Food For Thought

Creating Health Using The Wahls Protocol

Dr. Terry Wahls
Disclosures

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  - Wahls Protocol
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• The chronic disease epidemic
• My story
• Our research
• Therapeutic Lifestyle Clinic
Forager-Hunter 500,000 BC
Main Cause of death
-Infection, trauma
Mean age 30s
45% mortality before age 15
Forager-Hunter 2007
Traditional diet, no medical care
Main cause of death
Infection, trauma
Often live into 60s and 80s
Forager-Hunter to Farmer -10,000 BC

↑ fertility, infection; ↓ height
Industrial Revolution 1800s

↑ sugar, white flour; ↓ breast feeding

↑ obesity, heart disease, diabetes

After World War II 1950s
↑ sugar, ↑ vegetable oils, ↑HFCS, ↑ Trans fats
↑ ↑obesity, heart disease, diabetes
Chronic Medical Diseases

Millions of Americans Affected

- **Diabetes** 25 M
  - Diagnosed 18 M
  - Undiagnosed 7 M
- **Cancer** 25 M
- **Heart disease** 25 Million
- **Autoimmune** 75 Million
  - Diagnosed 25 Million
  - Symptoms + Autoantibodies 50 Million
- **Overweight/Obese**
  - 69% of us - 220 M
1 in 3 children will become severely obese and diabetic
A Frightening Trend*

America’s Brain Trouble

• Mental Illness 25% adults - 54 million
• Dementia – 5 Million
• Parkinson’s disease 1 Million
• Multiple sclerosis 800,000
• Schizophrenia 200,000
“...we have been able to identify modifiable behavioral factors, including specific aspects of diet, overweight, inactivity, and smoking that account for over 70% of stroke and colon cancer, over 80% of coronary heart disease, and over 90% of adult-onset diabetes.”

Willett, WC. Science, 2002:296, 695-697
Multiple Sclerosis Genetic Risk

- One parent 3%
- Sibling – 5%
- Two parents 30%

Food Is the Most Powerful Environmental Factor
Sugar intake per capita in the United Kingdom from 1700 to 1978 (30, 31; ○) and in the United States from 1975 to 2000 (32; ♦) is compared with obesity rates in the United States in non-Hispanic white men aged 60–69 y (17; •).

When our food lacks the key building blocks, molecules do not get made correctly.
Sugar turns genes ‘on’ and ‘off’ creating an inflamed disease prone body

Increased risk of High Blood Pressure, Obesity, Diabetes, Dementia, Heart Disease, Mental Health Problems, Neurological Problems, Autoimmunity and Cancer
Gluten sensitivity is characterised by abnormal immune response to gluten in genetically susceptible individuals. In some individuals, gluten sensitivity was shown to manifest solely with neurological dysfunction. Also 90% of gluten sensitive individuals have no GI symptoms.
Figure 2  MRI in four patients with gluten encephalopathy  The extent and variability of white matter abnormalities caused by gluten sensitivity can be seen in these four patients (A–D). A and C show diffuse white matter changes, whereas B and D show more f...

Gluten sensitivity: from gut to brain

The Lancet Neurology Volume 9, Issue 3 2010 318 - 330

http://dx.doi.org/10.1016/S1474-4422(09)70290-X
36 Key Micronutrients

Neuroprotection Course


<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Alpha carotene</th>
<th>Carnitine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A, retinol (animal form of vitamin A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;1&lt;/sub&gt; (thiamine)</td>
<td>Beta carotene</td>
<td>Lipoic acid</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;2&lt;/sub&gt; (riboflavin)</td>
<td>Beta cryptoxanthin</td>
<td>Creatine</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;3&lt;/sub&gt; (niacin)</td>
<td>Lutein</td>
<td>Cholesterol</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;5&lt;/sub&gt; (Pantothenic acid)</td>
<td>Lycopene</td>
<td>Alpha-linolenic fatty acid (ALA)</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;6&lt;/sub&gt; (pyridoxine)</td>
<td>Zeaxanthin</td>
<td>Eicosapentaenoic acid (EPA)</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;9&lt;/sub&gt; (folic acid)</td>
<td>Iron</td>
<td>Docosahexaenoic acid (DHA)</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;12&lt;/sub&gt; (cobalamin)</td>
<td>Copper</td>
<td>Arachidonic acid (AA)</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>Zinc</td>
<td>Gamma-linolenic fatty acid (GLA)</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>Iodine</td>
<td></td>
</tr>
<tr>
<td>Vitamin E</td>
<td>Magnesium</td>
<td>N Acetyl cysteine</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>Selenium</td>
<td>Taurine</td>
</tr>
</tbody>
</table>
Since World War II

- >80,000 chemicals have been registered with the E.P.A. due to toxic effects
200+ Chemicals Found
In Cord Blood/Breast milk

- Herbicides
- Pesticides
- Dioxins
- Plastics
- Solvents
- Heavy metals: lead, mercury, arsenic

Toxins turn genes ‘on’ and ‘off’ Increasing the risk of developing

Brain Issues
- Autoimmunity
- Autism spectrum
- Behavior
- Developmental delay
- Attention deficient/Hyperactivity disorder
- Neuropathy
- Parkinson’s
- Schizophrenia

Chronic Medical Diseases
- Allergy/Asthma
- Autoimmunity
- Anemia
- Cancer
- Chronic fatigue
- Diabetes
- Early Puberty/Infertility
- Erectile dysfunction
- Heart disease
- Hypertension
- Kidney
- Osteoporosis
Toxins and Disease Associations Sources

• Agency for Toxic Substances and Disease Registry  
  – http://www.atsdr.cdc.gov/

• Health And Toxicology Specialized Information Services  

• National Pesticide Information Center  
  – http://npic.orst.edu/rmpp.htm

• TOXNET  

• CDC's Third national Report on Human Exposure to Environmental Chemicals  
Daily - Eat 9 Cups Vegetables/Fruit

3 Greens
3 Colored
3 Sulfur
Grass-fed Meats, Organ Meats, and Wild Fish
Seaweed
One of the best natural sources of iodine
Reduced Toxin Exposure
Improved Elimination of Toxins

3 Greens

3 Colored

3 Sulfur
Improved Elimination of Lead and Mercury
9 Months of Paleo Diet, Exercise, NMES, Stress Management, Learning

http://www.casesjournal.com/content/2/1/7601
Case report

Neuromuscular electrical stimulation and dietary interventions to reduce oxidative stress in a secondary progressive multiple sclerosis patient leads to marked gains in function: a case report

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Received: 5 May 2009  Accepted: 17 July 2009  Published: 2009


This article is available from: http://casesjournal.com/casesjournal/article/view/7601

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<table>
<thead>
<tr>
<th>Food</th>
<th>Instruction</th>
<th>Servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green leafy vegetables</td>
<td>Recommended*</td>
<td>3 cups cooked/6 cups raw=3srvg</td>
</tr>
<tr>
<td>Sulfur-rich vegetables</td>
<td>Recommended*</td>
<td>3 cups raw or cooked=3srvg</td>
</tr>
<tr>
<td>Intensely colored fruits or</td>
<td>Recommended*</td>
<td>3 cups raw or cooked =3srvg</td>
</tr>
<tr>
<td>vegetables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omega-3 oils</td>
<td>Encouraged</td>
<td>2 tablespoons</td>
</tr>
<tr>
<td>Animal protein</td>
<td>Encouraged</td>
<td>4 ounces or more</td>
</tr>
<tr>
<td>Gluten-containing grain</td>
<td>Excluded</td>
<td></td>
</tr>
<tr>
<td>Dairy</td>
<td>Excluded</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>Excluded</td>
<td></td>
</tr>
</tbody>
</table>
Daily - Eat 9 Cups Vegetables/Fruit

- 3 Greens
- 3 Colored
- 3 Sulfur
Greens, sulfur, color, grass fed meat, wild fish, organ meat and seaweed
Methyl folate, methyl B12, EFAs, Vitamin D
A Multimodal Intervention for Patients with Secondary Progressive Multiple Sclerosis: Feasibility and Effect on Fatigue

Babita Bisht, BPT; Warren G. Darling, PhD; Ruth E. Grossmann, RN, PhD; E. Torage Shivapour, MD; Susan K. Lutgendorf, PhD; Linda G. Snetselaar, PhD, RD, LD; Michael J. Hall, PhD; M. Bridget Zimmerman, PhD and Terry L. Wahls, MD

Abstract

Background: Multiple sclerosis is an autoimmune disease influenced by environmental factors. Objectives: The feasibility of a multimodal intervention and its effect on perceived fatigue in patients with secondary progressive multiple sclerosis were assessed. Design/setting: This was a single-arm, open-label intervention study in an outpatient setting. Interventions: A multimodal intervention including a modified paleolithic diet with supplements, stretching, strengthening exercises with electrical stimulation of trunk and lower limb muscles, meditation, and massage was used. Outcome measures: Adherence to each component of the intervention was calculated using daily logs. Side-effects were assessed from a monthly questionnaire and blood analyses. Fatigue was assessed using the Fatigue Severity Scale (FSS). Data were collected at baseline and months 1, 2, 3, 6, 9, and 12. Results: Ten (10) of 13 subjects who were enrolled in a 2-week run-in phase were eligible to continue in the 12-month main study. Of those 10 subjects, 8 completed the study and 6 subjects fully adhered to the study intervention for 12 months. Over a 12-month period, mean adherence to diet exceeded 90% of days and to exercise exceeded 80% of days.
A Multimodal Intervention for Patients with Secondary Progressive Multiple Sclerosis: Feasibility and Effect on Fatigue

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Abstract

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Objectives: The feasibility of a multimodal intervention and its effect on perceived fatigue in patients with

Side effect – Overweight and obese subjects lost weight and got to a healthy weight
Fatigue Severity Scale (7 -1, 1=no fatigue) decreased by 2.38 from 5.70 at baseline to 3.32 at 12 months (p=0.0008).
Multimodal intervention improves fatigue and quality of life in subjects with progressive multiple sclerosis: a pilot study

Background: Fatigue is a disabling symptom of multiple sclerosis (MS) and reduces quality of life. The aim of this study was to investigate the effects of a multimodal intervention, including a modified Paleolithic diet, nutritional supplements, stretching, strengthening exercises with electrical stimulation of trunk and lower limb muscles, and stress management on perceived fatigue and quality of life of persons with progressive MS.

Methods: Twenty subjects with progressive MS and average Expanded Disability Status Scale (EDSS) score of 6.2 (range: 3.5–8.0) participated in the 12-month phase of the study. Assessments were completed at baseline and at 3 months, 6 months, 9 months, and 12 months. Safety analyses were based on monthly side effects questionnaires and blood analyses at 1 month, 3 months, 6 months, 9 months, and 12 months.

Results: Subjects showed good adherence (assessed from subjects’ daily logs) with this intervention and did not report any serious side effects. Fatigue Severity Scale (FSS) and Performance Scales-fatigue subscale scores decreased in 12 months (P<0.0005). Average FSS scores of eleven subjects showed clinically significant reduction (more than two points, high response) at 3 months, and this improvement was sustained until 12 months. Remaining subjects (n=9, low responders) either showed inconsistent or less than one point decrease in average FSS scores in the 12 months. Energy and general health scores of RAND 36-item Health Survey (Short Form-36) increased during the study (P<0.05). Decrease in FSS scores during the 12 months was associated with shorter disease duration (r=0.511, P=0.011), and lower baseline Patient Determined Disease Steps score (r=0.563, P=0.005) and EDSS scores (r=0.501, P=0.012). Compared to low responders, high responders had lower level of physical disability (P<0.05) and lower intake of gluten, dairy products, and eggs (P=0.036) at baseline. High responders underwent longer duration of massage and stretches per muscle (P<0.05) in 12 months.

Conclusion: A multimodal intervention may reduce fatigue and improve quality of life of subjects with progressive MS. Larger randomized controlled trials with blinded raters are needed to prove efficacy of this intervention on MS-related fatigue.

Keywords: modified Paleolithic diet, exercise, neuromuscular electrical stimulation, stress management, fatigue, quality of life, multiple sclerosis
SF-36 energy, SF-36 general health and FSS-9 scores at baseline, and 3, 6, 9 and 12 months after the intervention and correlation of mean SF-36 energy and mean general health scores with mean FSS-9 scores at baseline, 3, 6, 9 and 12 months. r = Pearson’s correlation coefficient. Symbol and error bars = Mean ± SE. Significant difference from baseline **p<0.0005, *p<0.05.

Degenerative Neurological and Neuromuscular Disease 2015:5
Provigil reduced Fatigue Severity Scale score by 0.75 (p= 0.07).
Subject 3- Baseline and 12 Month Walk

SPMS
TUG-127 sec.
FSS-5.6

SPMS
TUG-41.8 sec.
FSS-4.4
Subject 3- Stair Climbing at 12 months
Subject 11- Baseline and 3 Month Walk

SPMS
TUG-14.9 sec.
FSS-5.3

SPMS
TUG- 8.6 sec.
FSS-1.4
Subject 11- Jogging & Jumping at 6 months
Factors Associated With Success

- Family intervention / support
- Less disability
- Shorter disease duration
- Intervention Dose
Epigenetic Environmental Factors

- Diet quality
- Toxins - including tobacco
- Physical activity
- Stress
- Vitamin D
- Family life

- Hormonal balance
- Infection
- Microbiome alteration
- Trauma - physical
- Trauma - psychological
- Sleep quality
- Social networks
Creating Health Using Diet and Lifestyle

http://www.casesjournal.com/content/2/1/7601
Brent
Was taking –
2 pills for Diabetes Mellitus
1 pill for high blood pressure
1 pill for high cholesterol

After adopting The Wahls Protocol™
Lost 95 lbs without being hungry
Takes no medication
Before Wahls Protocol™ program
3 Pills for diabetes 2/ BP
Chronic severe pain due to fibromyalgia 2

After
Down 200 lbs.
No Pills
Minimal pain
Facebook post

Jane - Primary Progressive MS which causes extreme weakness to paralysis of my left limbs. I thought my cycling days were over. Following the Wahls diet this past year, I just finished all 407 miles of RAGRAI.
Parkinson’s dramatically helped using Wahls Protocol
August 10, 2012  March 21, 2013
(All the proof I need that healthy food heals)
Introduction
PART ONE: Before You Get Started
PART TWO: Eating For Your Cellular Health
PART THREE: Going Beyond Food
APPENDICES:
• Appendix A: The Wahls Protocol Complete Food Lists
• Appendix B: Nutrient Comparison Tables
• Appendix C: Resources
• www.terrywahls.com

• Download Toxin and Disease Chart to learn what toxins are associated with top diseases in US