Brian Johnson's PhilosophersNotes
More Wisdom in Less Time

THE BIG IDEAS

Genes vs. Microbiome
Which one matters more?

Long-Lived Peoples
Do and don't.

Chronic Cardio
= Chronic stress.

Your Two Brains
Brain + gut. (Which is #1?)

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The Longevity Paradox

How to Die Young at a Ripe Old Age

BY STEVEN R. GUNDRY, MD · HARPER WAVE © 2019 · 384 PAGES

"Some elements of the Longevity Paradox program may be familiar, such as eating lots of certain vegetables and getting the right amounts of exercise and sleep, while others, such as tricking your body into thinking it's winter year-round to stimulate your stem cells and spacing out your meals to 'wash' your brain at night, are brand-new. These strategies have helped my patients lower their blood pressure and cholesterol markers, significantly reduce symptoms of arthritis and other joint issues, resolve MS, lupus, and other autoimmune conditions, improve heart health, and slow or reverse the progression of cancer and dementia—not to mention lose weight and look decades younger! And they accomplish this without starving, eating twigs, counting calories, or putting in hours at the gym.

It doesn't matter how old you are, how old you feel, or how sick or healthy you may be right now. As on all the best home-makeover shows, renovations happen quickly when the people in charge have the right materials and are motivated to get the job done. If you follow my plan, within just a few weeks you'll have more gut buddies and far fewer squatters, and you'll start to see and feel a difference in your energy levels, in your lack of symptoms of many of the most common diseases of aging, on your skin, and on the scale.

So let's start transforming your body into the most desirable oceanfront suite on the market for your gut bacteria. They'll be sure to thank you with a long and healthy life."

~ Steven R. Gundry, MD from *The Longevity Paradox*

"As Hippocrates famously and wisely said, 'All disease begins in the gut.' The good news is that all disease can be stopped there as well."

~ Steven Gundry, MD

How'd you like to "die young" at a ripe old age? Well... This book gives you the how to.

Dr. Steven Gundry is a former heart surgeon (plus professor and head of cardiothoracic surgery at Loma Linda University School of Medicine) who makes a compelling case for the idea that we need to invest a *lot* more time Optimizing the most ancient part of ourselves (our microbiome) if we want to extend both our life span AND our health span (aka die "young" at that ripe old age).

We covered another one of Dr. Gundry's books: *The Plant Paradox*.

This book is endorsed by Mark Hyman (see our Notes on *Eat Fat, Get Thin*), Arianna Huffington (see Notes on *The Sleep Revolution*), and David Perlmutter (see Notes on *Brain Maker* and *Grain Brain*) along with Dr. Oz and Valter Longo, Ph.D. (director of The Longevity Institute at USC and author of *The Longevity Diet*).

It's a FASCINATING look at the surprisingly powerful role our "gut buddies" play in our overall health and well-being. And, of course, it's packed with research and ideas on how we can go about Optimizing (plus a bunch of recipes and all that jazz). Get a copy of the book here.

I'm excited to share a few of my favorite Ideas we can apply to our lives TODAY, so let's jump in!

GENES VS. MICROBIOME

" I believe that the true secret of these long-lived peoples lies not in what they do eat but in what they don't eat. And what they don't eat is large amounts of animal protein. With apologies to my friends in the paleo and ketogenic communities, the facts don't lie. Not a single one of the Blue Zone populations consumes significant amounts of animal protein, and I believe that is their secret to a longer, healthier life."

~ Steven Gundry, MD

"Your fate does not lie in your genes at all—it lies in your microbiome, and many of your daily decisions about food and personal care products influence how happy or unhappy they will be in their home. Paradoxically—and here's the point to remember going forward—whatever happened to your parents or grandparents, your Ancestry.com or your 23andMe results contributes very, very little to your fate or longevity. Much more of your fate resides with the trillions of organisms living in and on you."

That's from the Introduction in which we meet our "gut buddies" hanging out in our guts (aka our "microbiome") along with their pals hanging out on our skin (put them all together for what Dr. G calls the "holobiome").

We also learn some FASCINATING things like the fact that *corn* has more genes than you and me. So do fleas.

Did you know that we humans have about 20,000 genes while corn has 32,000 genes? And water fleas? Those little guys have 31,000 genes.

What? How is that possible?! Well... As Dr. Gundry tells us, *"Believe it or not, 99 percent of all the genes that make up 'you' are bacterial, viral, and protozoal genes, not human genes at all. Humans actually have very few genes, and the ones we do have are virtually identical to those in our primate cousins, chimps and gorillas."*

That's a little nuts, eh? Yes, it is. (Oh! btw: Nuts have more genes than we do as well. An almond? *Scientific American* says that it has 28,000 genes. :)

More from Dr. G: *"If we humans have so few genes, how did we become so complex? What makes us different from other animals? In a word: bacteria. When humans evolved, our bacteria changed, and it was our bacteria, rather than our genes, that made us human. As shocking as it may seem, most of what has happened to us, and what will continue to happen to us in the future, is determined by the state of the bacteria in our gut, mouth, and skin. So let's stop focusing on taking care of the 1 percent and start paying closer attention to the 99 percent of the genes that make up you."*

Want to die young at a ripe old age? Remember: *"Your longevity is paradoxically tied to the fate of these ancient organisms—the oldest parts of you have the power to help keep you young."*

Helping us do that is, of course, what the book's all about. Let's take a look at some ideas on how.

LONG-LIVED PEOPLE: DO AND DON'T

"So what do these [long-lived] people all have in common? Surprisingly, it's not what they eat—it's what they don't eat. But before I reveal what that is, let's look at the type of carbohydrate that two of these populations (the Kitavans and the Okinawans) consume in extremely large amounts.

Purple sweet potatoes and taro root (as well as plantains and yams) are not regular carbohydrates. They are resistant starches, a subset of starches that behaves differently in your gut than other carbohydrates, such as corn, rice, or wheat, or fruit. Instead of being quickly converted to glucose, which as you know is either burned for energy or stored as fat, resistant starches simply pass through your small intestine mostly intact. These foods are resistant to the enzymes that break down complex starches—hence their name. So eating resistant starches, even in large amounts, generally doesn't raise your blood sugar or insulin levels. This, of course, is key to avoiding type 2 diabetes, obesity, and inflammation as you age. And because they don't cause a blood sugar spike, resistant starches keep you feeling fuller longer than regular sources of starch."

" Exercise is another perfect example of hormesis-limited stress you put on your body to make yourself stronger. Like other examples of hormetic stressors such as calorie restriction, exercise stimulates autophagy, the recycling of old, worn-out cellular components."

~ Steven Gundry, MD

That's from a chapter in which we learn about "The Seven Deadly Myths of Aging." The first myth? "The Mediterranean Diet Promotes Longevity."

Before we take a look at that in a little more depth, let's remind ourselves that all carbs are NOT created equal. For our purposes in this context, let's call them the good, the bad and the ugly.

The good? Resistant starches like purple sweet potatoes and yams. The bad? Grains like rice, corn, and wheat. The ugly? Fast-acting carbage (aka sugar and flour) found in bread, pasta, cookies and pizza.

Which leads us to Gundry's myth-busting of the virtues of grains found in the Mediterranean Diet. Dr. G puts it this way: *"But a closer look at those cultures reveals that cereal grains are actually a negative component of the Mediterranean diet, meaning that these folks lived long, healthy lives* ***despite*** *eating so many grains, not because of it."*

And, get this: Although the Okinawans eat a ton of carbohydrates (and little fat), they eat VERY LITTLE RICE. In fact, apparently, 85% of their calories come from the purple sweet potato.

Which leads us to: *"I believe that the true secret of these long-lived people lies not in what they do eat but in what they don't eat. And what they don't eat is large amounts of animal protein. With apologies to my friends in the paleo and ketogenic communities, the facts don't lie. Not a single one of the Blue Zone populations consume significant amounts of animal protein, and I believe that is their secret to a longer, healthier life."*

Gundry's recommendation on animal protein? 3 ounces a day. Max.

P.S. Remember his #1 Rule from *The Plant Paradox*? *"What You Stop Eating Has Far More Impact on Your Health Than What You Start Eating"* <- What do you need to STOP eating? (Today?)

CHRONIC CARDIO = CHRONIC STRESS

"Like everything else in life, there is such a thing as too much when it comes to exercise, especially cardiovascular exercise such as running. Our ancestors ran only when they needed to avoid becoming someone else's meal, but somehow we have gotten the idea from faulty calorie math and a misunderstanding of how metabolism actually works that we need to run for several miles at a time or spin, step, or aerobicize for hours on end, all in the name of being healthy."

That's from a chapter called "Dance Your Way into Old Age" in which we learn about how to keep our bodies Optimized as we age.

A little earlier in the chapter, Dr. G tells us about the importance of finding *just* the right amount of stress via something called "hormesis" in which a little bit of stress creates positive gains but too much stress leads to negative effects.

As he says: *"Exercise is another perfect example of hormesis—limited stress you put on your body to make yourself stronger. Like other examples of hormetic stressors such as caloric restriction, exercise stimulates autophagy, the recycling of old, worn-out cellular components."*

Then he drops the hammer and basically tells us that the way we're training these days is WAY TOO STRESSFUL.

Which is pretty much exactly what Phil Maffetone tells us in all the books we've featured. He puts it this way in *The Big Book of Endurance Training and Racing*: *"Improvements from training are, to a great degree, the result of stress. We apply sufficient physical, chemical, and mental stress to the body, and it develops endurance as a result, leading to better performance. This is an example of good stress. But apply a little more of those same stresses or combine them with other stress, and benefits can quickly disappear—an example of bad stress. In sports, bad or excess stress often leads to overtraining.*

" But a high triglyceride level is indicative of health problems. As a guide, your HDL level should be equal to or higher than your triglyceride level, which basically signifies that you're recycling more fat than is being stored. But during our current 365-day growth cycle, the vast majority of people have the exact opposite ratio."

~ Steven Gundry, MD

Excess stress is not only the most common problem I've seen in athletes, it's also the problem most neglected and underestimated by them. If you want to reach your athletic potential and optimal health, a better understanding of stress is the first step."

Then Dr. Gundry tells us that all the long-lived (Blue Zone) cultures were WALKERS and HIKERS *not* runners.

Apparently his wife was an avid marathon runner who was so good she qualified for the 100th running of the Boston marathon. But... When she looked at the data, she quit because *"There is plenty of evidence that acute endurance exercise (such as marathon running, which causes you to lose muscle mass dramatically) has a disastrous effect on longevity."*

How's YOUR training? Do you need to consider dialing it back a little bit?

P.S. Apparently the Kalahari Bushmen in Africa are legendary long-distance walkers who walk between 20 and 30 miles during hunting season. But, they literally laughed when asked if they'd ever RUN 26 miles straight—saying that that would make no sense as they'd use more energy than they'd gain from the animal.

P.P.S. Of course, this isn't a new idea. Aristotle put it this way 2,500 years ago: *"For both excessive and insufficient exercise destroy one's strength, and both eating and drinking too much or too little destroy health, whereas the right quantity produces, increases or preserves it. So it is the same with temperance, courage and the other virtues... This much then, is clear: in all our conduct it is the mean that is to be commended."*

P.P.P.S. Back to Dr. G. He tells us: *"If you are concerned that you're not in great shape and can't safely start a weight training protocol, have no fear. Jack LaLane, 'the Godfather of Modern Fitness,' taught me that you need to do only two simple exercises to develop and maintain strength. Those two exercises are squats (or any type of deep knee bends) and planks or push-ups. Both exercises work against gravity, and together they stress every major muscle group in the body. Anyone at any fitness level can do them, and just a small investment of time will yield meaningful results."*

<- Squats + Plank + Push-ups = Magic. Put them together and what do we get? Burpees!! :)

YOUR TWO BRAINS

"There is now so much evidence of the direct connection between gut microbes and the brain that many of my colleagues have begun referring to the gut as the 'second brain.' I disagree—not with the direct relationship between the two but with the gut being relegated to second place. The gut actually controls the brain in your head, which you might want to start thinking of as your second brain. ...

The gut and brain communicate via the vagus nerve, which is the longest nerve of the autonomic nervous system and is equivalent to the landline or cable system in your home. The vagus nerve controls most of your autonomic (unconscious) bodily functions, such as heart rate, respiratory rate, digestion, and so on. The vagus nerve runs between the gut and the brain, snaking around the various organs in your body along the way.

When one part of your body needs to communicate with another, it makes a call along this landline to send the message. For many years, we all believed that the vagus nerve existed for the brain (the one in your head) to communicate with and give orders to the rest of the body, including the gut. That was what I was taught in medical school and believed for much of my career. But we now know that it is actually the other way around: for every nerve fiber leading from the brain in your head to your heart, lungs, and your gut, there are *nine* nerve fibers leading to the brain from the latter. There is therefore nine times as much communication going from the gut to the brain than there is going in the opposite direction.

" In my clinics, anyone who has a hemoglobin A1c level less than 5.0 earns a gold star (really). What's yours? If it's above 5.6, you are in big trouble in the longevity race."

~ Steven Gundry, MD

To put it simply: *your gut buddies are the ones making the calls*. Not only that, but there are actually more neurons lining your gut to receive and interpret these messages than there are in your entire spinal cord. The 99 percenters are truly in charge of the way you act, think and even feel."

That whole section earned a bunch of very large asterisks and "WOW!"s in my copy of the book.

Two brains. One in your head. One in your gut. And the one in your gut might actually be the #1 brain? We've talked about it all before but any time I read the stats the response is the same:

WOW.

I don't know about you, but I think it's pretty crazy to imagine that our gut actually has neurons. 100 million of them. Granted, your brain has 100 BILLION, but still.

And, let's not forget that your gut produces 80-90% (!!!) of your serotonin. (Really? Yes.)

And... We've talked about our vagus nerve quite a bit. As we discussed in *Love 2.0*, "vagus" literally means "wanderer." As Gundry tells us, it's the longest nerve in the autonomic nervous system and controls most of our unconscious bodily functions like heart rate, etc.

We used to think that the primary purpose of the vagus nerve was to send messages FROM the brain down to the gut and the rest of the body. BUT... Now we know that NINE (!!!) times more communication fibers go UP from your gut than *down* from your brain.

One more time: Wow.

As Dr. G says: *"To put it simply: your gut buddies are the ones making the calls."* Which is why we want to make sure we're taking really good care of them.

HOW TO WASH YOUR BRAIN (GOT GLYMPH?)

" There's a lot of wisdom in the old maxim 'Eat like a king at breakfast, a queen at lunch, and a pauper at dinner.' Unfortunately, our culture promotes the opposite-eating a large, late dinner (or, even worse, a snack right before bed) that forces your body to spend its efforts digesting your food during the night, when it should be focused on cleaning out the gunk in your brain."

~ Steven Gundry, MD

"A few years ago, researchers discovered a system that allows cerebrospinal fluid (that clear fluid we tap when we stick a needle into your spine) to flow through the brain, cleaning out the spaces in between cells, just as lymphatic fluid does in the rest of your body. This is called the *glymphatic system*. To make room for the fluid to wash out your brain, your cells actually shrink in size when you are in deep sleep. This allows the full 'brain wash' process to go twenty times as fast when you are in deep sleep as when you are awake and helps explain why a good night's sleep is so restorative. When you get an adequate amount of deep sleep, you literally wake up with a refreshed and rejuvenated mind that has been swept clean of junk and debris."

We've all heard of our *lymphatic* system.

It's an essential part of our immune system featuring a clear fluid called "lymph" that helps rid our bodies of toxins, waste and other unwanted materials.

But... What about our *glymphatic* system?

Ever heard of THAT? I never really paid attention to it until I read this book. It's a BIG deal.

Want to keep your brain all squeaky clean?

Well... It's the *glymph* in our GLYMPHATIC system that's responsible for getting rid of all the toxins, waste and other unwanted materials from our BRAINS.

Which kinda begs the question: How do we Optimize THAT process?

Back to Dr. G. He tells us: *"The glymphatic system is most active during the specific stage of deep sleep that happens very early in the sleep cycle. And the glymphatic system, just like your digestive system, requires a great deal of blood flow. This means that if you eat too soon before going to bed, your blood will all flow to your gut to aid in digestion and will not be able to reach your brain to complete the all-important brain wash."*

" Every meal you eat and when you eat it, how and how much you exercise, the products you use in the shower, the supplements you take each day–all of these small choices add up to have a real impact on your life span and your health span."

~ Steven Gundry, MD

He tells us that this "brain wash cycle" is probably the *"single most overlooked and misunderstood aspect of neurodegenerative diseases."*

He also tells ut that, luckily, there's a simple solution: *"Leaving as big a gap as possible between your last meal of the day and your bedtime."*

His specific recommendation? Eat your last meal at least FOUR hours before you go to bed.

When I read that, I was like, "Four hours?! That's crazy early."

And... I've heard this recommendation enough times and his pitch was convincing enough that I decided to run a little experiment.

And... I have to say the preliminary data (as culled from my Oura ring) is KINDA CRAZY. In fact, I think this might wind up being one of the most significant Optimizing levers I've ever pulled.

It's still early and I need more time to analyze the data, but get this. My Oura ring measures things like resting heart rate and heart rate variability (with a pretty high degree of accuracy) and deep sleep and REM sleep (with a little less accuracy).

Since I started eating my last meal at least four hours before bedtime, my resting heart rate has gone down nearly 10% (from 45 to 41) and my heart rate variability (a measure of health/recovery) has gone up (which is a good thing) from an average of ~50 to an average of ~70—a 30%+ improvement. That's CRAZY (awesome).

At the same time, the amount of deep sleep Oura tells me I'm getting has also gone up significantly—with me consistently getting the optimal 1.5 to 2 hours of deep sleep.

Early last meal to brain wash cycle for the win!

All of that is part of a longer chat, of course. For our purposes Today, I have a simple question: Got glymph?

And... How many hours before you go to bed do YOU eat?

Care to Optimize with me? :)

Brian Johnson,
Heroic Philosopher CEO

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

- The Plant Paradox
- Brain Maker
- Grain Brain
- The Sleep Revolution
- Eat Fat, Get Thin

About the Author of This Note

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Brian Johnson is the Founder + CEO of Heroic. He's spent half of the last 25 years as a Founder/CEO and the other half as a Philosopher. Brian loves integrating ancient wisdom and modern science to help YOU become the best, most heroic version of yourself so we can create a world in which 51% of humanity is flourishing by 2051. Learn more at heroic.us.