

THE BIG IDEAS

Grain = Brain Killer

The surprising truth.

Inflammation

The cornerstone of disease.

Quick Quiz

Sugar, candy, banana, wheat bread.

Case Studies

That are truly remarkable.

Eating Fat vs. Being Fat

Big difference.

Omegas

How's your ratio?

Cigarettes + Carbs

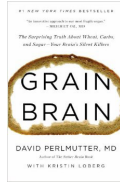
→ Lung cancer + obesity.

Your Second Brain

Produces more serotonin than #1.

Exercise!

Extraordinary way to boost the brain.



Grain Brain

The Surprising Truth About Wheat, Carbs, and Sugar—Your Brain's Silent Killers

BY DAVID PERLMUTTER, MD · LITTLE, BROWN © 2013 · 323 PAGES

“Yes, you read that right: Brain dysfunction starts in your daily bread, and I’m going to prove it. I’ll state it again because I realize it sounds absurd: Modern grains are silently destroying your brain. By ‘modern,’ I’m not just referring to the refined white flours, pastas, and rice that have already been demonized by the anti-obesity folks; I’m referring to all the grains that so many of us have embraced as being healthful—whole wheat, multigrain, seven-grain, live grain, stone-ground, and so on. Basically, I am calling what is arguably our most beloved dietary staple a terrorist group that bullies our most precious organ, the brain. I will demonstrate how fruit and other carbohydrates could be health hazards with far-reaching consequences that not only will wreak physical havoc on your brain, but will accelerate your body’s aging process from the inside out. This isn’t science fiction; it’s now documented fact.

It is my objective in writing *Grain Brain* to provide information that is sound and based on evolutionary, modern scientific and physiological perspectives. This book goes outside the box of the layman’s accepted dogma—and away from vested corporate interests. It proposes a new way of understanding the root cause of brain disease and offers a promising message of hope: Brain disease can be largely prevented through the choices you make in life. So if you haven’t figured it out by now, I’ll be crystal clear: This is not just another diet book or generic how-to guide to all things preventive health. This is a game-changer.”

~ David Perlmutter, MD from *Grain Brain*

“The information that I will reveal to you is not just breathtaking; it’s undeniably conclusive. You’ll be shifting how you eat immediately.”

~ David Perlmutter, MD

[David Perlmutter](#), MD is the only medical doctor in the United States who is both a board certified neurologist *and* a member of the American College of Nutrition.

He combines his deep knowledge in neuroscience + nutrition in this hard-hitting, scientifically rigorous look at how, in short, grains are destroying our brains.

Dementia. ADHD. Epilepsy. Anxiety. Chronic headaches. Depression.

They all have their roots in neurological dysfunction and they are all impacted by our nutrition.

If you or someone you know suffers from any of these issues, I think you’ll appreciate the insights Perlmutter shares in this great book. (Get a copy [here](#).)

The book is packed (!) with scientific details, self-assessments, recommended tests, supplements, and a four-week program to optimize.

We’re barely going to scratch the surface of the book in this brief Note, but I’m excited to share some of my favorite Big Ideas so let’s jump straight in!

"Beyond calories, fat, protein, and micronutrients, we now understand that food is a powerful epigenetic modulator—meaning it can change our DNA for better or worse."

~ David Perlmutter, MD

GRAIN: THE BRAIN KILLER

"While it's well established that processed foods and refined carbohydrates have contributed to our challenges with obesity and so-called food allergies, no one has explained the relationship between grains and other ingredients and brain health and, in the broader outlook, DNA. It's pretty straightforward: Our genes determine not just how we process food but, more important, how we *respond* to the foods we eat. There is little doubt that one of the largest and most wide-reaching events in the ultimate decline of brain health in modern society has been the introduction of wheat grain into the human diet. While it's true that our Neolithic ancestors consumed minuscule amounts of this grain, what we now call wheat bears little resemblance to the wild einkorn variety that our forebears consumed on rare occasions. With modern hybridization and gene-modifying technology, the 133 pounds of wheat that the average American consumes each year shares almost no genetic, structural, or chemical likeness to what hunter-gatherers might have stumbled upon. And therein lies the problem: We are increasingly challenging our physiology with ingredients for which we are not genetically prepared."

Several things to note here.

First, it was only 10,000 years ago that we introduced domesticated grains into our diet. That's a very (!) brief span of time in the relative 2.5 million years of evolution that preceded its introduction.

Our bodies simply did not evolve to consume grains in any significant quantity and CERTAINLY not 133 (!!!) pounds of the stuff every year.

Think about that for a moment.

We ate minuscule amounts of wild grain until very recently. Now we eat 133 pounds of it!! You tell me if that sounds like a good idea.

Not only that, but the wheat we eat today bears little resemblance to that which existed in the wild years ago. Perlmutter goes into detail about all the changes. Check out the book plus our Notes on *Wheat Belly* for more on how the incessant genetic tinkering has led to a very different type of wheat.

For now, remember that 133 pound stat and consider how that might be driving the obesity/diabetes/dementia issues our society faces as you consider your own dietary habits and how they may be setting you up for challenges!

INFLAMMATION: THE CORNERSTONE OF DEGENERATIVE CONDITIONS

"Researchers for some time now have known that the cornerstone of all degenerative conditions, including brain disorders, is inflammation. But what they didn't have documented until now are the instigators of that inflammation—the first missteps that prompt this deadly reaction. And what they are finding is that gluten, and a high carbohydrate diet for that matter, are among the most prominent stimulators of inflammatory pathways that reach the brain. What's most disturbing about this discovery, however, is that we often don't know when our brains are being negatively affected. Digestive disorders and food allergies are much easier to spot because symptoms such as gas, bloating, pain, constipation, and diarrhea emerge relatively quickly. But the brain is a more elusive organ. It could be enduring assaults at a molecular level without your feeling it. Unless you're nursing a headache or managing a neurological problem that's clearly evident, it can be hard to know what's going on in the brain until it's too late. When it comes to brain disease, once the diagnosis is in for something like dementia, turning the train around is hard."

Inflammation.

"It is my belief that gluten is a modern poison."

~ David Perlmutter, MD

"Gluten—which is Latin for 'glue'—is a protein composite that acts as an adhesive material, holding flour together to make bread products, including crackers, baked goods, and pizza dough."

~ David Perlmutter, MD

"The bottom line is that if you want to reduce oxidative stress and the action of free radicals harming your brain, you have to reduce the glycation of proteins. Which is to say, you have to diminish the availability of sugar. Pure and simple."

~ David Perlmutter, MD

If you read enough nutrition books, we quickly discover that inflammation is the cornerstone of all degenerative diseases.

Which, of course, begs the inquiry into what causes inflammation, eh?

Gluten is an obvious inflammatory agent. And, as Perlmutter articulates in the book, growing research is showing that a high carb diet is another prominent culprit.

Perlmutter tells us that we need to remember that anytime we're introducing an inflammatory agent into our bodies, we're making ourselves more vulnerable to everything from chronic headaches and brain fog to depression and Alzheimer's.

We need to remember that brain disorders don't just pop out of nowhere. Like heart disease, they've been growing slowly as a result of years and decades of nutritional and lifestyle choices.

Therefore, if we want to reverse existing trends and prevent full-blown bigger issues down the line, we need to pay attention NOW.

QUICK QUIZ

"When I give lectures to members of the medical community, one of my favorite slides is a photo of four common foods: (1) a slice of whole-wheat bread, (2) a Snickers bar, (3) a tablespoon of pure white sugar, and (4) a banana. I then ask the audience to guess which one produces the greatest surge in blood sugar—or which has the highest glycemic index (GI), a numerical rating that reflects a measure of how quickly blood sugar levels rise after eating a particular type of food. The glycemic index encompasses a scale of 0 to 100, with higher values given to foods that cause the most rapid rise in blood sugar. The reference point is pure glucose, which has a GI of 100.

Nine times out of ten, people pick the wrong food. No, it's not the sugar (GI = 68), it's not the candy bar (GI = 55), and it's not the banana (GI = 54). It's the whole-wheat bread at a whopping GI of 71, putting it on par with white bread (so much for thinking whole wheat is better than white). We've known for more than thirty years that wheat increases blood sugar more than table sugar, but we still somehow think that's not possible. It seems counterintuitive. But it's a fact that few foods produce as much of a surge in blood glucose as those made with wheat."

Blood sugar.

This is another huge variable in optimizing our health. Perlmutter goes into science behind the insulin/blood sugar affects of high carb diets.

And how wacky is that little survey?! Which did YOU guess had the highest glycemic index?

The slice of wheat bread? The spoonful of sugar? The Snickers bar? The banana?

Hard to believe it's the wheat bread, eh?

REMARKABLE CASE STUDIES

"Some of my most remarkable case studies involve people transforming their lives and health through the total elimination of gluten from their diets and a new appreciation for fats instead of carbs. I've watched this single dietary shift lift depression, relieve chronic fatigue, reverse type 2 diabetes, extinguish obsessive-compulsive behavior, and cure many neurological challenges, from brain fog to bipolar disorder."

The stories Perlmutter shares (in this book and in [Power Up Your Brain](#)—check out those Notes as well) are truly remarkable. Astonishing, in fact.

If you (or anyone you love) have *any* of those issues (depression, chronic fatigue, type 2 diabetes, obsessive-compulsive behavior, brain fog, bipolar), I hope you'll check out the book.

I know it's hard to believe that such a simple shift can so quickly cure so many ailments, but it does. I got tears in my eyes when I looked at the list of symptoms indicating gluten sensitivity and saw "alcoholism." I wonder if my father's issues would have vanished had he simply removed gluten from his diet and focused on a high fat approach. Sigh. It's too late to find out now but I hope that at least one person who reads this will discover life-changing benefits!

EATING FAT VS. BEING FAT

"Carbohydrates-not dietary fats-are the primary cause of weight gain. (Think about it: Many farmers fatten animals destined for the butcher block with carbohydrates like corn and grain, not fats and proteins."

~ David Perlmutter, MD

"Interestingly, the human dietary requirement for carbohydrate is virtually zero; we can survive on a minimal amount of carbohydrate, which can be furnished by the liver as needed. But we can't go long without fat. Unfortunately, most of us equate the idea of eating fat to *being fat*, when in reality, obesity—and its metabolic consequences—has almost nothing to do with dietary fat consumption and everything to do with our addiction to carbs. The same is true about cholesterol: Eating high-cholesterol foods has no impact on our actual cholesterol levels, and the alleged correlation between high cholesterol and higher cardiac risk is an absolute fallacy.

Of all the lessons in this book, the one I hope you take seriously is the following: Respect your genome. Fat—not carbohydrate—is the preferred fuel for human metabolism and has been for all of human evolution. We have consumed a high-fat diet for the past two million years, and it is only since the advent of agriculture about ten thousand years ago that carbohydrates have become abundant in our food supply. We still have a hunter-gatherer genome."

Lots of goodness in there.

First, I used to equate eating a lot of fat with *being fat*. That all changed a couple years ago when I hired Ben Greenfield (see Notes on *Beyond Training*) to help me dial in my nutrition and training.

I had moved off of a vegan diet to a Paleo approach about a year before but Ben put me on an autoimmune protocol and limited my carbs—while having me eat a TON of fat. Shockingly, my body fat went from somewhere just under 20% to less than 10%. I still can't believe that I get the vast majority of my calories from fat and—without even thinking about it!!—maintain a body fat percentage less than 10%. (That still strikes me as nuts! :)

So, we need to shake the myth that eating fat equals being fat. It's just *not* true.

Now, of course, not all fats are created equal. We're not talking about loading up on the fat found in most of the standard American diet. Via this approach, as we limit our carbs we focus on healthy dietary fats like coconut oil (super brain food!), avocados, olives and olive and that sort of thing. While we're on the subject, let's take a quick peek at the importance of dialing in our Omega 3 and 6 ratio!

"The fatter you are, the smaller your brain."

~ David Perlmutter, MD

OMEGAS: HOW'S YOUR RATIO?

"We hear so much these days about omega-3 and omega-6 fats. Overall, omega-6 fats fall under the 'bad fat' category; they are somewhat pro-inflammatory, and there is evidence that higher consumption of these fats is related to brain disorders. Unfortunately, the American diet is extremely high in omega-6 fats, which are found in many vegetable oils, including safflower oil, corn oil, canola oil, sunflower oil, and soybean oil; vegetable oil represents the number one source of fat in the American diet. According to anthropological research, our hunter-gatherer ancestors consumed omega-6 and omega-3 fats in a ratio of roughly 1:1. Today we consume ten to twenty-five times more omega-6 fats than evolutionary norms, and we've dramatically reduced our intake of healthy, brain-boosting omega-3 fats (some experts believe our increased consumption of brain-healthy omega-3 fatty acids was responsible for the threefold increase in the size of the human brain)."

"Remember, if you do nothing else recommended in this book but eliminate gluten and refined carbohydrates, you will experience profound positive effects."

~ David Perlmutter, MD

Did you catch this line? → "... there is evidence that higher consumption of these [omega-6] fats is related to brain disorders."

Good to know! Remember: We evolved to have a ratio of 1:1 between our omega-6 and omega-3 fatty acids. Now? We're at 25:1. That's not a good thing.

The solution?

Quit eating all that safflower oil, corn oil, canola oil, sunflower oil. (It's in a ton of stuff which is how we got into this problem of overconsuming it!)

We're much better off consuming coconut oil, olive oil and flaxseed oil.

And, remember: "Seafood is a wonderful source of omega-3 fatty acids, and even wild meat like beef, lamb, venison, and buffalo contain this fab fat. But a caveat to consider: If animals are fed grains (usually corn and soybeans), then they will not have adequate omega-3 in their diets and their meat will be deficient in these vital nutrients. Hence the call for consuming grass-fed beef and wild fish."

Here's to dialing in that ratio and giving our brains a nice little boost!

CIGARETTES AND CARBS

"We need to change our attitudes about cholesterol and even LDL; they are our friends, not our foes."

~ David Perlmutter, MD

"The more sugars we eat, the more we tell our bodies to transfer them to fat. This happens not only in the liver, leading to a condition called fatty liver disease, but elsewhere in the body as well. Hello, love handles, muffin tops, beer bellies, and the worst kind of fat of all—invisible visceral fat that hugs our vital organs.

I love how Taubes draws a parallel between the cause-and-effect relationship uniting carbohydrates and obesity, and the link between smoking and cancer: If the world had never invented cigarettes, lung cancer would be a rare disease. Likewise, if we didn't eat such high-carb diets, obesity would be a rare condition. I'd bet that other related conditions would be uncommon as well, including diabetes, heart disease, dementia, and cancer. And if I had to name the kingpin here in terms of avoiding all manner of disease, I'd say 'diabetes.' That is to say, don't become diabetic."

As we discussed earlier, it's not the fat we're eating that makes us fat.

It's the sugars + carbs.

And, what a fascinating way to look at the connection between carbs and obesity: If we hadn't invented cigarettes, lung cancer would be a rare disease. Likewise, if we didn't eat so many carbs, obesity would be a rare condition.

YOUR SECOND BRAIN AND ITS SEROTONIN

"If you're a chronic headache sufferer, why not try a gluten-free diet? What have you got to lose?"

~ David Perlmutter, MD

"A logical question: How does depression relate to a damaged intestine? ... The vast majority of feel-good hormones and chemicals are produced around your intestines by what scientists now call your 'second brain.' The nerve cells in your gut are not only regulating muscles, immune cells, and hormones, but also manufacturing an estimated 80 to 90 percent of your body's serotonin. In fact, your intestinal brain makes more serotonin than the brain that rests in your skull."

Did you know you have a second brain? Yep. It's in your gut. :)

And, did you know that second brain produces (way!) more serotonin than the brain that rests in your skull? Yep again. 80 to 90 percent of your serotonin is produced in your gut. (Nuts, eh?!)

Now, if our intestines are damaged, we're going to have a more difficult time absorbing essential nutrients like zinc and B vitamins.

"For many, health may not be the most important thing in life, but without it, nothing else matters. And when you have good health, pretty much anything is possible."

~ David Perlmutter, MD

So... If you or someone you know struggles with depression, take this message to heart and take care of your precious gut!!!

EXERCISE!

"Pop quiz! What's going to make you smarter and less prone to brain disease? Is it A. solving a complex brainteaser, or B. taking a walk? If you guessed A, I won't come down hard on you, but I will encourage you to go for a walk first (as fast as you can) and then sit down to work on a brainy puzzle. The answer, it turns out, is B. The simple act of moving your body will do more for your brain than any riddle, math equation, mystery book, or even thinking itself."

Exercise has numerous pro-health effects on the body—especially on the brain. It's a powerful player in the world of epigenetics. Put simply, when you exercise, you literally exercise your genetic makeup. Aerobic exercise not only turns on genes linked to longevity, but also targets the gene that codes for BDNF, the brain's 'growth hormone.' Aerobic exercise has been shown to reverse memory decline in the elderly and increase the growth of new brain cells in the brain's memory center."

Exercise. It's huge.

Perlmutter dedicates a chapter to the big three fundamentals to optimal living: Nutrition + Exercise + Sleep and helps us optimize each in his four-week plan.

For now, let's get out and move our bodies and nourish our brains, my friend! :)

B

Brian Johnson,
Chief Philosopher

If you liked this Note,
you'll probably like...

[Power Up Your Brain](#)

[Wheat Belly](#)

[The Walks Protocol](#)

About the Author of "Grain Brain"

DAVID PERLMUTTER, MD



David Perlmutter, MD, is a Board-Certified Neurologist; the president of the Perlmutter Health Center in Naples, Florida; cofounder and president of the Perlmutter Brain Foundation; and a Fellow of the American College of Nutrition. He is the recipient of numerous awards, including the Humanitarian of the Year Award from the American College of Nutrition and the Linus Pauling Award. Dr. Perlmutter is also the author of *The Better Brain Book*, *Raise a Smarter Child by Kindergarten*, and *Power Up Your Brain*. Connect at drperlmutter.com.

About the Author of This Note

BRIAN JOHNSON



Brian Johnson loves helping people optimize their lives as he studies, embodies and teaches the fundamentals of optimal living—integrating ancient wisdom + modern science + common sense + virtue + mastery + fun. Learn more and optimize your life at brianjohnson.me.