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Applying Functional and Integrative Medicine to improve your health!

Fred Grover Jr. M.D.

October 23rd, 2013

The Global Functional Medicine Strategy



Body

Mind

Spirit

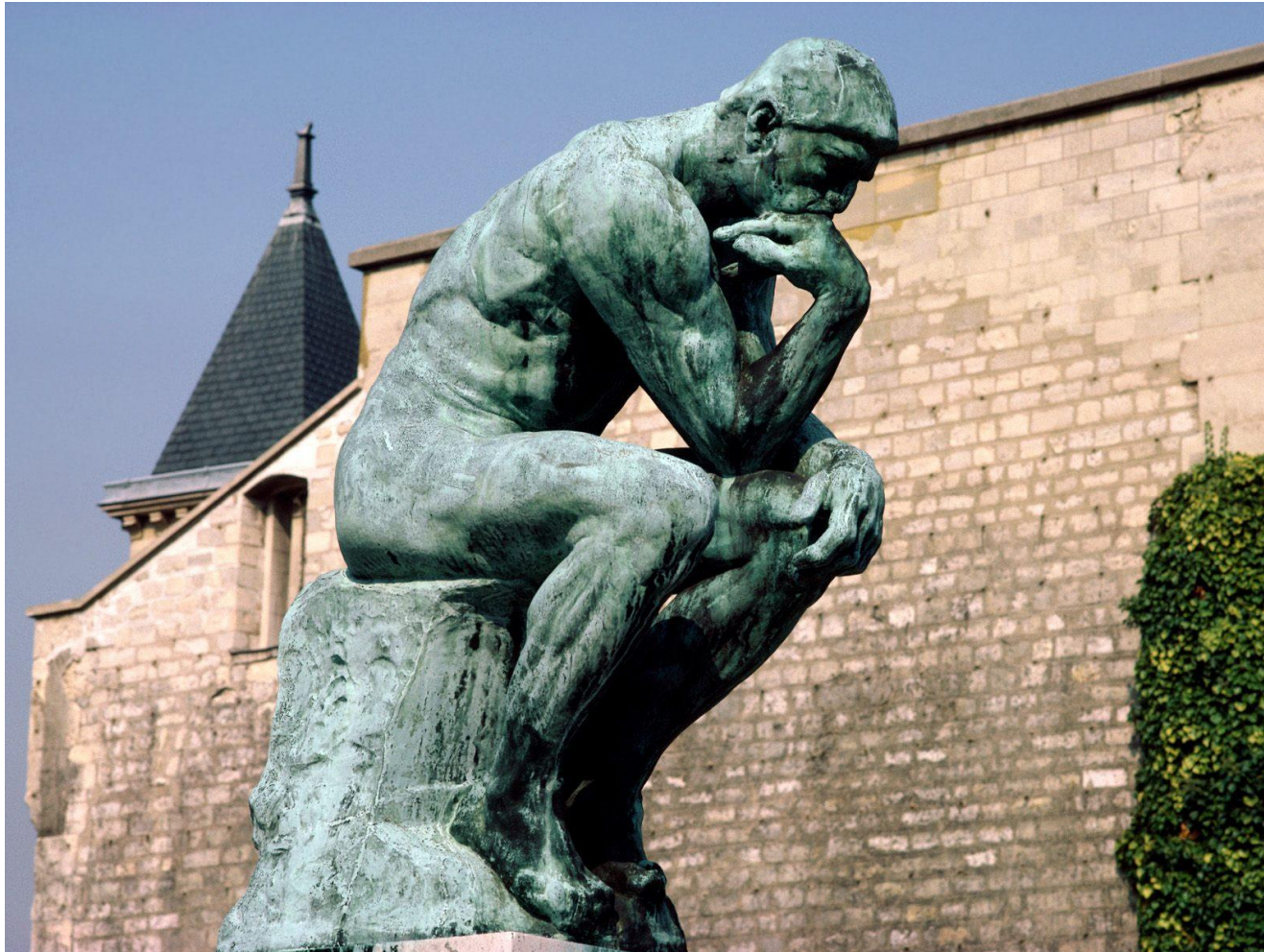


Functional Medicine Approach

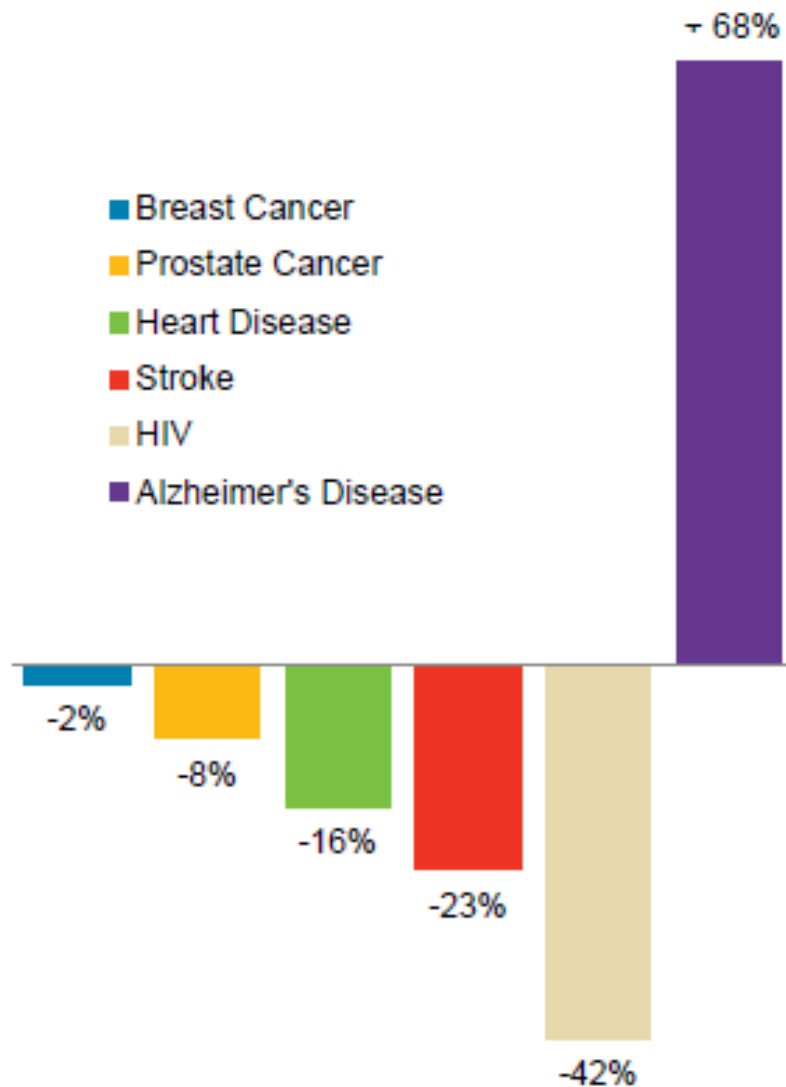


- **Seeks to identify and treat root cause, and not simply the symptoms.**
- **Personalized, not cookbook medicine.**
- **Preventative, not reactive “sick care”.**
- **Includes dietary and lifestyle coaching.**
- **Thorough, in-depth analysis that may include advanced testing such as genetic markers, nutritional screening, and functional imaging.**

Let's focus on your CPU, the Brain!



What's concerning here?



Disease Prevalence chart from the Alzheimer's association, alz.org

Alzheimer's Stats



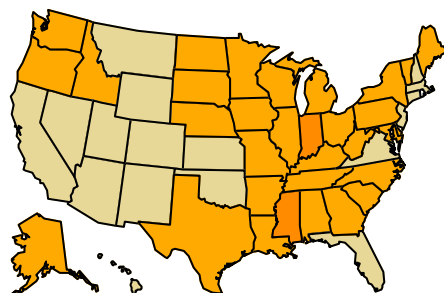
- 5.2 million currently have Alzheimer's in US, equal to the population of Colorado.
- 200,000 of these have early onset <65.
- Estimated to rise to 13.8 million by 2050
- Medicals costs of 203 Billion in 2013, rising to 1.2 trillion in 2050.

What's the Root Cause?

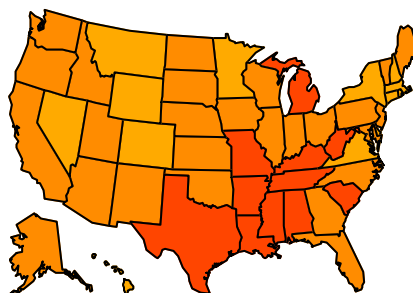


Obesity (BMI ≥ 30 kg/m²)

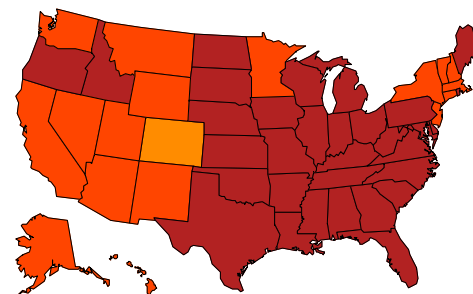
1994



2000



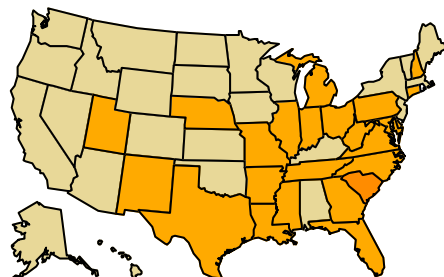
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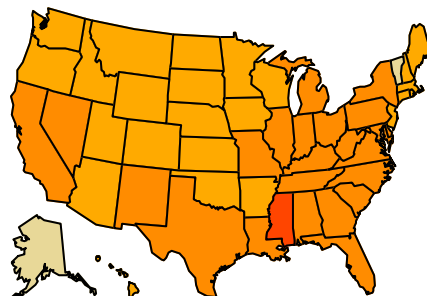
☐ No Data
 ☐ <14.0%
 ☐ 14.0%–17.9%
 ☐ 18.0%–21.9%
 ☐ 22.0%–25.9%
 ☐ 26.0%

Diabetes Prevalence

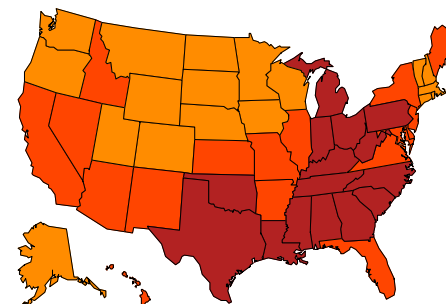
1994



2000



2010



☐ No Data
 ☐ <4.5%
 ☐ 4.5%–5.9%
 ☐ 6.0%–7.5%
 ☐ 7.5%–8.5%
 ☐ $\geq 9.0\%$

CDC's Division of Diabetes Translation. National Diabetes Surveillance System available at <http://www.cdc.gov/diabetes/statistics>

What does and elevated glucose cause?



How does this contribute to Alzheimer's risk?



- Type 1 diabetes (Insulin dependent) increases your risk three fold.
- Type 2 diabetes increases your risk two-fold.
- Pre-diabetes increases your risk by 60%.

Who has a metabolic risk for Alzheimer's?



- If you already have Diabetes or pre-diabetes work aggressively on weight loss and improving glucose control to reduce risk.
- If your BMI (Body Mass Index) >26 consider additional testing beyond a fasting glucose to assess risk and rule out pre-diabetes/diabetes.
- Check your serum insulin level, Hemoglobin A1c and consider a 2 hour glucose tolerance test too if borderline values.

What other tests are recommended?



- Consider genetic testing for the Apo-E4 allele which can increase your risk of Alzheimer's.
- Check expanded Cholesterol profile such as VAP, LPP, or Boston to assess vascular risk more thoroughly.
- Rule out gluten sensitivity and Celiac. If positive blood test, eliminate it from diet.
- Check and address heavy metal toxicity if found in blood test.
- If you have current concerns about cognitive impairment consider the ADAS-Cog via though a neuropsychologist.

Brain Imaging for Symptomatic Evaluation

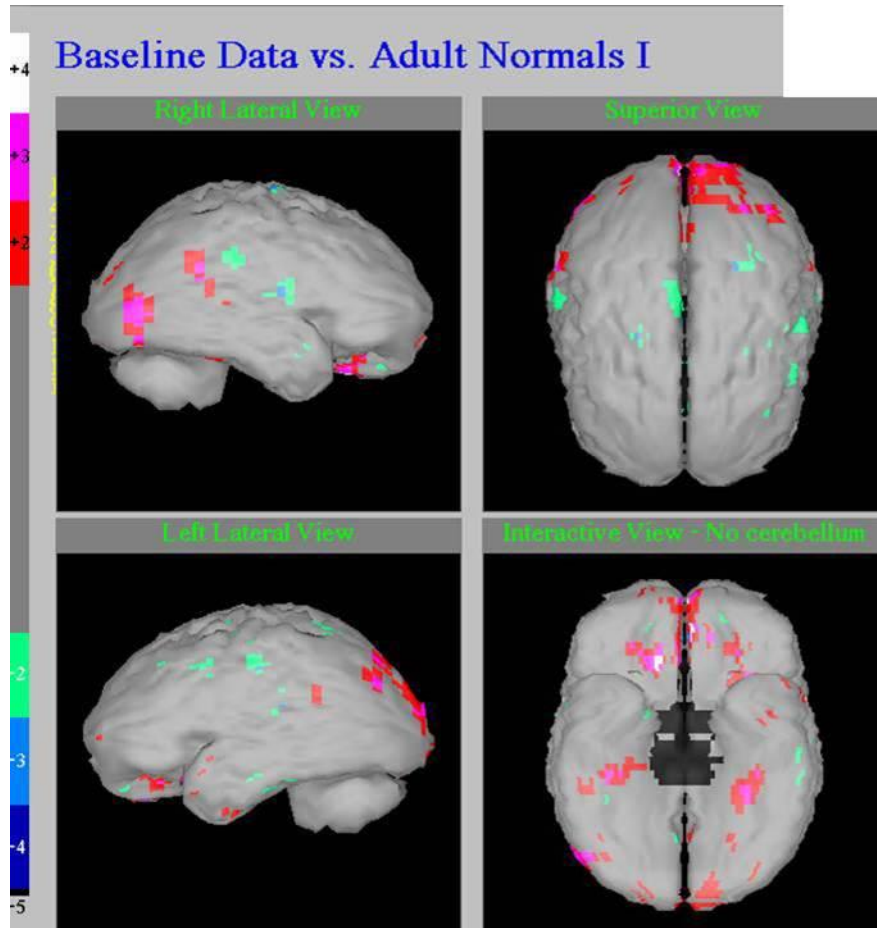


- Consider **SPECT** imaging to assess blood flow patterns which helps differentiate between various types of cognitive impairment. (fronto-temporal, etc)
- Check an **MRI** to assess structure, rule out atrophy, past strokes and other concerns

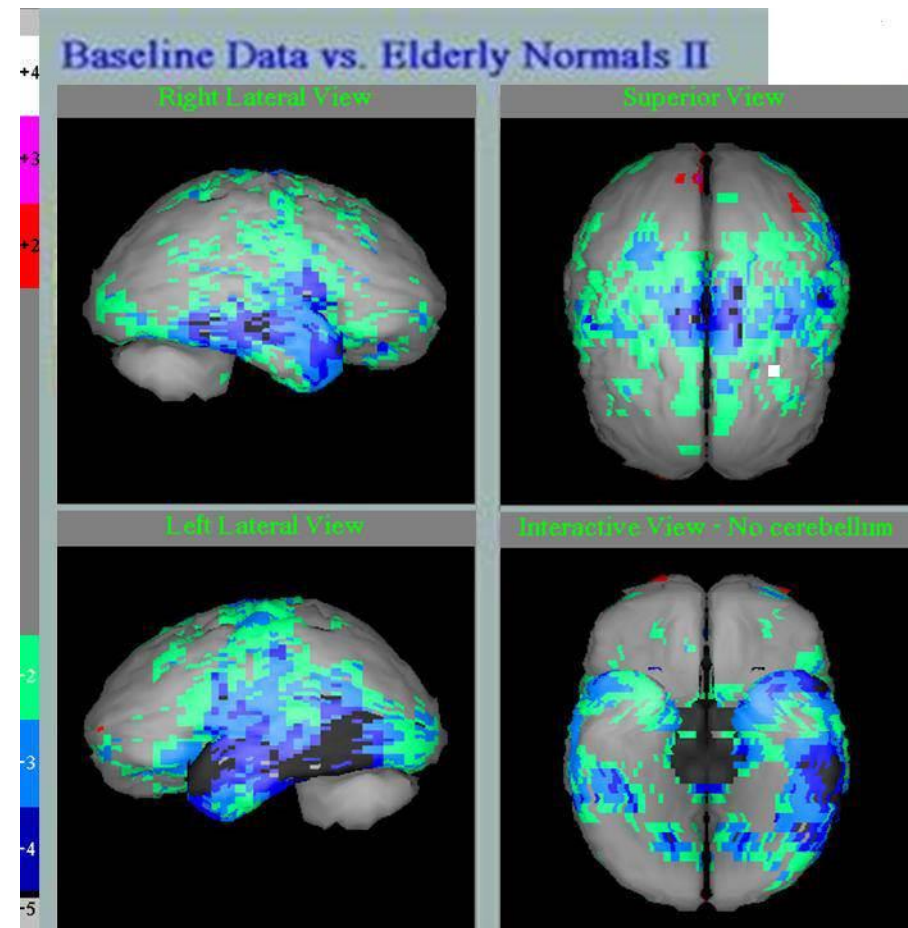
SPECT Imaging Evaluation



Normal Brain

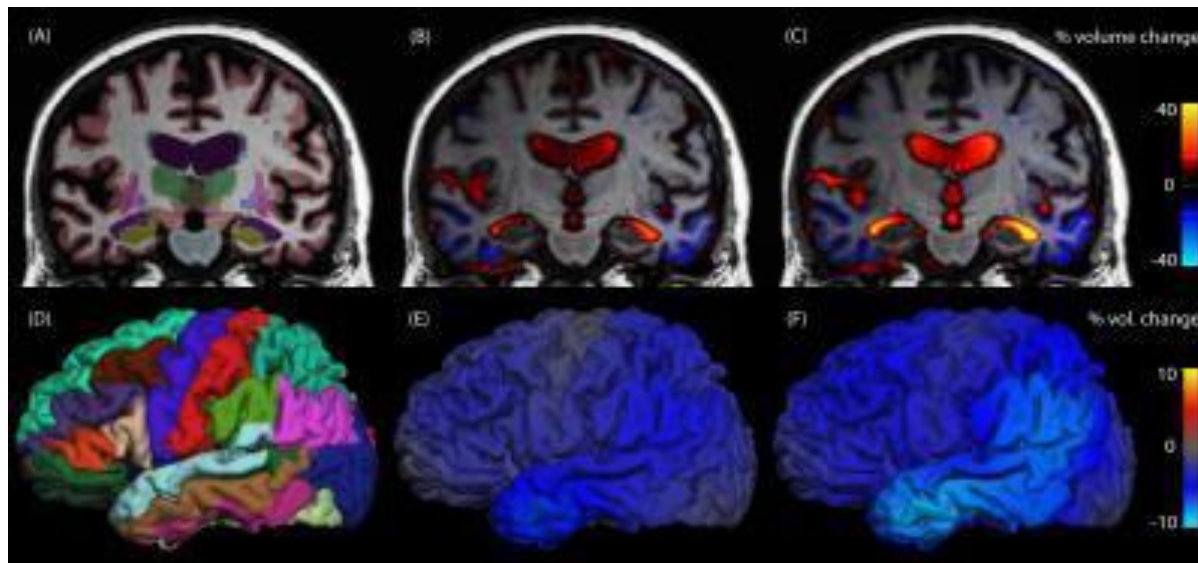


Alzheimer's Brain



Images provided by Cerescan Imaging, Denver, Co

MRI Findings in Alzheimer's



Serial MRI brain scans, taken six months apart, show progression from mild cognitive impairment to Alzheimer's disease, with significant atrophy (blue) and ventricle enlargement (orange/red). (Credit: University of California, San Diego, UCSD)

Strategies to save your brain!



- **Exercise** at least 30 min. 5 x's a week.
- Maintain a **low carbohydrate organic** diet with healthy fats. (Paleo with emphasis on fish and lean meats) Keep your BMI <26
- Consider **brain health marker testing** with your physician. (See our website for test list)
- **Minimize stress** with mindful activities. Meditate, consider neurofeedback.
- Of course, **Don't smoke!**
- **Optimize sleep** and check a sleep study if any concerns of snoring or daytime sleepiness.



More Strategies!



- **Balance hormones if needed.**
- **Basic Brain supplements- Multivitamin with methylfolate, Vitamin D, Co-Q10, Curcumin, Omega-3, Alpha-lipoic acid baby aspirin, phosphatidyl serine.**
- **Protect your brain from TBI, keep the helmet on.**
- **Keep your blood pressure under good control.**

Emerging Strategies

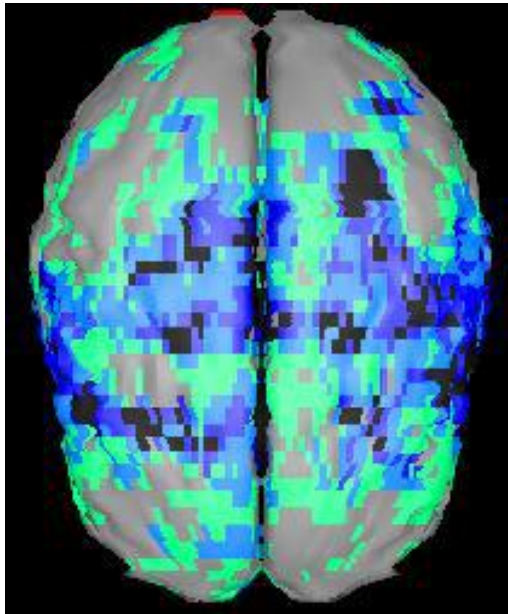


- **Near-Infrared LED Transcranial therapy**
 - On-going study at Cerescan with wounded warriors who suffered TBI.
 - Displaying improved microvascular blood flow, and cognition after 3 months of therapy.
 - Additional mechanisms include reduced inflammation, improved metabolism and neuronal regeneration.
 - Will likely show benefit for Alzheimer's as well.

Transcranial NIR LED Therapy



Pre-treatment Spect

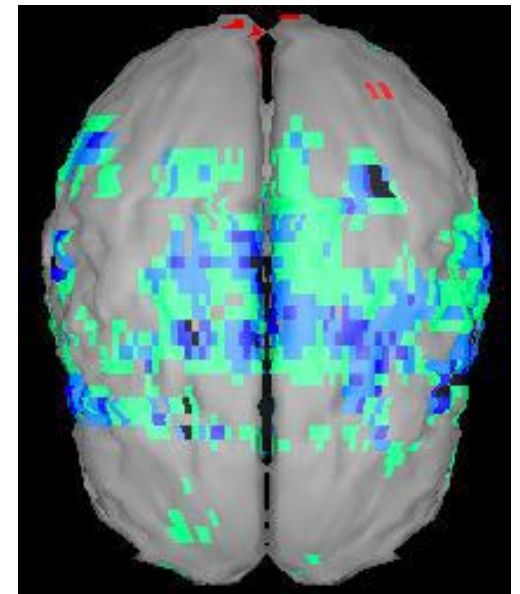


TBI Injured Veterans

NIR LED therapy x 18 tx



Post-treatment Spect



Imaging by Cerescan, NIR LED by Lumiwave



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Summary

- Be proactive with your health, especially for your brain!
- If your physician does not embrace functional medicine, find a provider that does, and add them to your team.
- For a summary of recommendations and this talk visit my website at RevolutionaryMD.com

Questions?

