mcg
  - Resveratrol – 100 mg
  - Acetyl-L-carnitine – 500 mg
  - Co-enzyme Q10 – 200 mg
  - Omega-3 FA – 2-4 g
  - Curcumin – 1 g
  - Pro-resolving Mediators – 1000 mcg
  - Mg – 400-600 mg

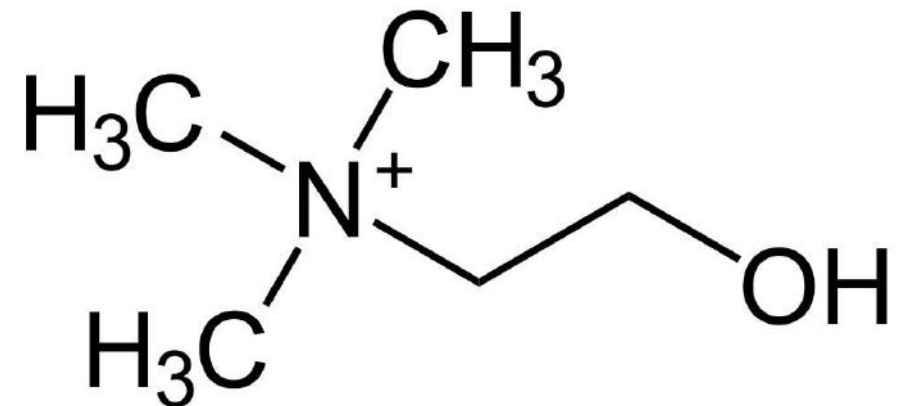
Adapted from *The End of Alzheimer's*, Dr. Dale Bredesen



# Choline for Alzheimer's Disease

**In new study:** A life-long dietary regiment of choline holds potential to revert Alzheimer's disease

- Benefits of choline supplementation reduce activation of microglial
- Reduction in microglial suggests ways of treating broad range of disorders – TBI, Parkinson's disease, multiple sclerosis





# Choline for Alzheimer's Disease

- Choline blocks production of amyloid-beta plaques
- Choline decreases microglial mechanistically – alters:
  - Alpha7 nicotinic acetylcholine
  - Sigma-1 receptors (agonist)



# Omega-3 needed to provide brain benefits

- 33 participants – Alzheimer’s risk factors
- 15 participants – APOE4 gene
- Treatment group took 2 grams DHA
- Control group took placebo
- Researchers gathered samples of:
  - Blood plasma
  - Cerebrospinal fluid
- Tested for EPA and DHA



# Omega-3 needed to provide brain benefits (cont'd)

- After 6 months:
  - Patients who took omega-3 – 200% more DHA in blood
  - 28% more in cerebrospinal fluid

**Takeaway:** Blood plasma levels may not indicate how much is reaching the brain

**Conclusion:** E4 carriers, despite having same dose, has less omega-3s in brain





# Lifestyle changes

- Exercise
- Sleep
- Reduce stress
- Brain training
- Resolve inflammation
- Inhibit new inflammation
- Remove all inflammatory sources
- Heal the gut – 7R Program



# Sleep/Alzheimer's disease

When young healthy men were deprived of 1 night of sleep – had higher levels of tau (biomarker for Alzheimer's disease) in their blood than when they had full night of rest



# 5 measures that lower Alzheimer risk

- 5 behaviors associated with lower risk for Alzheimer's disease:
  - 1) Exercise
  - 2) Not smoking
  - 3) Moderate drinking
  - 4) Mediterranean diet
  - 5) Mentally stimulating activities
- The more you follow them, the lower the risk





# 5 measures that lower Alzheimer risk (cont'd)

- 2 databases used:
  - 1845 patients – average age 23
  - 920 patients – average age 81
- All free of Alzheimer's at the start
- Followed for average of 6 years
- 608 developed Alzheimer's disease
- Those with 2 or 3 healthy lifestyle factors - 37% reduced risk
- Those with 4 or 5 healthy lifestyle factors – 60% reduced risk



# Body weight has impact on brain function

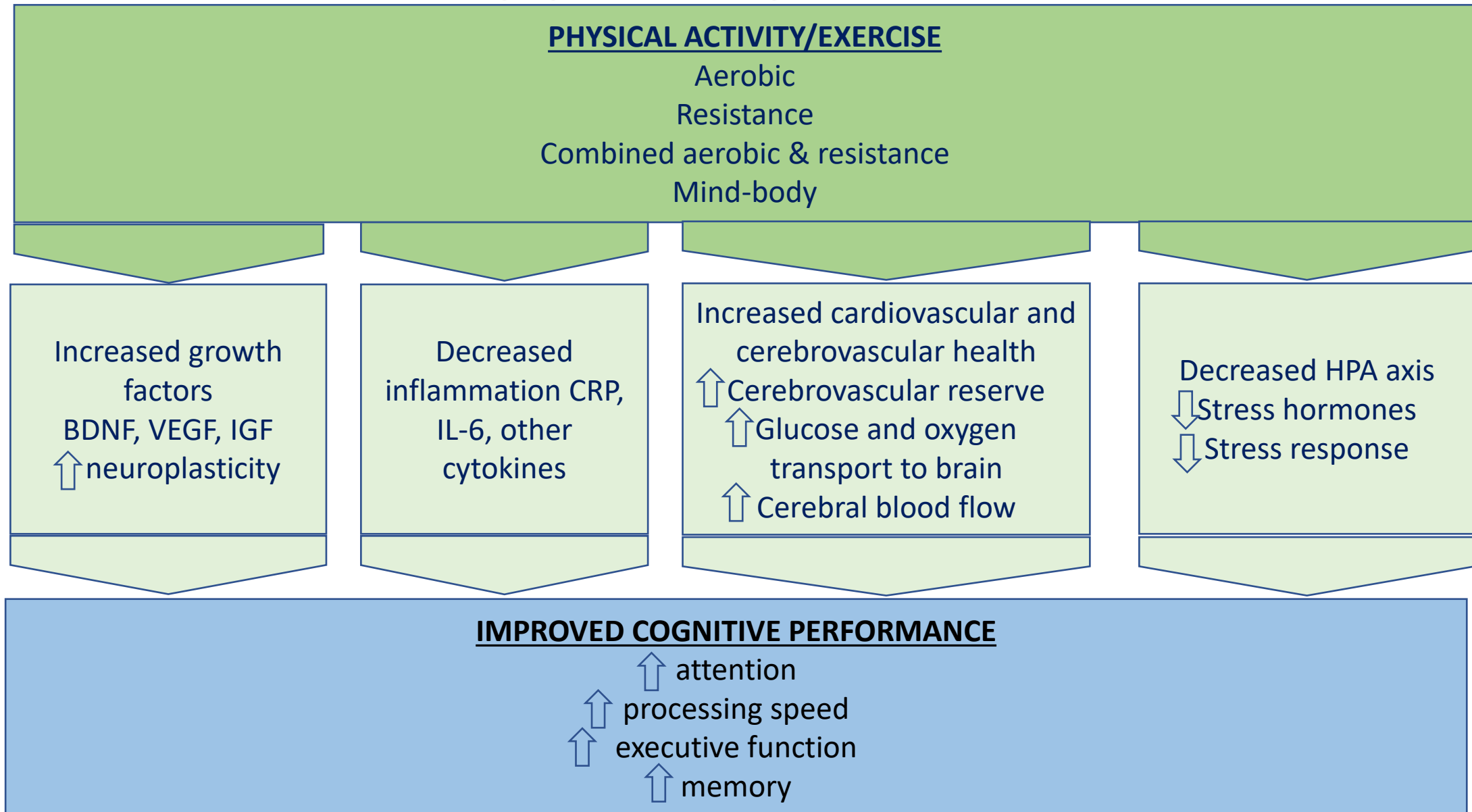
- 35,000 spect from 17,000 patients
- Low cerebral blood is a large predicator of Alzheimer's disease

## **Conclusion:**

“Study shows being overweight or obese seriously impacts brain activity and increased risk for Alzheimer's disease as well as many psychiatric and cognitive conditions”. – Dr. Daniel G. Amen



# Overview of potential biological mechanisms underlying cognitive gains with physical activity and exercise





10 ways to



- 6) Catch some ZZZzzz – **sleep/improve memory & thinking**
- 7) Take care of your mental health – **depression, anxiety, mental health**
- 8) Buddy up – **stay social, meaningful activities**
- 9) Stump yourself - **challenge yourself – jigsaw puzzle, something artistic**
- 10) Break a sweat – **exercise/CV exer. that elevates your H.R. & increase blood flow to brain & body. Studies found assoc. between physical activity & reduced risk of cognitive decline**

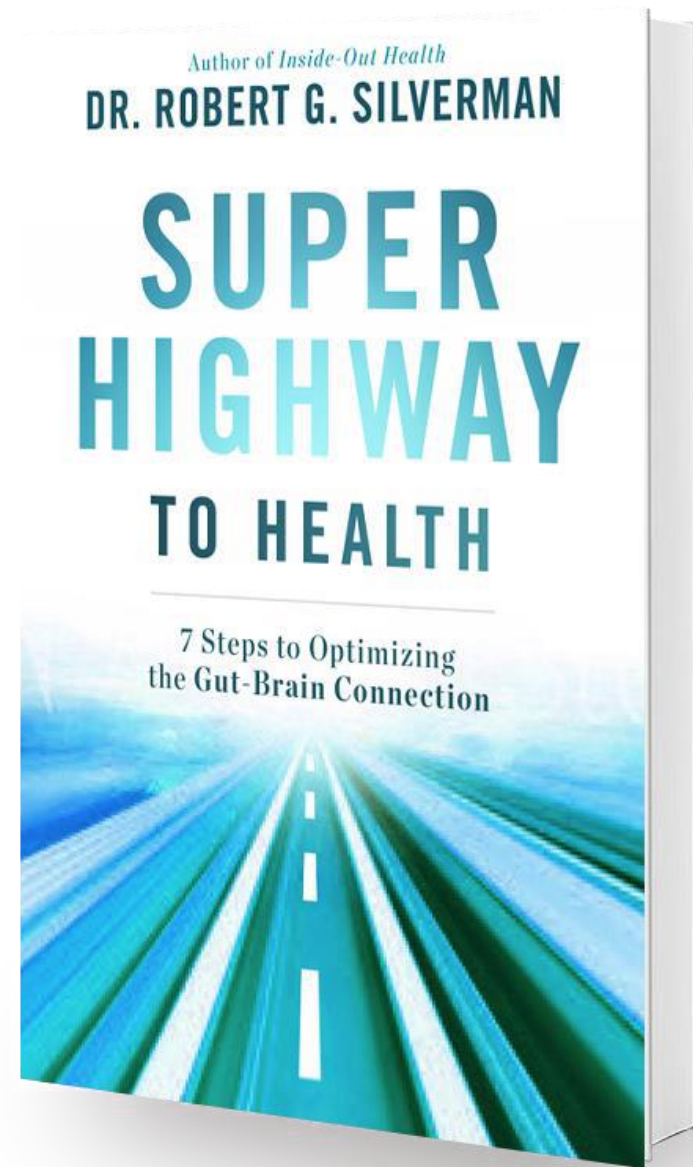


# Alzheimer's Fitness & Nutrition Specialist

*Coming in early 2021*



*Keep an eye out...*





*“Take care of your body, it’s the  
only place you have to live”.*

Jim Rohn





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