

HEALTH ADVISORY

YOUR BRAIN AND INFLAMMATION

Per Dr. David Pearlmutter, renowned Neurologist and Fellow of the American College of Nutrition

- *Your brain weighs three pounds and has one hundred thousand miles of blood vessels.*
- *contains more connections than there are stars in the Milky Way.*
- *is the fattest organ in your body.*

WHY IS THIS INFORMATION SO IMPORTANT?

- Healthcare today cost 2.5 trillion dollars and is rising.
- According to the CDC, chronic disease accounts for 70% of the deaths and 75% of the healthcare costs in the United States.
- 70% of those costs are for diagnostic procedures and treatments that could be avoided through better lifestyle choices!
- Increasingly, we are hormonally imbalanced and overweight due to diets overdoes on insulin and glucose.
- The root cause is tied to how we eat, how we move, missing nutrients, age related changes and increased exposure to environmental toxins that disrupt our biochemistry.

“My people perish for lack of knowledge.”

Our Biological House is on Fire!!!

- Lifestyle
- Insulin Resistance
- Elevated Glucose Levels
- Poor Dietary Choices

Inflammation increases insulin resistance which leads to more inflammation. This is known as Metabolic Syndrome.

THE SMOLDERING FIRE WITHIN...

WHAT IS SYTEMIC (WHOLE BODY) INFLAMMATION?

INFLAMMATION: a natural and necessary response in the body to injury or insult e.g. a sore throat or an infected wound is a type of inflammation in the body.

Arthritis is also an inflammatory process.

Any type of inflammation sets in motion a cascade of events in the body which mobilize white blood cells and various chemicals to defend against any foreign invader. Inflammation is not totally bad.

SYSTEMIC INFLAMMATION: the body is overwhelmed and the immune system shifts into high gear spreading the fire of inflammation through the body.
IT IS A TYPE OF SILENT, SYSTEMIC INFLAMMATION THAT WREAKS HAVOC IN YOUR BODY AND IN YOUR BRAIN.

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YOUR BRAIN AND INFLAMMATION

THE CORNERSTONE OF ALL DEGENERATIVE CONDITIONS, INCLUDING BRAIN DISORDERS, IS INFLAMMATION. WHICH CAN BE TRIGGERED BY CARBS, ESPECIALLY THOSE CONTAINING GLUTEN OR HIGH IN SUGAR.

ELEVATED CYTOKINES ARE SEEN IN SEVERAL DISEASES SUCH AS:

- Alzheimer's disease
- Parkinson's disease
- Multiple Sclerosis
- Autism

Once the inflammatory cascade takes over, cytokines collect and can attack the brain. Cytokines are highly antagonistic to the brain, damaging tissue and leaving the brain vulnerable to dysfunction and disease.

Carbs can destroy your brain. Even so called healthy carbs like whole grains can cause:

- Dementia
- Diabetes
- Focus and Concentration problems
- Insomnia
- ADHD
- Epilepsy
- Anxiety / Chronic Stress
- Chronic Headaches
- Depression
- Decreased Libido & More

What's causing Your inflammation and how do we treat it most effectively?

Some contributing factors:

- Sugar, processed food, Trans fats
- Stress

- **Toxins**
- **Hidden food allergies and sensitivities**
- **Imbalances in gut bacteria**
- **Chronic hidden low-grade infections**
- **Sedentary lifestyle**
- **Nutritional deficiencies**

DIETARY CHOICES!!!!!!

Controlling systemic inflammation ensures:

- **Better health**
- **Greater longevity**
- **A reduction in symptoms of chronic mental and physical diseases**
- **Greater mental acuity**
- **Improved physical performance**

Dr. Hadjivassiliou, a renowned researcher in the area of brain disorders and gluten sensitivity states: **“Gluten sensitivity can be primarily, and at times, exclusively, a neurological disease”**.

Journal of Neurology, Neurosurgery and Psychiatry (2002): “Gluten Sensitivity as a Neurological Disease”:

IT HAS TAKEN NEARLY 2000 YEARS TO APPRECIATE THAT A COMMON DIETARY PROTEIN INTRODUCED TO THE HUMAN DIET RELATIVELY LATE IN EVOLUTIONARY TERMS CAN PRODUCE HUMAN DISEASE NOT ONLY IN THE GUT BUT ALSO THE SKIN AND THE NERVOUS SYSTEM. THE PROTEIN **MANIFESTATIONS OF GLUTEN SENSITIVITY CAN OCCUR WITHOUT GUT INVOLVEMENT** AND NEUROLOGISTS MUST THEREFORE BECOME FAMILIARY WITH THE COMMON NEUROLOGICAL PRESENTATIONS AND MEANS OF DIAGNOSIS OF THE DISEASE.

That gluten sensitivity is regarded as principally a disease of the small bowel is a historical misconception.

ONE OF THE MOST SIGNIFICANT MEDICAL DISCOVERIES OF THE 21ST CENTURY:

Inflammation is the #1 common denominator to all chronic disease, including heart disease, obesity, diabetes, cancer, dementia, ADHD, and depression. There is no longer debate about this in the medical community.

Alzheimer’s disease

The Modern Medical Boogeyman

This is one health worry that eclipses all others as people get older. They fear falling prey to Alzheimer’s or some other form of dementia that leaves them

unable to think, reason, and remember. Research shows how deep this angst runs. In 2011, by the Met Life foundation showed that 31% of people fear dementia more than death or cancer. And this fear doesn't just affect older people.

1) Met Life Foundation, "What America Thinks: Met Life Foundation Alzheimer's Study." Study conducted by Harris Interactive, February 2011.

There are plenty of perpetual myths about the basket of brain degenerating maladies that include Alzheimer's:

- It's in the genes
- It's inevitable with age
- It's a given if you live into your eighties and beyond

NOT SO FAST!!!!

IT'S IN THE FOOD YOU EAT!

I am here to tell you that the fate of your brain is not in your genes! It's not inevitable! Moreover, if you are a person who suffers from another type of brain disorder, such as:

- chronic headaches
- depression
- epilepsy
- extreme moodiness

The culprit may not be encoded in your DNA!

Yes, you read that right: Brain dysfunction starts with your daily bread. Modern grains are silently destroying your brain.

- | | |
|----------------|--------------------------------|
| ■ Whole wheats | ■ Live grains |
| ■ Whole grains | ■ Stone Ground etc. |
| ■ Multi-grains | ■ White flour, pasta, and rice |
| ■ Seven grain | |

Our most beloved staple is a terrorist group that bullies our most precious organ, THE BRAIN.

THIS ISN'T SCIENCE FICTION; IT'S DOCUMENTED FACT.

Brain disease can largely be prevented through the dietary choices you make in life.

Every day we hear something new in our war against chronic diseases. Despite the volumes of information about how to stay fit and trim, we are getting fatter and fatter every year. There are soaring rates of diabetes, heart disease, and cancer.

WE ALL KNOW THE DRILL:

- Eat your vegetables
- Brush your teeth
- Sweat once in a while
- Get plenty of rest
- Don't smoke
- Laugh more

There is a relationship between how you live and your risk of developing an array of brain related problems.

Research supports the fact that grains and other damaging carbohydrates are the origin of many of our modern scourges linked to the brain including: chronic headaches, insomnia, anxiety, depression, epilepsy, movement disorders, schizophrenia, ADHD and those senior moments.

YOUR BRAIN AND INFLAMMATION

Alzheimer's Disease: The Modern Medical Boogeyman

The idea that our brains are sensitive to what we eat has been quietly circulating in our most prestigious medical literature recently.

THIS INFORMATION BEGS TO BE KNOWN BY THE PUBLIC...WHICH IS INCREASINGLY DUPED BY AN INDUSTRY THAT SELLS FOODS COMMONLY THOUGHT OF AS "NUTRITIOUS".

CAN WE REALLY CHANGE OUR DNA WITH FOOD DESPITE THE GENES WE'VE INHERITED?

In this ground breaking book, Grain Brain, Dr. Pearlmutter helps us get to the bottom of this very question.

GRAIN BRAIN

Our DNA determines how we process foods and how we respond to the foods we eat. Food is a powerful epigenetic modulator...meaning it can change our DNA for better or worse.

We are increasingly challenging our physiology with ingredients for which we are not genetically prepared.

For instance, the 133 pounds of wheat we consume today shares almost no genetic, structural, or chemical likeness to the wild einkorn variety that our hunger-gatherer forefathers may have stumbled upon.

Alzheimer's Disease: TYPE 3 DIABETES

Studies describing Alzheimer's diseases as a third type of diabetes began to emerge in 2005, but the link between poor diet and Alzheimer's has only recently been brought to light with newer studies showing how this can happen.

According to Dr. Pearlmutter:

- We can reprogram our genetic destiny through specific dietary choices and lifestyle habits.
- We can spur the growth of new brain cells at any age.

Diabetes and brain diseases are both costly and preventable and are uniquely tied together. Having diabetes doubles your risk for Alzheimer's disease. Many of diseases that involve the brain share common denominators. Dr. Pearlmuter points out surprising connections between vastly different brain disorders, such as Parkinson's and a propensity to engage in violent behavior, that point to root causes of an array of afflictions that involve the brain.

Obese people are at a greater risk of impaired brain function and those with diabetes are at least twice as likely to develop Alzheimer's. The prevalence of type 2 diabetes (which accounts for 90-95% of all diabetes cases in the U.S.) has tripled in the past 40 years.

1. Eric Steen, et al., "Impaired Insulin and Insulin-like Growth Factor Expression and Signaling mechanisms in Alzheimer's Disease – Is This Type 3 Diabetes?" *Journal of Alzheimer's Disease* 7, no. 1 (2005): 63-80.
2. R.O. Roberts, et al., "Relative Intake of Macronutrients Impacts Risk of Mild Cognitive Impairment or Dementia," *Journal of Alzheimer's Disease* 32, no. 2 (2012): 329-39.
3. <http://www.doctoroz.com/videos/alzheimers-diabetes-brain>.
4. Mark Bittman, "Is Alzheimer's Type 3 Diabetes?" *New York Times*, September 25, 2012, <http://opinionator.blogs.nytimes.com/2012/09/25/bittman-is-alzheimers-type-3-diabetes/> (accessed October 15, 2012). Bittman's piece provides a great explanation of type 3 diabetes.

Essentially, as previously discussed, when cells are constantly exposed to high levels of insulin as a result of a persistent intake of glucose (much of which is caused by an over consumption of hyper processed foods filled with refined sugars that spike insulin levels beyond a healthy limit) our cells desensitize themselves to insulin causing insulin resistance. The cells fail to retrieve glucose from the blood and the pancreas responds by pumping out more insulin...the end of this series of events eventually culminates in type 2 diabetes. Throughout this chain of events, inflammation runs rampant in the body.

It is this insulin resistance that sparks the formation of those infamous plaques that are present in diseased brains.

These plaques are the buildup of an odd protein that essentially hijacks the brain and takes the place of healthy brain cells.

Researchers have known for some time now that the cornerstone of all degenerative conditions, including brain disorders, is inflammation. What they didn't have documented until now are the instigators of that inflammation... What they found out is that GLUTEN and a HIGH CARBOHYDRATE diet are among the most prominent stimulators of inflammatory pathways that reach the brain.

Alzheimer's Disease: The Modern Medical Boogeyman

According to Dr. Pearlmuter, "THERE IS LITTLE DOUBT THAT ONE OF THE LARGEST AND MOST FAR-REACHING EVENTS IN THE ULTIMATE DECLINE OF

BRAIN HEALTH IN MODERN SOCIETY HAS BEEN THE INTRODUCTION OF WHEAT GRAIN INTO THE HUMAN DIET”.

Alzheimer’s Disease: TYPE 3 DIABETES

Two of the biggest myths you will have to free yourself from is:

- 1. A low fat, high-carb diet is good**
- 2. Cholesterol is bad**

Study after study shows that high cholesterol reduces your risk for brain disease and increases longevity. By the same token, high levels of good dietary fats have been proved to be key to health and peak brain function.

The famous Framingham Heart Study has added volumes of data to our understanding of certain risk factors for disease, including most recently, dementia.

According to the study published in 2005, “There was a significant positive linear association between total cholesterol and measures of verbal fluency, attention/concentration, abstract reasoning, and a composite score measuring multiple cognitive domains”

Moreover, “participants with ‘desirable’ total cholesterol (less than 200) performed less well than participants with borderline high cholesterol levels (200-239) and participants with high total cholesterol levels (greater than 240).”

In other words, the people with the highest cholesterol levels scored higher on cognitive tests than those with lower levels.

Penelope K. Elias, et al., “Serum Cholesterol and Cognitive Performance in the Framingham Heart Study,” *Psychosomatic Medicine* 67, no. 1 (2005): 24-30.

In the journal *Neurology*, researchers published a study noting that people whose blood sugar is on the high end of the “normal range” have a much greater risk for brain shrinkage.

Nicolas Cherbuin, et al., “Higher Normal Fasting Plasma Glucose Is Associated with Hippocampal Atrophy: The PATH Study,” *Neurology* 79, no. 10 (January/February 2012): 1019-26. doi: 10.1212/WNL.0b613e31826846de.

Remember high glucose requires more insulin which causes insulin resistance which creates more inflammation.

We have known for a long time that brain disorders and dementia are associated with brain shrinkage. But, knowing now that such shrinkage can happen as a result of blood sugar spikes in the “normal” range has tremendous implications for anyone who eats blood sugar-boosting foods (i.e. carbohydrates). We are now being forced to regard inflammation in a whole new light. It underpins the very process of brain degeneration.

Your Brain on FIRE!!!

At the center of chronic inflammation is the concept of “oxidative stress” – a biological type of “rusting”. This gradual corrosion happens on all tissues. It is a normal process but when it runs rampant, it can become deadly.

Alzheimer’s Disease: More on Cholesterol

Statins are among the most commonly prescribed drugs to lower cholesterol. Statins interfere with the pathway of COQ10 synthesis and the body and the brain are deprived of it. New research reveals that statins may lessen brain function and increase the risk for heart disease. The reason is simple:

THE BRAIN NEEDS CHOLESTEROL TO THRIVE!

C H O L E S T E R O L

- It is a critical brain nutrient essential for the function of neurons.
- It plays a fundamental role as a building block of the cell membrane.
- It acts as an antioxidant and a precursor to Vitamin D as well as the sex hormones...testosterone and estrogen.

Neurons are unable to generate significant cholesterol on their own but rather rely on delivery of cholesterol from the blood stream via the carrier protein, LDL. In reality, LDL is not a cholesterol molecule at all.

But what about cholesterol and coronary artery disease? Really, it has little to do with cholesterol and more to do with OXIDIZED LDL.

And how does LDL become so damaged that it’s no longer able to deliver cholesterol to the brain?

ONE OF THE MOST COMMON WAYS IS THROUGH PHYSICAL MODIFICATION BY GLUCOSE!!

Sugar molecules attach themselves to LDL and change the molecule’s shape, rendering it less useful while increasing free radical production.

As we are beginning to see, it’s all connected: dietary choices, insulin resistance, inflammation, oxidative stress, total health and brain health.

Call Total Health Solutions today for a comprehensive evaluation of your health status.

Teresa Boland