

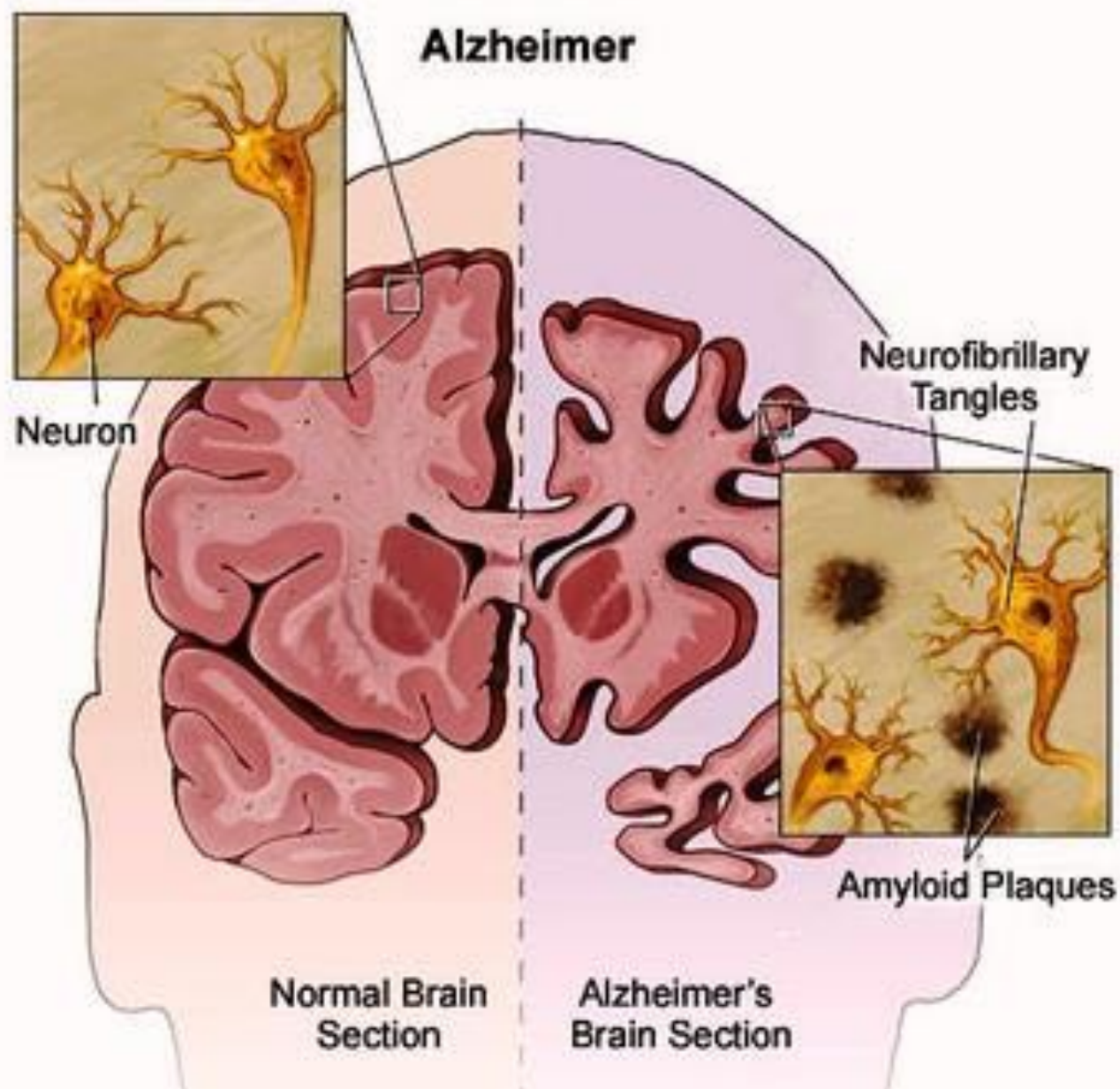
# The Brain Protection Plan



How to Identify & Reverse  
the Risk Factors for Cognitive Decline

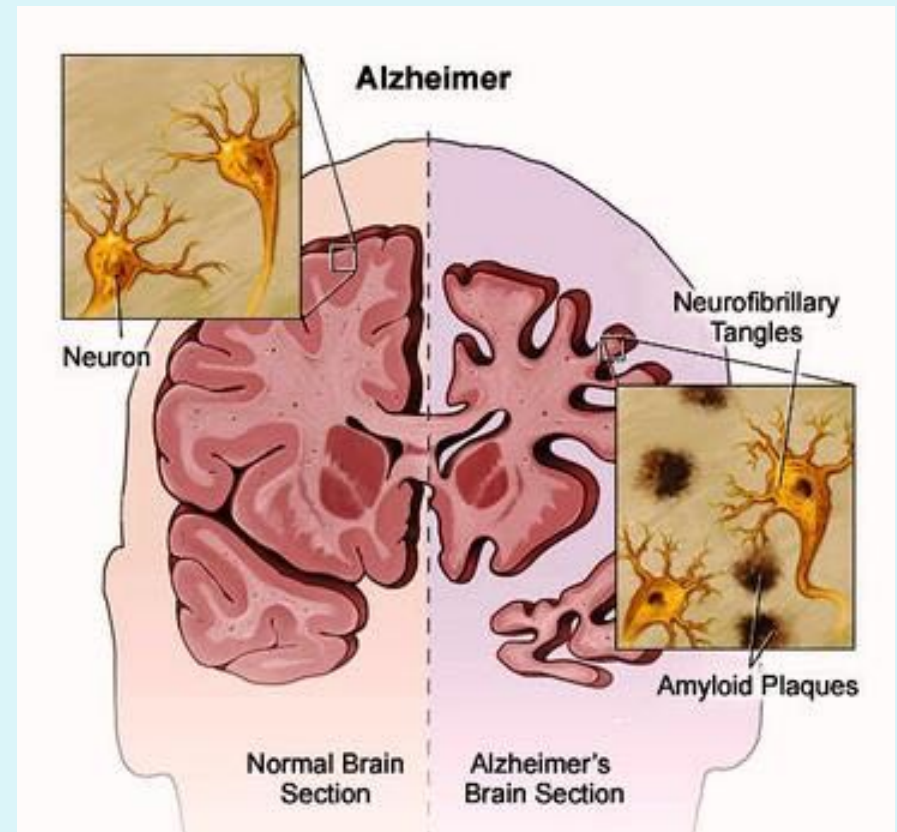


**Cynthia Libert, M.D.**  
Functional Medicine for the  
Brain & Body



# Plaques and Tangles

- Sticky plaque made of beta-amyloid protein
- Neurofibrillary tangles - messy bundles of degenerating nerve endings
- As the amyloid plaques and neurofibrillary tangles grow, neurons lose their ability to communicate and begin to die.



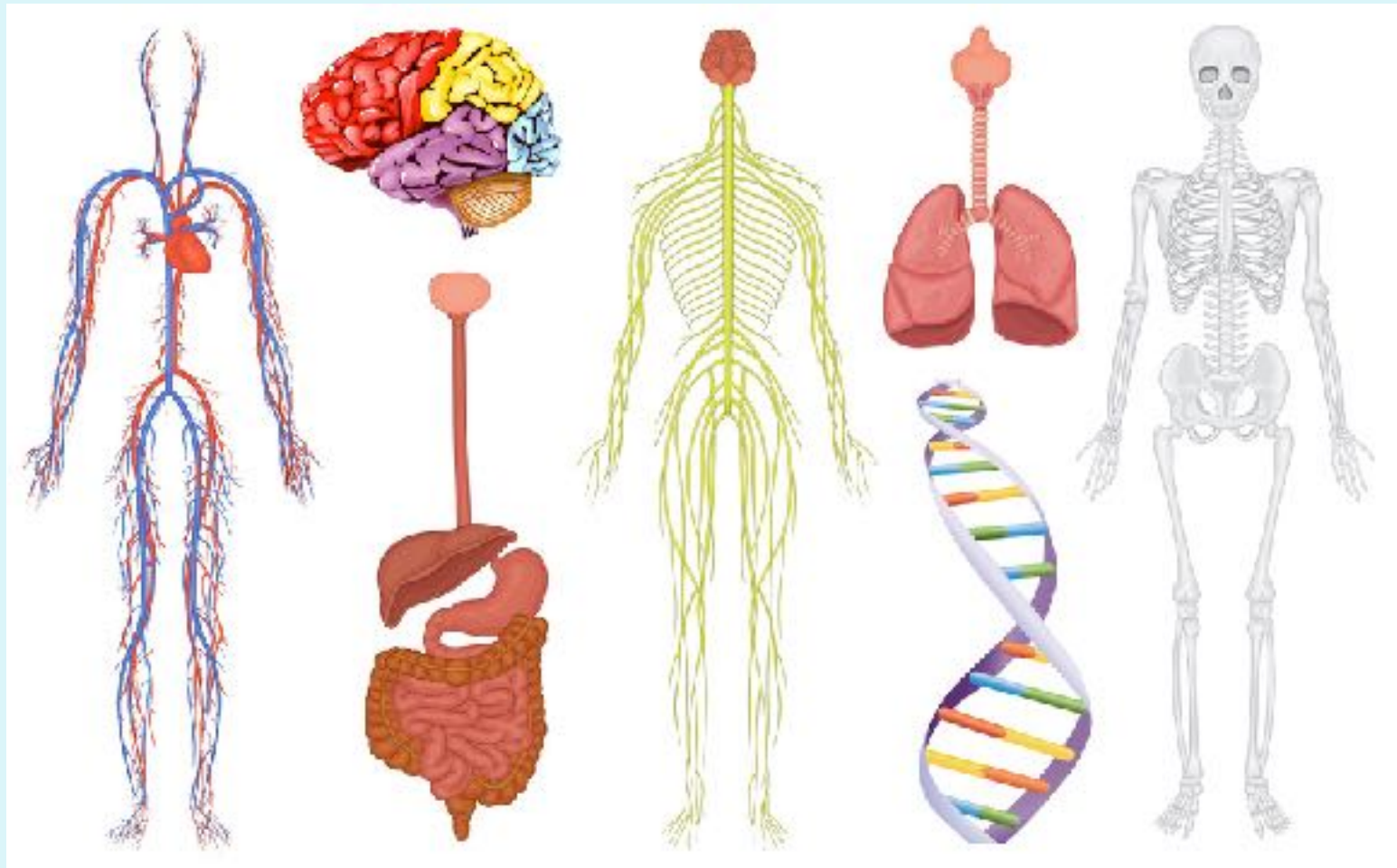
# A new understanding of chronic disease

- Chronic disease = network of molecular pathways that are out of balance
- Osteoporosis example
- Neuroblastic vs. neuroclastic activity





# Dysfunction in body → Brain problems



# Subtypes of risk factors for AD/MCI

- 1 Hot (inflammatory)
- 1.5 Sweet (glycotoxic)
- 2 Cold (atrophic)
- 3 Toxic (mold/heavy metal/environmental pollutants)
- 4 Pale (vascular)
- 5 Dazed (traumatic)



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# UNCOVER THE ROOT CAUSES OF BRAIN & BODY DYSFUNCTION

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# Personalized Medicine



“It is much more important to know what sort of patient has a disease than what sort of disease a patient has.”

~William Osler





**THE EAT FAT, GET THIN COOKBOOK**

Mark Hyman MD

**CONTENTMENT**

SWENSON

**THE ULTRAMIND SOLUTION**

MARK HYMAN, M.D.

**THE GRAIN BRAIN COOKBOOK**

DAVID PERLMUTTER, MD

**The THYROID CONNECTION**

AMY MYERS, MD

**ULTRAPREVENTION**

Mark Hyman, M.D., and Mark Lipowitz, M.D.

**MAKING A GOOD BRAIN GREAT**

**THE GRAIN BRAIN WHOLE LIFE PLAN**

DAVID PERLMUTTER, MD

**BRAIN MAKER**

DAVID PERLMUTTER, MD WITH KRISTIN LOBERG

**the adrenal reset diet**

ALAN CHRISTIANSON, NMD

**WHOLE30 COOKBOOK**

**HORMONE CUPE**

**HEALING AND THE MIND**

**THE ADRENAL HORMONE SOLUTION**

**EAT FAT, GET THIN**

**DO I HAVE A THYROID SYMPTOM?**

**DEPRESSION SOLID**

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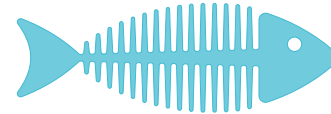
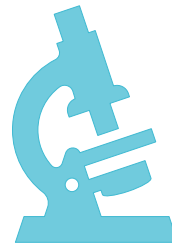
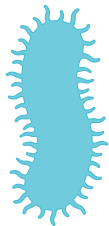
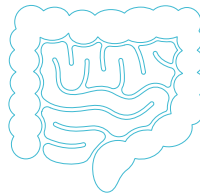
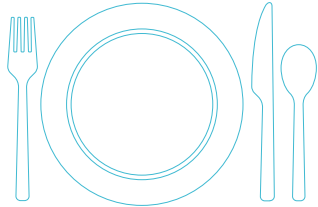
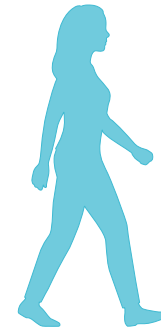
# THE FUNCTIONAL MEDICINE TREE, TIMELINE & MATRIX



# 7 Keys to Restoring Brain Health



- Optimize Nutrition
- Calm your Brainwaves
- Heal your Gut
- Restore Hormonal Balance
- Jumpstart Your Energy Systems
- Put out the Fire of Inflammation
- Enhance Detoxification



# Important Timeline Questions



- History of Lyme disease or tick bite?
- History of alcohol-related seizure or shakes on withdrawal?
- History of anti-testosterone Rx for prostate cancer?
- History of head trauma?
- History of heart attack or angina?
- History of hypertension?
- History of illicit drug use?
- History of loss of consciousness?
- History of peripheral vascular disease?



# Important Timeline Questions



- Hysterectomy without hormone replacement?
- Meningitis history?
- Onset of cognitive decline
- Simple carbohydrates in diet?
- Alcohol use more than 1.5 drinks per day?
- Apathetic attitude?
- Atrial fibrillation?
- Constipation?
- Consumption of seed oils?
- Delusions?

# Important Timeline Questions



- Difficulty looking up or down?
- Emphysema or bronchitis?
- Evidence of leaky blood-brain barrier?
- Evidence of leaky gut?
- Exposure to mitochondrial damaging agents?
- General anesthesia after 40 years old?
- Gluten sensitivity?
- Headaches?
- History of Herpes?

# Important Timeline Questions



- History of passing out?
- Loss of empathy?
- Loss of sense of smell?
- Mold exposure?
- More than 2 times general anesthesia after 40 years old?
- More than 3 dental amalgams?
- Neuroactive medications?
- New late sleeping pattern?
- Poor oral hygiene?
- Positive Lyme disease test?

# Important Timeline Questions



- Presence of dental amalgams?
- Presence of root canals?
- Problems calculating?
- Problems reading?
- Problems with finding words?
- Problems with organizing?
- Problems with recognizing faces?
- REM behavioral disturbance?

# Important Timeline Questions



- Rapid decline over weeks or a few months?
- Saying inappropriate things?
- Sleep apnea / hypopnea?
- Sleep less than 7 hours/night?
- Stealing items?
- Tremor at rest?
- Visual hallucinations?



# Genetic Variations/Mutations



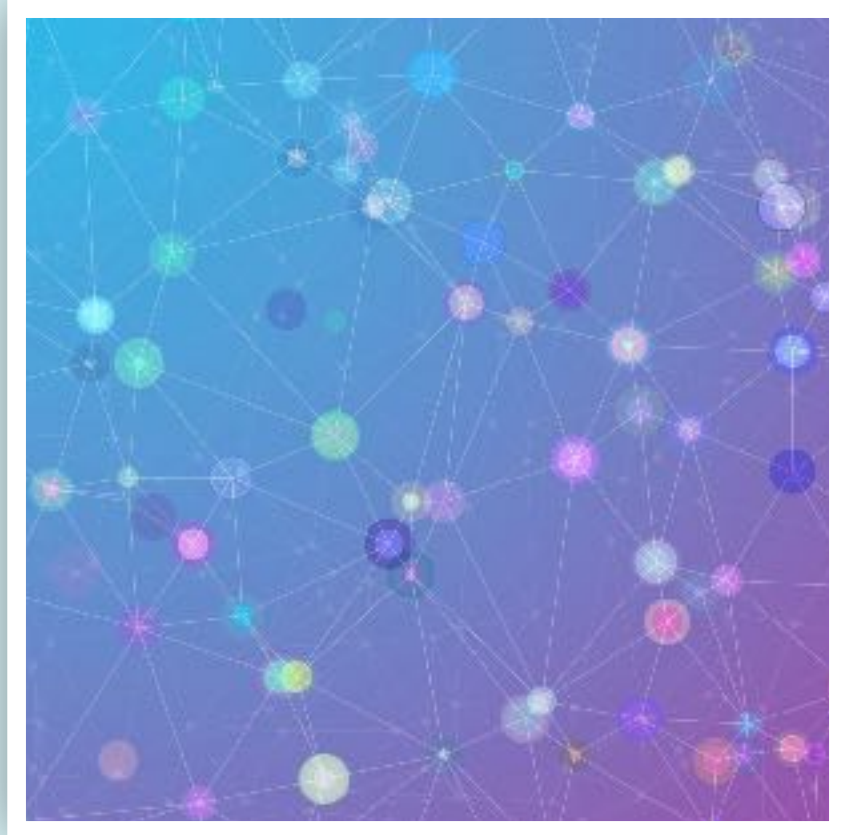
- APP mutation?
- Presenilin-1?
- Presenilin-2?
- HLA-DR/DQ multi-sensitivity?
- HLA-DR/DQ mycotoxin sensitivity?
- HLA-DR/DQ other sensitivity?
- MTHFR mutation?
- Any other known genetic risk factors?

# Brain Health Markers, Diagnostic Testing Tracking & Recommendations



# Brain Health Markers, Diagnostic Testing Tracking & Recommendations

- ACE score
- Medical Symptoms Questionnaire (MSQ)
- Organic Acid Test
- The Cardio IQ® Report
- Cyrex AD Interpretive Guide
- University of NC of Asheville Fit Lab



## Brain Health Markers, Diagnostic Testing Tracking & Recommendations

<b>Genetics</b>	ApoE4 status	
	COMT	
	MTHFR	
<b>General Health</b>	Blood pressure	less than 120 over 80 (120/80)
	BMI	18-25
	Waist-Hip Ration	0.9 or less in men 0.85 or less for women
	Grip Strength	Varies by gender and age
<b>Cognitive Performance</b>	AQ-21 Assessment	4 points or less
	MoCA Score	28-30 out of 30
	Cambridge Brain Science	Normal range or above
	CNS Vital Signs	Normal range or above
	Neuropsych testing	Normal range or above

## Brain Health Markers, Diagnostic Testing Tracking & Recommendations

Inflammatory/ Infectious	hs-CRP	<0.5mg/l
	Urinalysis	Normal
	A/G ratio (albumin/ globulin)	>/=1.8:1, >4.5 albumin
	LpPLA2	Women < 133 Men <153 nmol/min/mL
	Homocysteine	<7 umol/L
	Vitamin B6	60-100 ng/mL
	Vitamin B12	500-1500 pg/mL
	Folate	10-25 ng/mL
	LDL particle number	<1138 nmol/L
	Total Cholesterol	>150 mg/dL
	HDL	>50 mg/dL
	Triglycerides	<150 mg/dL
	Glutathione	554-1228 uM



## Brain Health Markers, Diagnostic Testing Tracking & Recommendations

<b>Microbiome</b>	Oral	No pathogens
	Nasal	No pathogens
	Gut	No pathogens
<b>Glucose &amp; Insulin</b>	Fasting glucose	70-90 mg/dL
	Fasting insulin	$\leq 4.5 \mu\text{IU/mL}$
	HgbA1C	$< 5.6\%$ of total hemoglobin

## Brain Health Markers, Diagnostic Testing Tracking & Recommendations

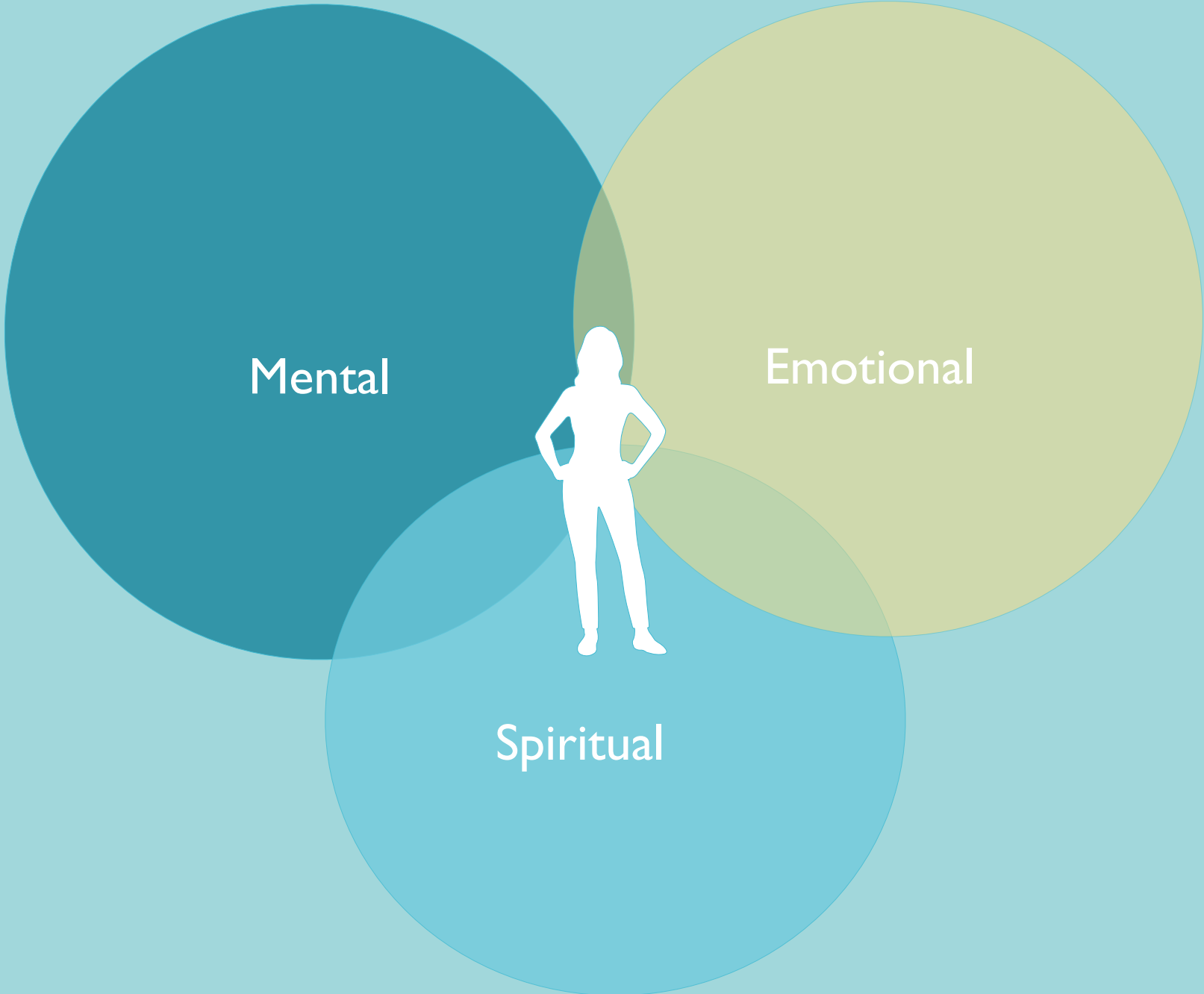
<b>Trophic Support</b>	Vitamin D, 25-Hydroxy, Total	50-80 ng/mL
	Estradiol	Optimized for age, gender and clinical considerations
	Total Testosterone	
	Free Testosterone	
	Progesterone	
	DHEA-S	
	Pregnenolone	50-100 ng/dL
	Cortisol	10-18 mcg/dL
	TSH	0.2-2 mIU/L
	Free T3	3.2-4.2 pg/mL
	Free T4	1.3-1.8 ng/dL
	Reverse T3	<20 ng/dL
	Thyroid Autoantibodies	Negative

## Brain Health Markers, Diagnostic Testing Tracking & Recommendations

<b>Toxicity</b>		
<b>Metals</b>	Mercury	
	Lead	
	Arsenic	
	Cadmium	
	Copper:zinc ratio	0.8-1.2
	Copper	70-175 mcg/dL
	Zinc	60-130 mcg/dL
	RBC magnesium	5.2-6.5
	Selenium	110-150
	Potassium	4.5-5.5
	Calcium	8.5-10.5
<b>Non-Metal Environmental</b>	GPL-Tox, Glyphosate	Negative
<b>Mold</b>	Urinary Mycotoxins	Negative

## Brain Health Markers, Diagnostic Testing Tracking & Recommendations

<b>Sleep</b>	Overnight Polysomnogram	AHI <5/hr
<b>Brain Imaging</b>	MRI with volumetric using neuroquant for hippocampal volume and cerebral atrophy assessment	Hippocampal volume percentiles steady (or increasing) for age, >25th percentile
<b>Optional Brain Imaging</b>	FDG-PET scale Amyloid PET scan Tau PET scan EEG	Negative
<b>ACE score</b>		
<b>MSQ score</b>		Less than 20



Mental

Emotional

Spiritual

# Identify infectious causes of inflammation



- Fungal
- Oral gingival infections
- Spirochete
- HSV

# Inflammatory/Infectious - Type 1A



- Head to Toe sources of Inflammation/Infection - Nose/Sinuses, Cold Sores, Gum Disease, Root Canals, Joints, Gut, Autoimmune conditions, Skin, Prostate, Lyme and Co-Infections, UTIs, Obesity, Sedentary Lifestyle, Cancer etc...
  - hs-CRP, Myeloperoxidase, fibrinogen and LpPLA2
  - Cone beam CT scan
  - Stool Studies





# Abdominal fat = Inflammatory Organ



# Glycotoxic - Type 1B



- Alzheimer's Disease = Type 3 Diabetes
- Body Composition
- Fasting Blood Sugar, Insulin, HgbA1C
- Micronutrient status (chromium)
- Environmental toxicity and link with DM II/obesity



# Atrophic - Type 2



- Sex hormone status -  
Testosterone and  
Estradiol
- B12
- Vitamin D
- Exercise
- Intellectual stimulation
- Thyroid hormone status -  
TSH, free T3, free T4,  
reverse T3, autoantibodies



# Toxic - Type 3



- Environmental Pollution
- Mold/Mycotoxins
- Genetic SNPs
- Liver health
- Heavy Metals - Mercury, Arsenic, Lead, Cadmium
- General Anesthesia
- Stress



# Vascular - Type 4



- Brain MRI
- Carotid Ultrasound
- CT coronary artery calcium score
- ABIs
- Hypertension, Dyslipidemia, Insulin Resistance



# Traumatic - Type 5



- Head trauma?
- Concussions
- ACE score





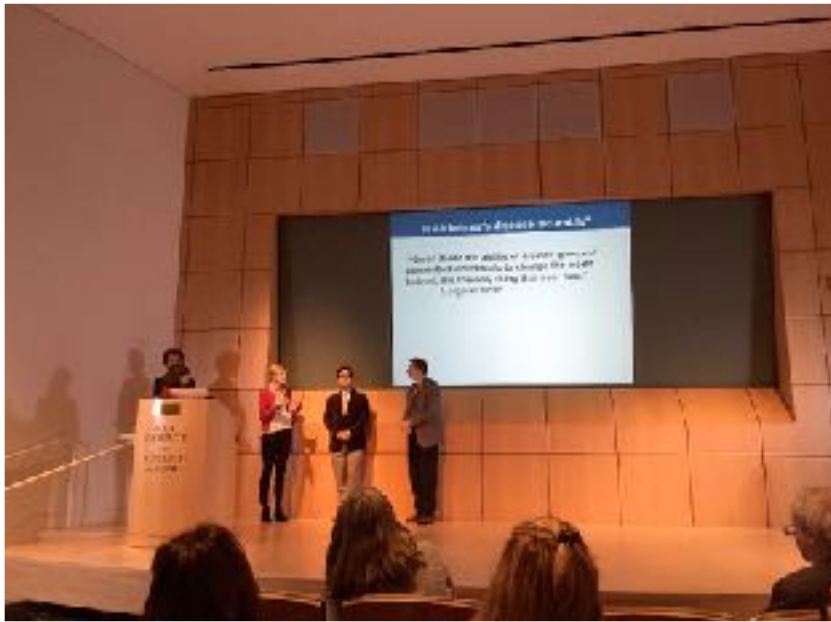
# Cognitive Decline Treatment Principles



- The goal is not simply to normalize metabolic parameters, but rather to optimize them.
- Based on Dr. Bredesen's hypothesis that AD results from an imbalance in an extensive plasticity network
- Designed to address as many of the network components as possible
- Idea that a combination of therapies may create a synergistic effect
- Follow enough steps to exceed the threshold
- Personalized approach based on the lab values affecting the neuroplasticity network
- Program is iterative, so that there is continued optimization over time
- For each network component, goal is to address it in as physiological a way as possible. **“up stream medicine”**



# Dawn of the Era of Treatable Alzheimer's Disease



“Never doubt that a small group of thoughtful, committed, citizens can change the world. Indeed, it is the only thing that ever has.”

– Margaret Mead

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# QUESTIONS & ANSWERS



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# Your Alzheimer's Disease Prevention Toolkit



[https://caringforthebody.org/  
toolkit/](https://caringforthebody.org/toolkit/)

**Password:  
VIP2020**



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