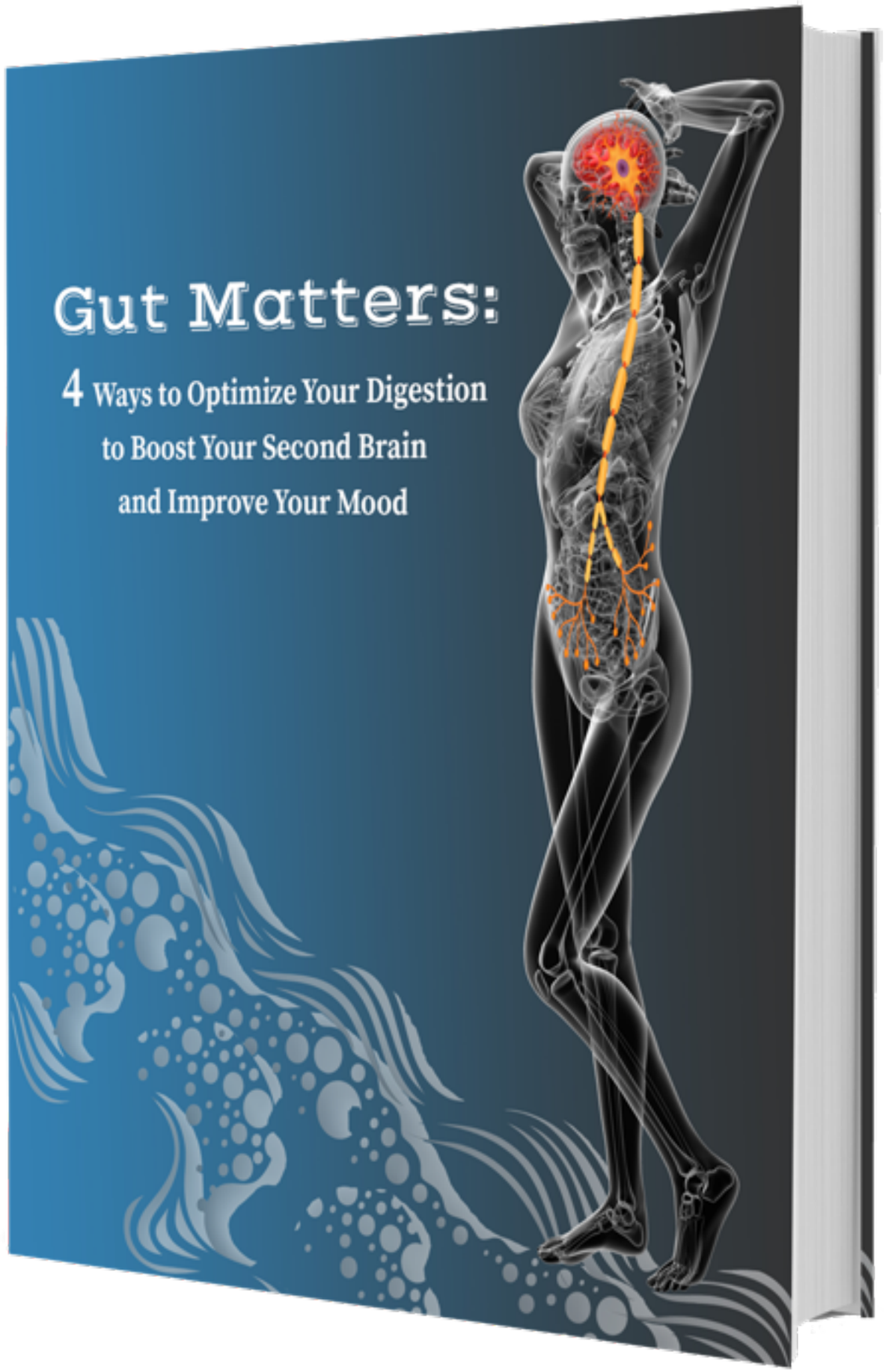

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Your Gut Matters!

I am excited that you have decided to learn more about your gut health and how it affects your overall health. You are now empowered with some of the most important information to have surfaced from our scientific communities in the past 10 years.

Hippocrates stated that “all disease begins in the gut” long ago, but this vital organ has often been overlooked as a primary site of imbalance. Becoming more familiar with how to improve your gut health could make a major positive impact on your health and wellbeing.

I am a lifelong learner in the areas of holistic and preventive medicine, with experience and training in exercise physiology, public health, functional medicine, and nutrition. My area of focus is to help improve health through root-cause care, which often leads back to the gut! From the foods that we eat to environmental toxins surrounding us on a daily basis, this delicate ecosystem - known as the microbiome - needs to be handled with care to live the healthiest life possible.

This book will inform and guide you in making simple, but powerful, lifestyle changes that can improve your physical and mental health, as well as prevent future illness. I look forward to connecting with you and sharing additional tools in your journey to a healthy you! Visit www.theheartedhealth.com to learn more about programs and services.

Julie

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Disclaimer

This book is intended to be educational and is designed to supplement, not replace, the advice of your doctor or health professional. The authors of this book disclaim any liability that may incur as a result of applying information from this book. If you suspect that you may have a health problem we recommend that you consult your physician.

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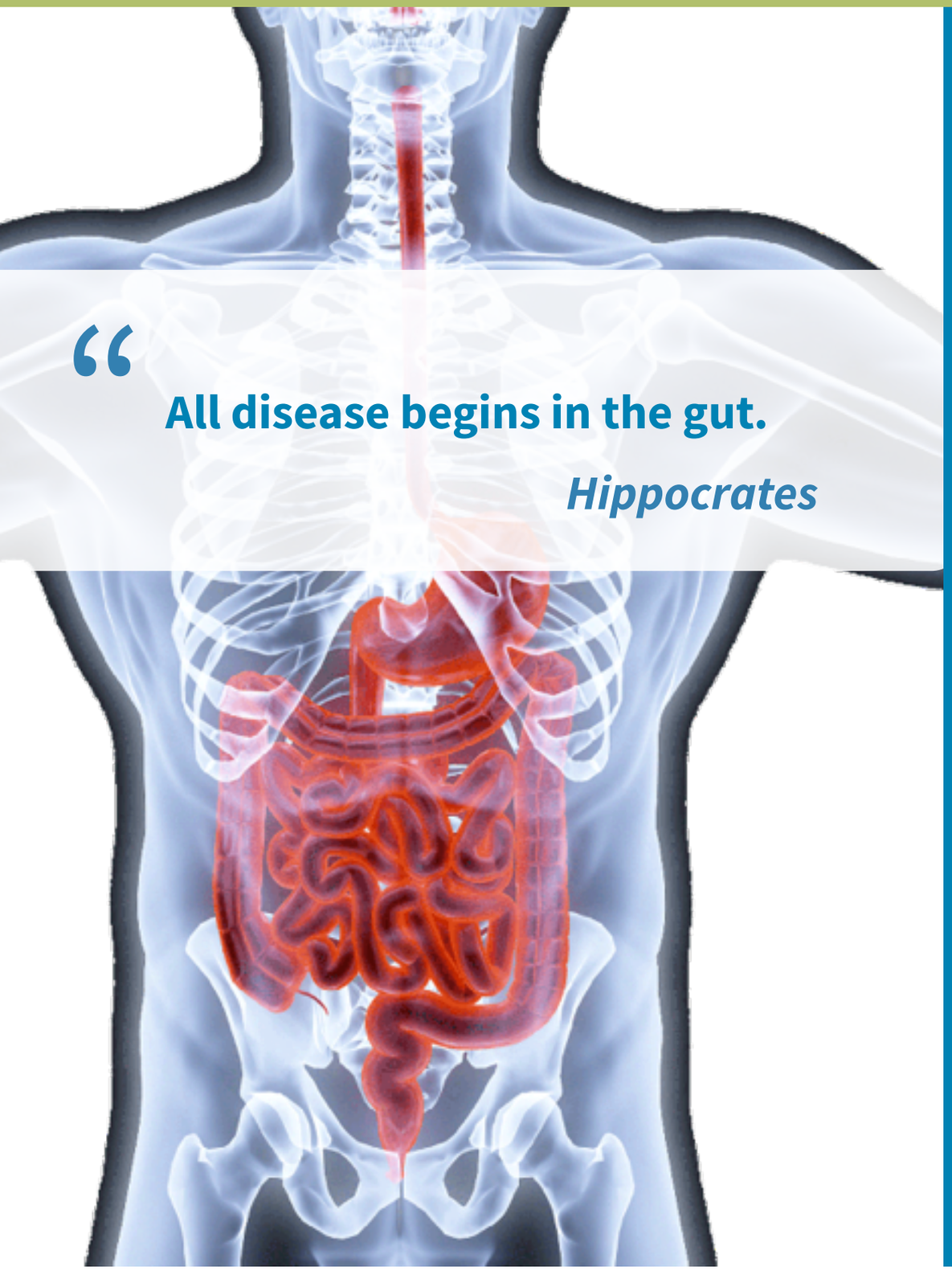
Chapter One: What is the Gut?



> **All disease begins in the gut.**
>
> ***Hippocrates***

Your gut, also known as your gastrointestinal tract is a magnificent processor with a genetic intelligence that is encoded in every one of your microbes. This tract is considered one complete channel that begins at the mouth and ends at the anus. It is estimated to be 25-30 feet in length. Your gut, in addition to promoting normal gastrointestinal functions, also provides protection from infection, regulates metabolism, stimulates hormone production and manufactures the majority of the neurotransmitters found in the brain.

Hippocrates, the father of modern medicine in the era of 370 BC believed that “all disease began in the gut”. Apart from diseases which are clearly genetic, there now is evidence that many chronic diseases do in fact, begin in the gut. We have come full circle in understanding the power and validity of Hippocrates assertions. Most people, including many physicians, do not realize that at least 80 % of your immune system and most of your serotonin for mental health is located in your gut. A healthy digestive system is an imperative for optimal health.

This eBook is designed to support you to take action to improve your gut health and awaken you to the power of “gut matters” and your “second brain”

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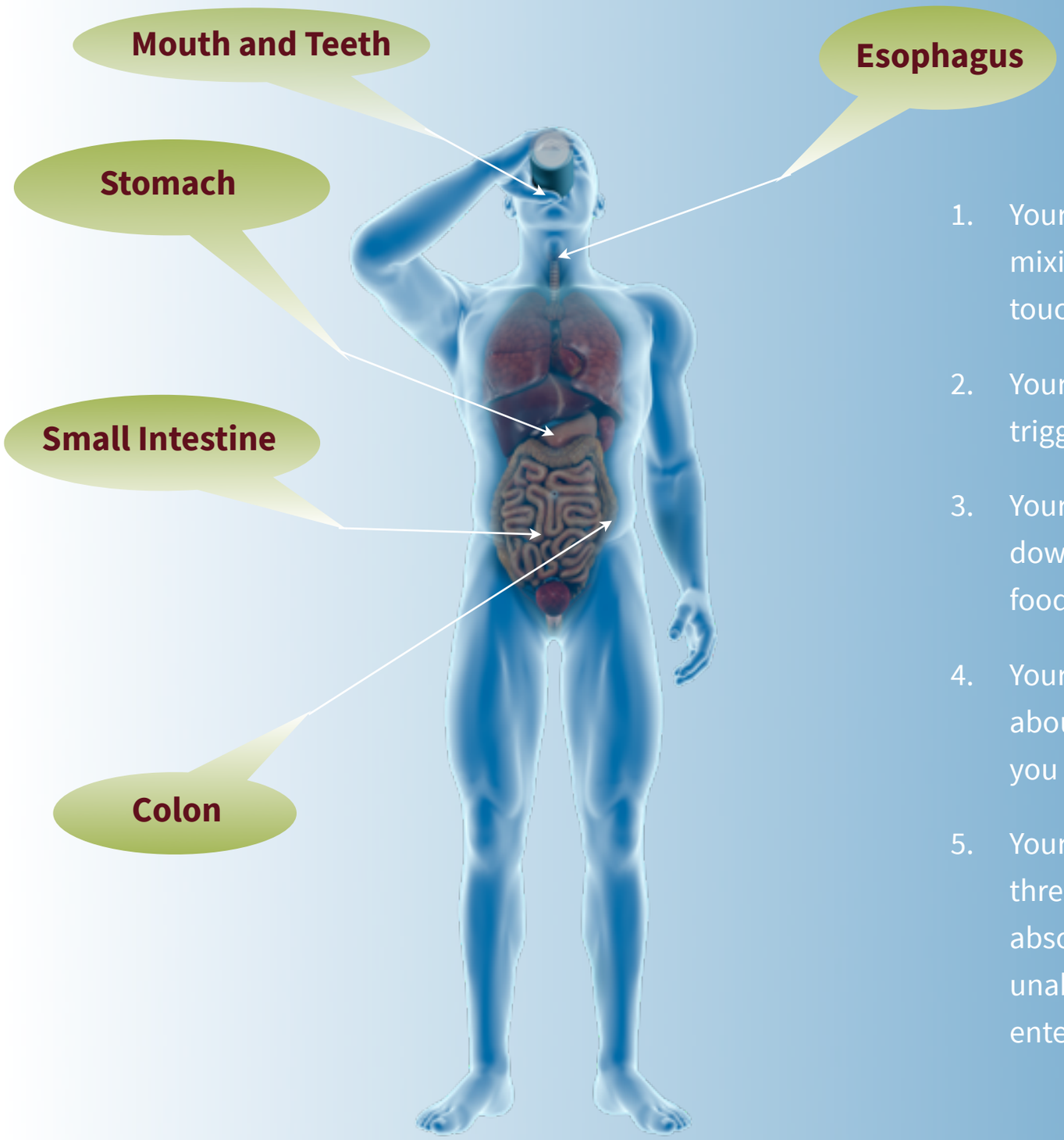
Anatomy 101: A Refresher



Your Digestive Tract Consists of 5 Main Sections

1. Your **mouth and teeth** break down your food into manageable pieces, mixing with saliva to initiate the digestive process. The moment food touches your mouth, enzymes are secreted to aid in digestion.

2. Your **esophagus** connects your mouth to your stomach. Swallowing triggers muscular contractions that push food down into the stomach.

3. Your **stomach** then excretes acid and peptic enzymes to dilute and break down food, digesting proteins, killing off the majority 0f bacteria in the food before it goes into the small intestine.

4. Your **small intestine** is a narrow tube about one inch in diameter and about 20 feet long. Its job is to absorb most of the nutrients from what you eat and drink over a 2–4 hour period.

5. Your **colon (or large intestine)** is about 5 feet long and approximately three inches in diameter. It takes a 12-48 hour time period for the colon to absorb water from wastes and ferment trillions of colonic bacteria, unabsorbed sugars, starches, and proteins, to create a stool. As stool enters the rectum, nerves signal the urge to defecate.

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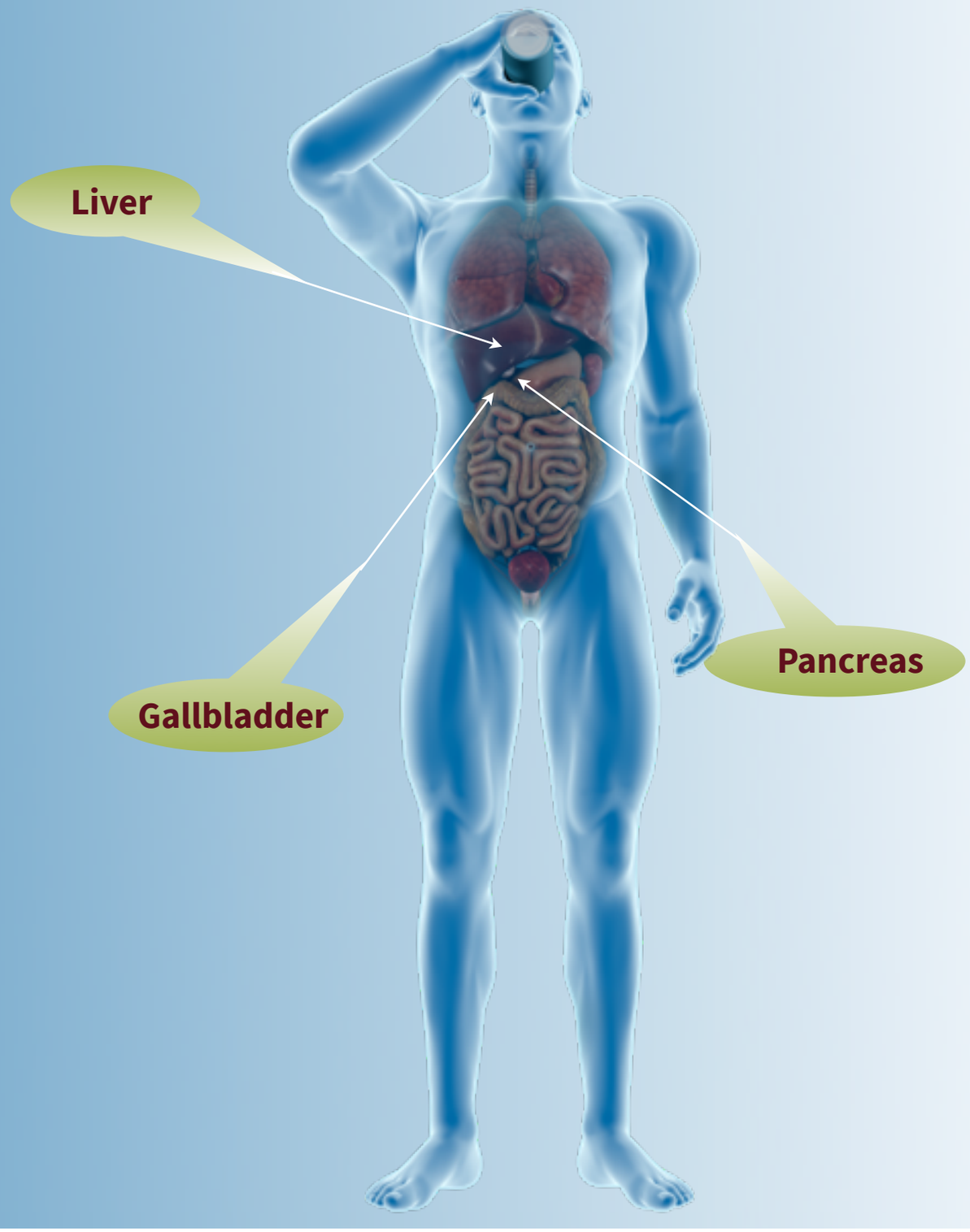
Vital Digestive Organs

1. Your **pancreas**, a digestive gland that secretes an alkaline juice that contains enzymes, breaks down proteins, fats, and carbohydrates. It's also the source of the hormone insulin.

2. Your **liver,** a very important organ, filters blood from the gut, removes toxins, metabolizes drugs, stores nutrients and synthesizes proteins for various purposes including the clotting of blood. It also synthesizes bile. Although always working, your liver filters best while you sleep.

3. Your **gallbladder** stores and concentrates bile, and after a meal squeezes it into the small intestine, where it helps to digest fat.



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The Gut-Brain Connection

The brain speaks to the gut and the gut answers back. You feel stressed and where do you feel it immediately? In the pit of your stomach, aka your gut. Researchers have discovered that the Enteric Nervous System located in our gut serves as our second brain. Our two brains are connected via the vagus nerve (more about that later) and as a result of this marriage, they play a key role in our overall health, both physical and emotional. For example, anxiety and stress are psychological concerns. We know that people with gastrointestinal problems often experience anxiety and stress as a result of their conditions. In addition, anxiety and stress can make GI problems worse. In the future, the fields of psychiatry and neurogastroenterology will likely be offering new insights into the workings of the second brain—and its impact on the body and the mind.

Your gut is one of the keys to unlocking brain health. Most diseases of the brain do not start in the brain. Depression, anxiety, ADD and dementia often have a foundation in the gut. It doesn't make sense anymore to separate gut and brain. The majority of neurotransmitters are made in the gut. For instance, 90% of the neurotransmitter serotonin is made in the gut and it supports mood, sleep, and appetite. And the presence or absence of serotonin has a direct effect on dopamine - dopamine is that *I feel so good* hormone. Now I bet you might be more interested in what you are eating as it is related to gut health!

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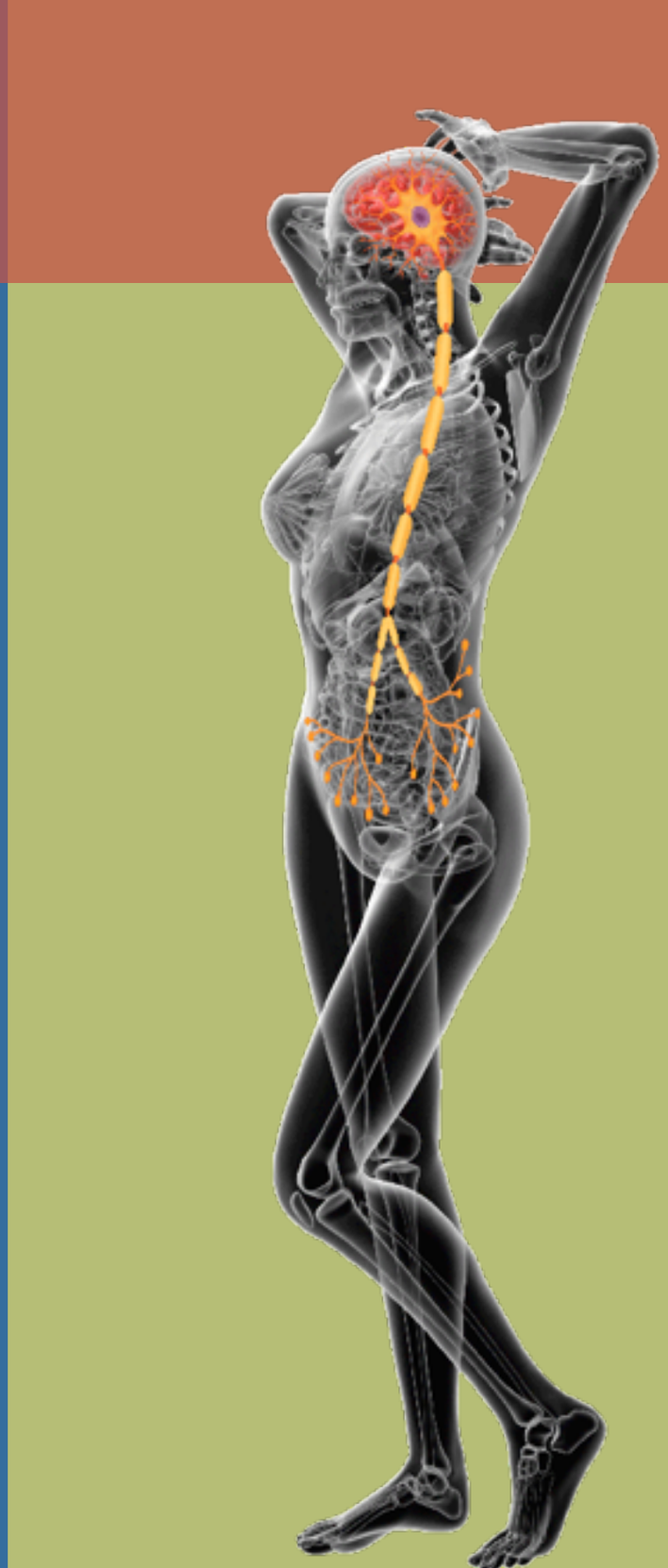
Your Vagus Nerve:
A Multi-Lane Highway



What you need to know!

Your Vagus nerve is the communications director of your body. It is so important that it is featured on the cover of this book. Information from your ‘second brain’ travels at the speed of light to the brain in your head and back via the vagus nerve. It connects your autonomic and central nervous systems as they work to keep your body in homeostasis.

“Vagus means "wandering" in Latin. The vagus nerve meanders all the way down, into the belly, spreading fibers to the tongue, pharynx, vocal chords, lungs, heart, stomach, intestines, and glands that produce anti-stress enzymes and hormones (like Acetylcholine, Prolactin, Vasopressin, Oxytocin), influencing digestion, metabolism and the relaxation response.” Dr. Mark Sircus [46]

Your autonomic nervous system is composed of two polar opposites, the sympathetic nervous system, the gas that gives you the get-up and go in a real-life fight or flight situation, and the parasympathetic nervous system, the brake that helps you to slow down your heart rate while returning to a state of calm. The vagus nerve controls your parasympathetic nervous system.

Keeping your vagus nerve healthy is central to being clear-minded, having stable emotional reactions and overall good health. When you are calm, your thought processes and memory are sharper than they would be if you lived in a constant state of fight or flight.

The next time you experience a gut reaction, make certain to listen.

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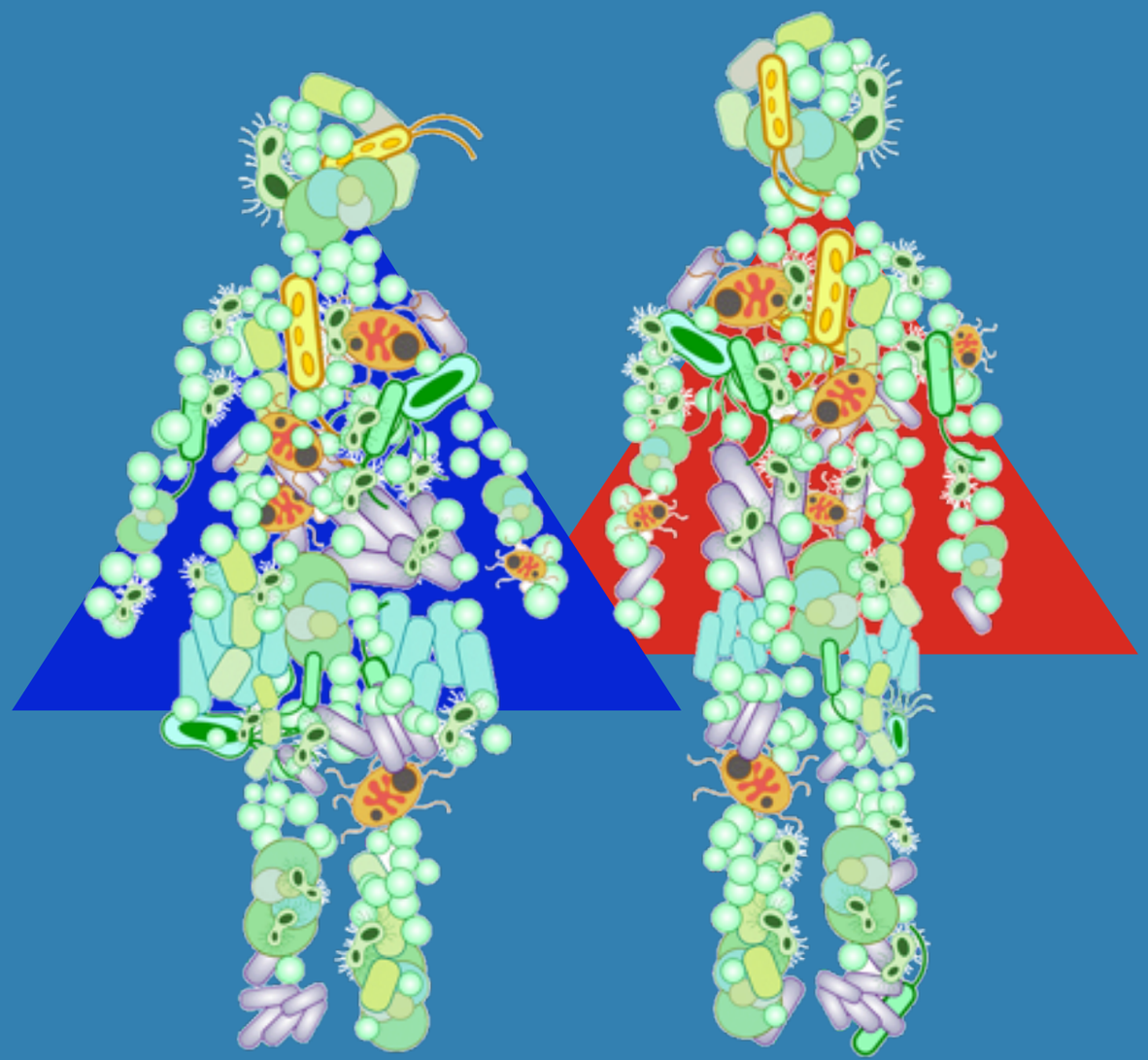
Chapter Two: Your Microbiome and You

YOUR Internal Superheroes!!



> *"Understanding the impact of the microbiome is as important as the human genome.* *Dr. Karen Wolfe*

It's time to reevaluate your relationship with the bugs in and on your body. This community of trillions of microbes, called the microbiota, make up your microbiome. These tiny organisms are working to keep your bodily systems healthy as they continually manufacture signals determining your mood, memory and brain health.

It was once believed that the microbiota was the cause of disease. It wasn't until 2008 that Germ theory, the belief that germs caused disease and were nefarious in nature, was replaced with the idea that your microbiome is working for you rather than against you.

Today, we are all too familiar with the use of hand sanitizers and antibacterial soaps that kill all bacteria - the good, the bad and the beautiful. This phenomenon combined with the Standard American Diet, laden with foods that are mostly void of nutrition, is causing an imbalance in healthy gut function and the loss of integrity of the gut wall called gut permeability.

"When your microbiome goes out of balance you risk such symptoms as brain fog, depression, anxiety, skin issues, insomnia, obesity, diabetes, and cancer." Raphael Kellman, M.D

In a proof-of-concept study, researchers from UCLA found that probiotics (beneficial bacteria) altered the brain function in the participants. [1]

Maintaining a healthy microbiome with an anti-inflammatory lifestyle should be considered front and center in your quest for health. Now is the time to give a warm welcome to your internal superheroes!

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Top Ten Facts About Your Microbiome

1. Your microbial genes significantly impact your digestion, how you age, the strength of your immune system, your mood, and your ability to think clearly!

2. Gut bacteria have the ability to produce the enzymes required to break down complicated nutrients that are essential for proper digestion.

3. Your microbiome is unique to you and is comprised of hundreds of different types of bacteria. [2] The number and types of bacteria cells vary from day to day with a turn-over rate that happens daily. [3]

4. The microbes that live in your body are determined by what you're exposed to. The more diverse your microbiota the more potential you have for a stronger immune system. [4] Geography, stress, diet, age, gender, and everything you come into contact with effects the composition of your microbiota.

5. We depend on our microbes to stay alive: they protect you against invasive germs, they help break down your food to release energy and they manufacture vitamins like zinc and B6. [5]

6. Although bacteria accounts for most of the mass of the microbiota, viruses are actually the most abundant.[6] [7] Viral cells help the bacteria flourish by transferring genetic code.[8]

7. There are approximately 3.3 million microbial genes in the human body compared to only 2,000 functional human genes, this suggests that our health is more determined by nurture rather than nature.

8. Your microbiome interacts with zinc and Vitamin B6 to produce GABA, and other amino acids to make the feel-good neurotransmitter Serotonin, and the hormones, Dopamine, and Melatonin.[5]

9. The main substances that destroy healthy microbiome are antibiotics, NSAIDS, GMO Foods, birth control pill and environmental chemicals. [9]

10. Gut microbes help control inflammation throughout your gastrointestinal tract by interacting with nutrients like digestive enzymes, prebiotics, and probiotics.

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THE HUMAN MICROBIOME PROJECT

Extending the Definition of What Constitutes a Human

The Human Microbiome Project was developed out of the Human Genome Project in a search for missing genes. Researchers discovered only a fifth of the number of protein-coding genes they expected to find. In their search for other sources of genetic material that could also contribute to human functioning, they discovered the human microbiome.

The Human Microbiome Project (HMP) was a United States National Institute of Health initiative with the goal of identifying and characterizing the microorganisms which are found in association with both healthy and diseased humans. It was launched in 2008, as a conceptual extension of the Human Genome Project. [10]

The project so far has succeeded in demonstrating that the microbiome is a major genetic signal in the human body and contributes key properties essential to healthy human function. And, this is only the beginning. They have learned that there are bacteria living in and on us that are beneficial colonizers, not invaders. The hope is that as research progresses, we will learn how to care for our microscopic colonizers so that they, in turn, can care for us.

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Epigenetics and Your Second Genome

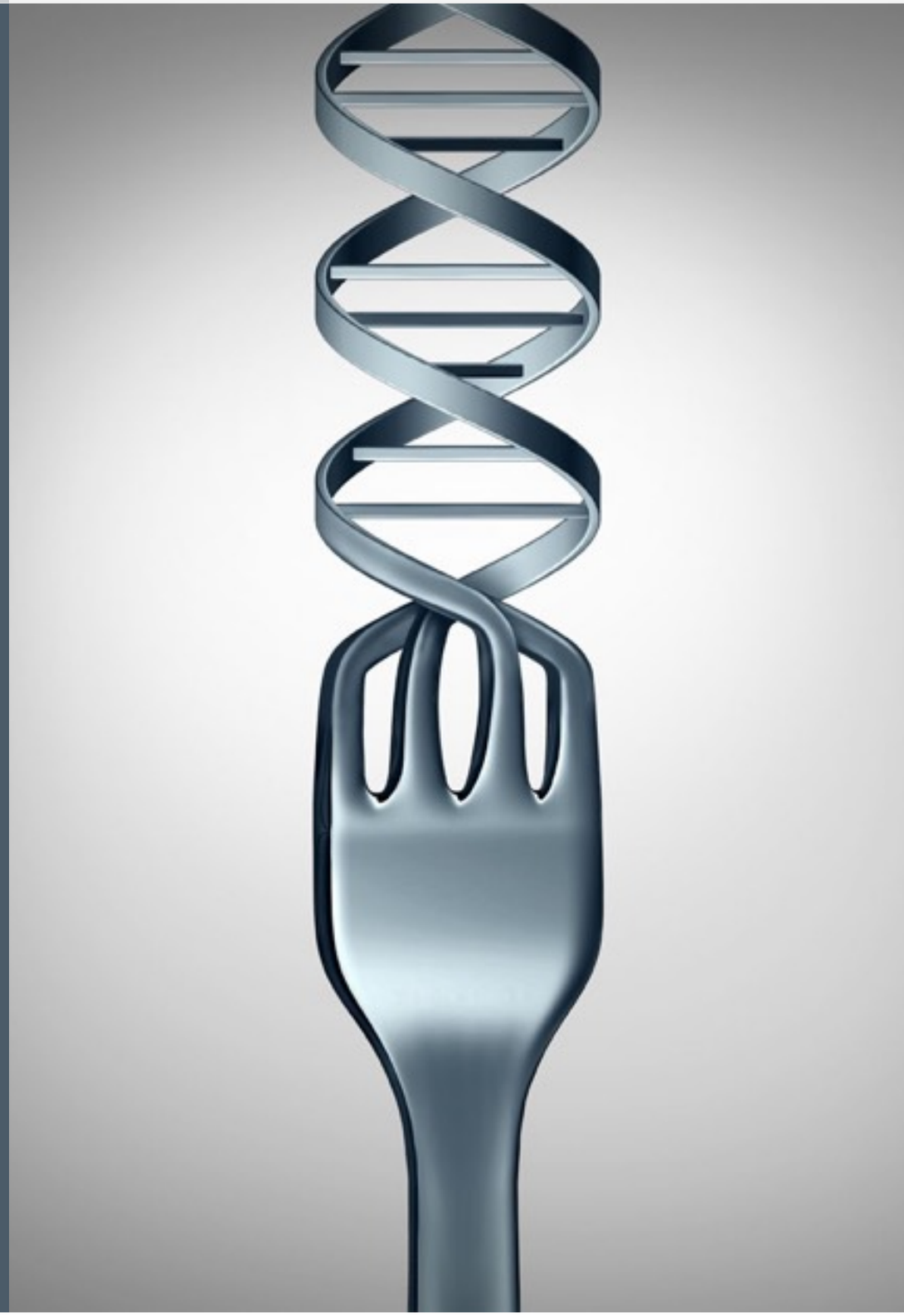
Research about the importance of the gut microbiome in human health and well-being is a major new frontier in health and wellness. We have only just begun to discover how the trillions of tiny microbes that live with us affect our mood, energy, weight, disease patterns and so much more!

It is hard to believe that as humans, our DNA is 99.9% the same and we each have about 22,000 genes (about the same as an earthworm). So that begs the question, “What makes us so unique?” There is obviously something else to account for that gives us our unique blueprint.

Genes are not static. They are constantly being influenced by our lifestyle. Epigenetics is the study of how to modify gene expression (that means to turn a gene on or off or adjust its expression up or down). Our genes are bathed in an environment that is constantly influencing the expression of those genes. This “environment” influencing our genes includes what we eat (referred to as Nutrigenomics), how we think, the nutrients we take into our body, the quality of our sleep, the diversity of our microbiome, the health of our gut!

Raphael Kellman, author of The Microbiome Diet says “As you acquire your microbiome, you incorporate into your body another 3.3 million genes – a ratio of 150 microbial genes to 1 human gene”. In fact the genetic material of our microbiome has often been referred to as our “second genome”. [11]

The fact that the genes of our microbiome outnumber human genes by 150 to 1, means the environment is also impacting those microbiome genes constantly! After many decades of killing all the germs in our body, we are now turning to those “germs” and discovering how vital many of them are to our physical and mental health! What a paradigm shift!



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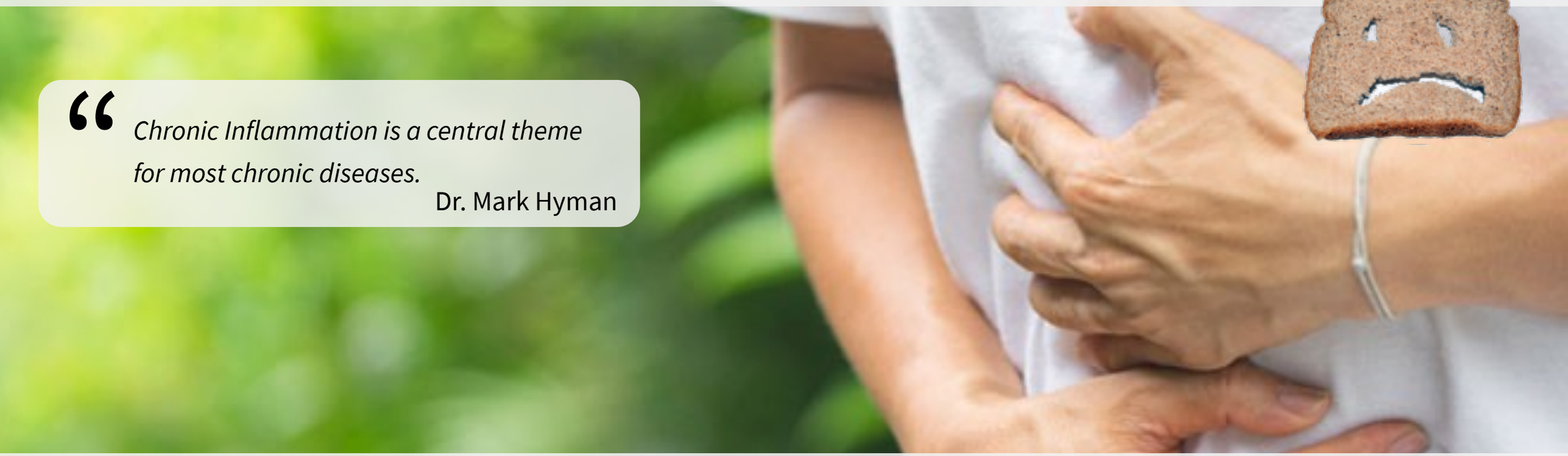
Chapter Three: What is Inflammation?



> *Chronic Inflammation is a central theme for most chronic diseases.*
>
> Dr. Mark Hyman

Acute inflammation is a protective mechanism where your body's white blood cells and the substances they produce, protect you from infection from foreign organisms, such as bacteria and viruses. Acute inflammation is an inflammatory response that flares up and then dies down. For example, when you cut your finger, the surrounding tissue swells up to protect the wound while it heals and eventually the redness goes away.

Chronic inflammation occurs when the immune response sticks around and doesn't let the healing process begin. It often rears its ugly head in the gut (or gastrointestinal tract), resulting in painful bloating, alternating diarrhea and constipation, gas, and a distended tummy. Chronic inflammation can set into motion a host of symptoms causing serious problems of its own and it can also contribute to serious issues like, insulin resistance or metabolic syndrome left untreated. A few indicators of chronic inflammation are brain fog, excess phlegm, sinus issues, fatigue, muscle aches, and headaches

Factors that influence chronic inflammation are primarily lifestyle based that can be improved when you remove culprit.

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6 Factors that Influence Inflammation

#1 SAD: Standard American Diet

What is sad is that countries whose populations can afford to eat the healthiest disease-preventing foods, don't. The United States has spent more money on cancer research than any country in the world, yet the Standard American Diet (SAD) contributes to the very diseases we are spending money to prevent. Some of the effects of a poor diet can be lowered energy levels, reduced nutrient absorption and digestive disfunction, low mood and a depressed or anxious mental state, and weight gain! [12]

The SAD diet looks like this:

- **High in unhealthy animal fats**
- **High in trans and hydrogenated fats**
- **Low in fiber**
- **High in processed foods**
- **Low in complex carbohydrates**
- **Low in plant-based foods**

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#2 Sugar

As Addictive As Opioids!

And It's Not Just The Sweets!

Sugar and refined flours create conditions in the brain similar to what happens with cocaine and heroin. Most refined foods break down into simple sugars as they enter the bloodstream. Sugar and flour can affect your brain the same as if you were abusing drugs. Research shows that rats already addicted to cocaine and heroine will SWITCH and turn to sugar, that's how powerful it is! It's the refining process that makes sugar and flour so dangerous to our brains!! [13]

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#3 Processed Foods

The typical western diet is a huge culprit in making people both sicker and fatter. Processing food exhausts that food of most of the nutritional benefits it once had. The big dilemma when it comes to a diet dependent on processed foods is its affordability, convenience and ready availability. Don't feel like cooking tonight? No problem...drive-thru or delivery are easy!

Processed are foods engineered to appeal to all the senses. The problem is the manufacturing process depletes these foods of most of the nutritious components, vitamins, minerals, and fiber while adding loads of salt, sugar and unhealthy factory oils. Then on top of that, we have to contend with all the marketing! What chance does a simple apple have to compete against all this hype? Two-word answer - YOUR HEALTH.

A couple of tips for avoiding the processed food trap!

- Grocery shopping - keep to the perimeter isles of the store - which will take you past the fruits and veggies, meats, dairy isle and then you are at the checkout having mostly avoided the processed snack laden center of the store!
- Create convenience at home - store ready to eat cut up veggies and fruits in your fridge: carrot sticks, celery, cherry tomatoes, and washed and picked stem free grapes...make healthy snacking easy!

> *"Food companies actually hire neuroscientists like me, and they go, "Let's get to the bliss point. Let's combine fat, sugar, and salt to create that perfect taste that explodes with flavor in your mouth".*
>
> Daniel Amen, MD

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#4 Big Agriculture

Industrial-scale food production has added many foreign substances to our food supply that our gut has to process. Agricultural chemicals like pesticides, synthetic fertilizers, and weed killers get into our food supply and our bodies have to process them. Genetically modified organisms are created in a lab by altering the genetic makeup of a plant or animal in ways that would not happen in nature.

Wash Your Produce!

Environmental Working Group's Dirty Dozen

1. Strawberries
2. Spinach
3. Apples
4. Nectarines
5. Grapes
6. Peaches
7. Cherries
8. Pears
9. Tomatoes
10. Celery
11. Potatoes
12. Bell peppers

Shoppers Guide to Pesticides in Produce

Eat Organic Whenever Possible!

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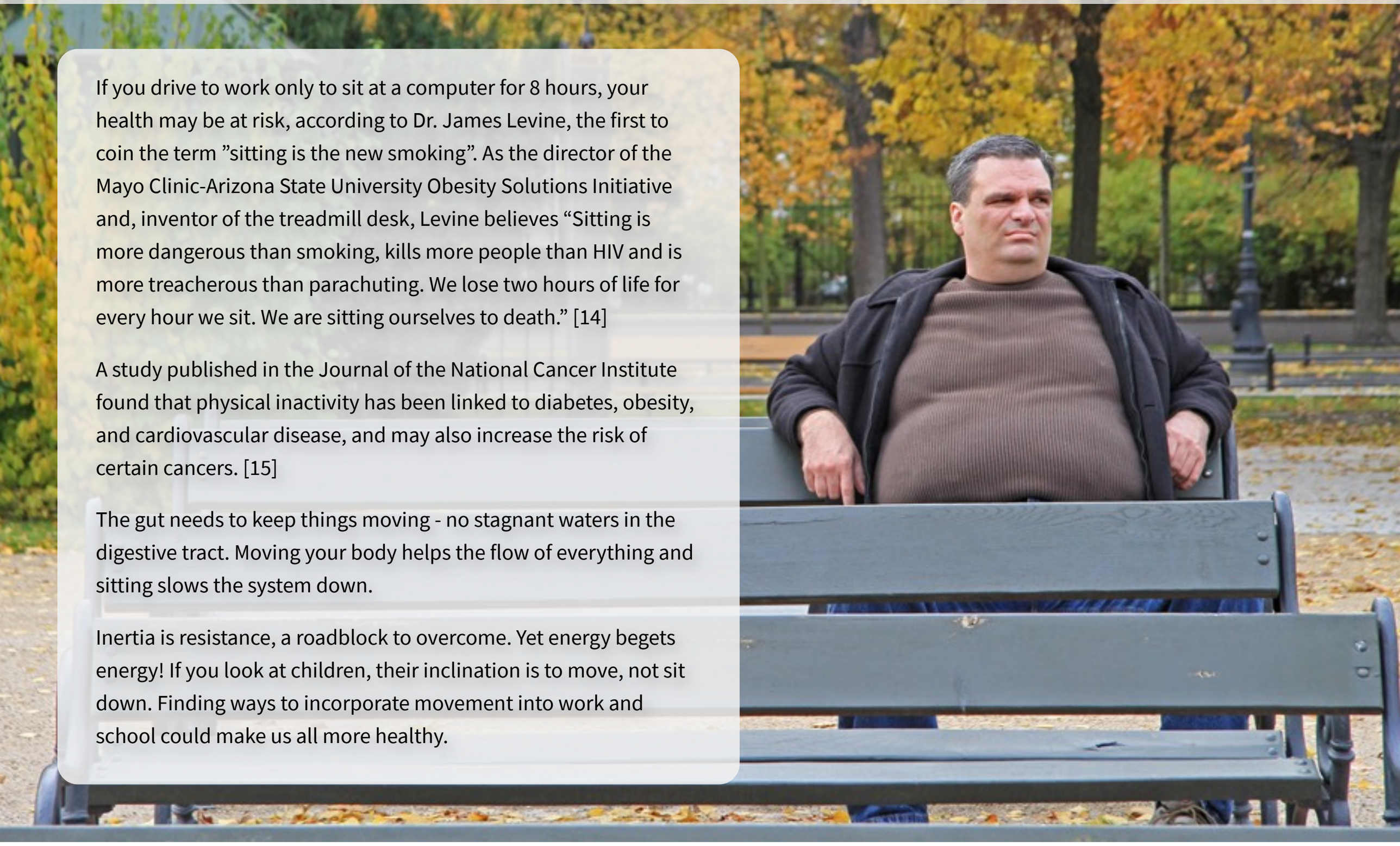
#5 Sitting is the New Smoking



If you drive to work only to sit at a computer for 8 hours, your health may be at risk, according to Dr. James Levine, the first to coin the term ”sitting is the new smoking”. As the director of the Mayo Clinic-Arizona State University Obesity Solutions Initiative and, inventor of the treadmill desk, Levine believes “Sitting is more dangerous than smoking, kills more people than HIV and is more treacherous than parachuting. We lose two hours of life for every hour we sit. We are sitting ourselves to death.” [14]

A study published in the Journal of the National Cancer Institute found that physical inactivity has been linked to diabetes, obesity, and cardiovascular disease, and may also increase the risk of certain cancers. [15]

The gut needs to keep things moving - no stagnant waters in the digestive tract. Moving your body helps the flow of everything and sitting slows the system down.

Inertia is resistance, a roadblock to overcome. Yet energy begets energy! If you look at children, their inclination is to move, not sit down. Finding ways to incorporate movement into work and school could make us all more healthy.

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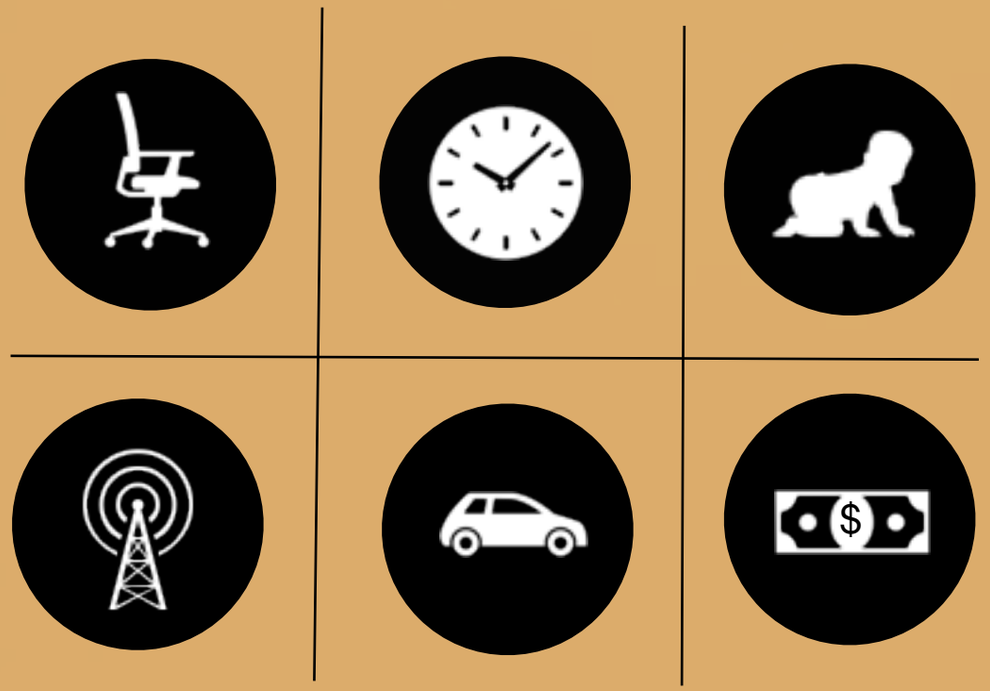
#6 Stress



Stress, whether real or perceived, triggers your fight-flight response, prompting your cortisol levels to rise and adrenaline to flow for a quick response to danger. That's good - we want that ability to run from an angry dog. Yet, it's chronic stress that creates an inflammatory response that overtime eats away at your gastrointestinal system making you fat, tired and depressed.

When you feel strong, content, and secure, your gut microbiome is in a condition of balance. However, when you are experiencing stress, your microbiome balance unravels. The manner or effects of this stress-induced disharmony varies in symptoms from person to person, likened to each person having their own microbiome snowflake, unique and entirely personal to each of us. [16]

Due to the on-going two-way communication between the gut-brain axis research suggests that stress and the negative effects of stress on your microbiome may be addressed in a bi-directional manner. Addressing dietary patterns along with the introduction of probiotics will send healthful support from the bottom-up. And then moving from the top-down the introduction of mindfulness practices into your daily life will enable you to strengthen your stress response resilience when unexpected events arise. [17]

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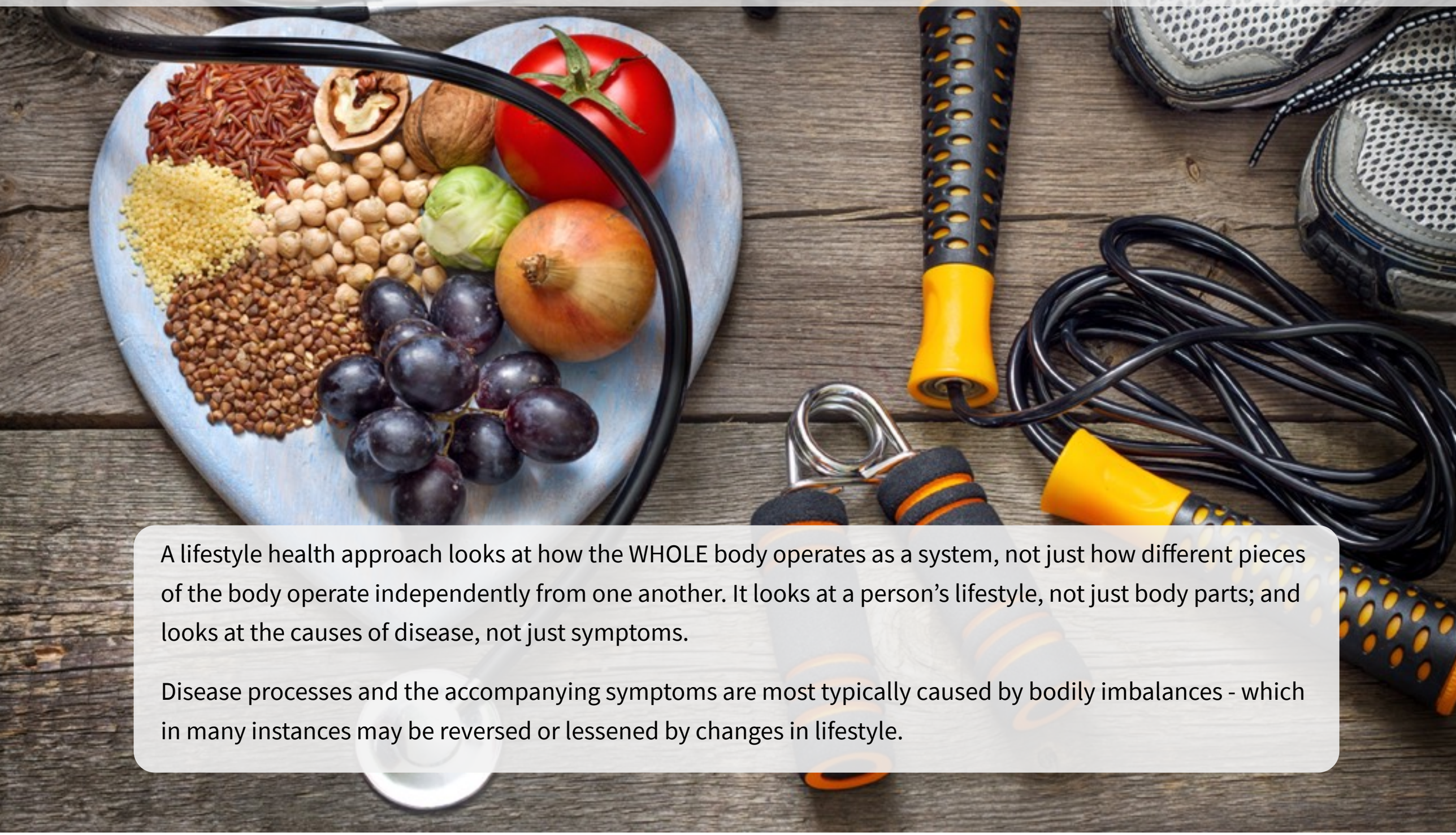
Chapter Four: Lifestyle Health Approach



A lifestyle health approach looks at how the WHOLE body operates as a system, not just how different pieces of the body operate independently from one another. It looks at a person's lifestyle, not just body parts; and looks at the causes of disease, not just symptoms.

Disease processes and the accompanying symptoms are most typically caused by bodily imbalances - which in many instances may be reversed or lessened by changes in lifestyle.

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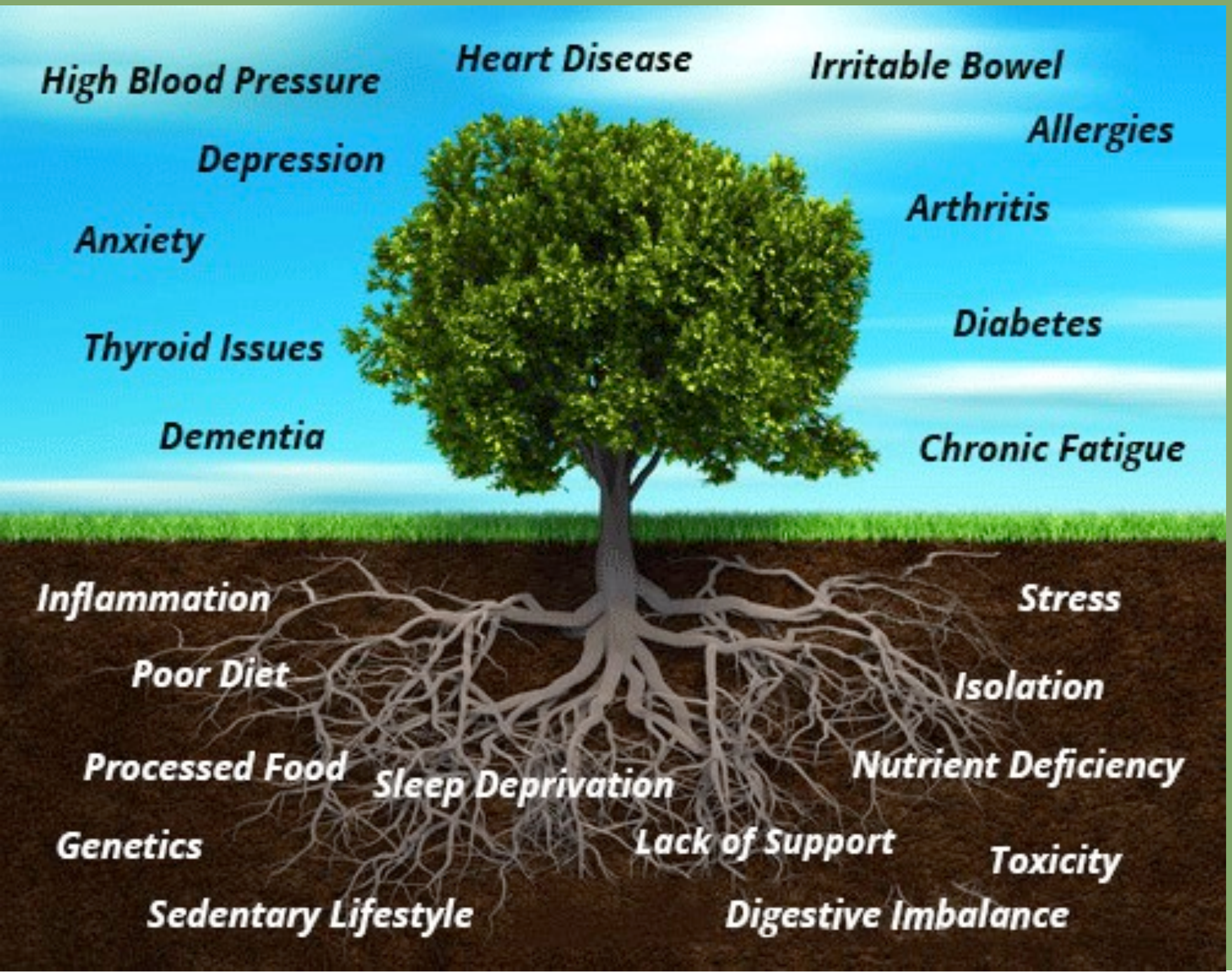
What is Functional Medicine?



> *The good physician treats the disease; the great physician treats the patient who has the disease.*
>
> Sir William Osler MD

Functional Medicine isn't new. It's actually a return to the roots of modern scientific medicine. Traditional allopathic medicine treats the symptoms, functional medicine looks to lifestyle for the root cause of disorders.

Inflammation of the gut, sometimes called 'leaky gut', is a major biomarker for functional health practitioners. We recommend you research functional health practitioners for more details. Let's look at what leaky gut is!

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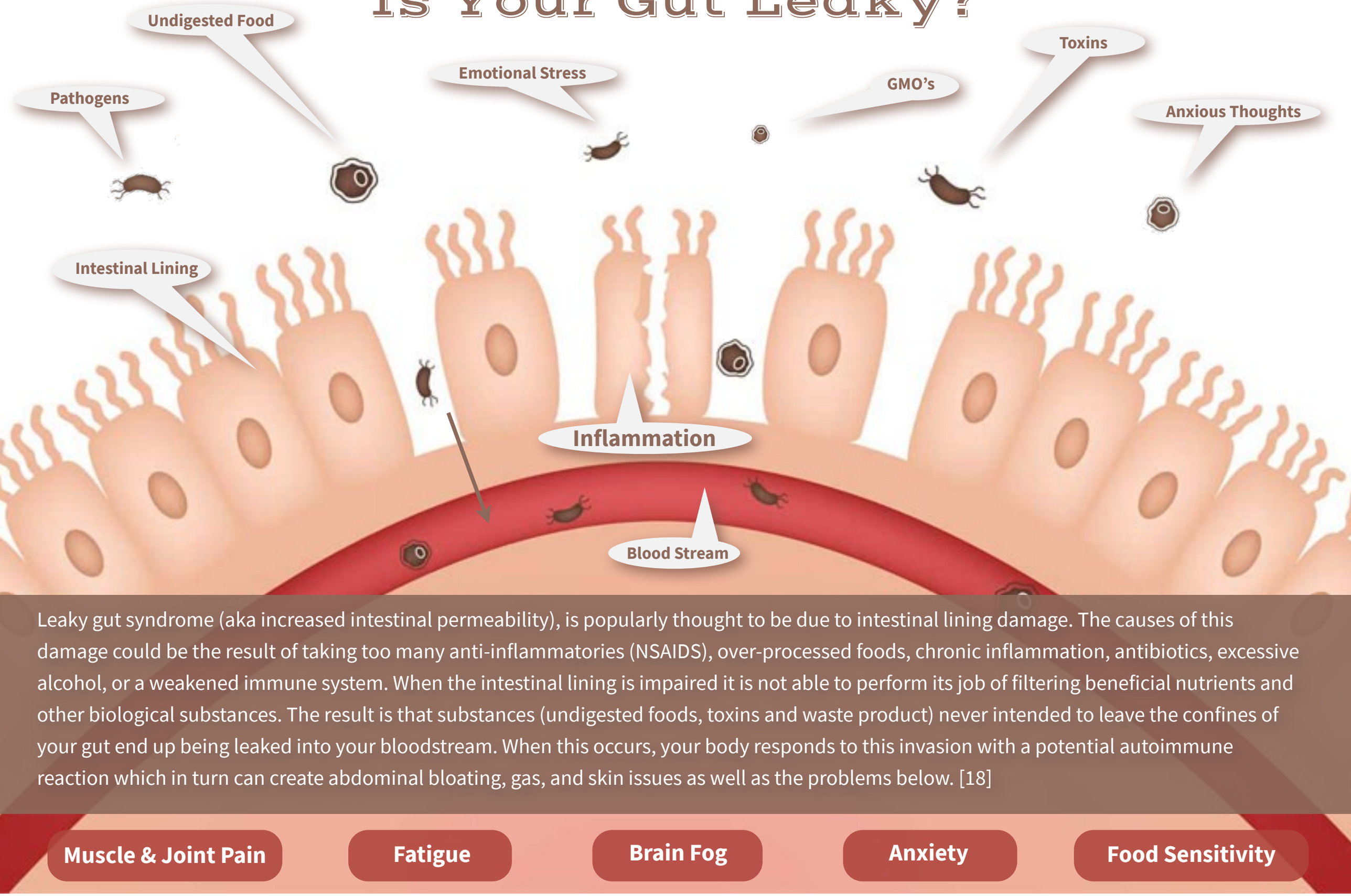
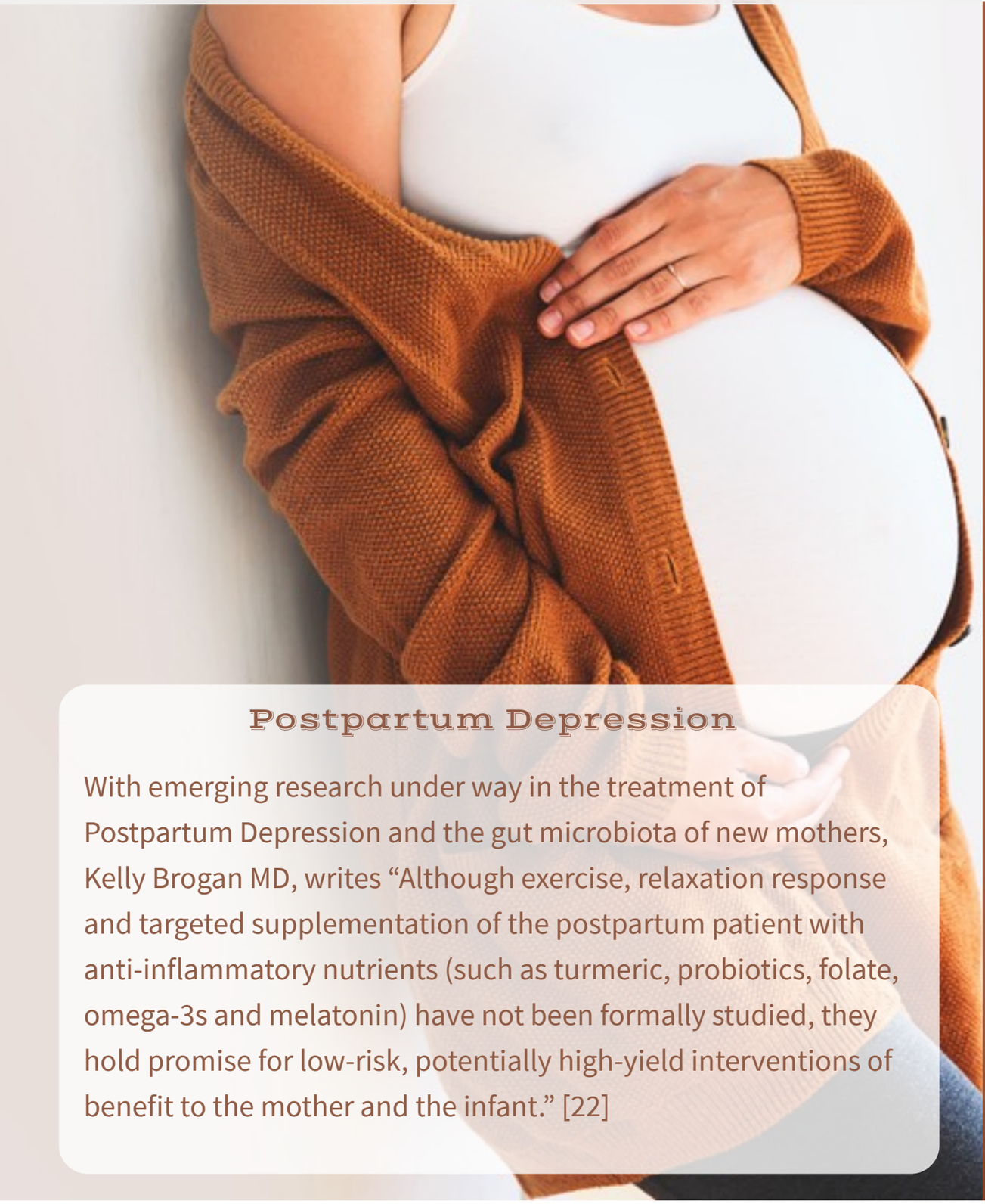
Is Your Gut Leaky?



Leaky gut syndrome (aka increased intestinal permeability), is popularly thought to be due to intestinal lining damage. The causes of this damage could be the result of taking too many anti-inflammatories (NSAIDS), over-processed foods, chronic inflammation, antibiotics, excessive alcohol, or a weakened immune system. When the intestinal lining is impaired it is not able to perform its job of filtering beneficial nutrients and other biological substances. The result is that substances (undigested foods, toxins and waste product) never intended to leave the confines of your gut end up being leaked into your bloodstream. When this occurs, your body responds to this invasion with a potential autoimmune reaction which in turn can create abdominal bloating, gas, and skin issues as well as the problems below. [18]

Muscle & Joint Pain | **Fatigue** | **Brain Fog** | **Anxiety** | **Food Sensitivity**

Gut Matters at Birth



Postpartum Depression

With emerging research under way in the treatment of Postpartum Depression and the gut microbiota of new mothers, Kelly Brogan MD, writes “Although exercise, relaxation response and targeted supplementation of the postpartum patient with anti-inflammatory nutrients (such as turmeric, probiotics, folate, omega-3s and melatonin) have not been formally studied, they hold promise for low-risk, potentially high-yield interventions of benefit to the mother and the infant.” [22]

A functional health practitioner will ask you whether you were born by caesarian section or via the vaginal birth canal. Why would they ask that? By now you know that the diversity of your microbiome is essential for optimal health. Research has now shown that we actually receive the vast majority of our essential gut microbiome from our mother during birth and breastfeeding.

As a baby passes down the vaginal canal at birth via a vaginal delivery (VD), he or she is inoculated with trillions of microbes needed to achieve optimal health. Many studies have shown that children who are born by cesarean delivery (CD), miss out on this major microbial inoculation and can be at increased risk of a variety of conditions later in life. A study published in 2013 by the Canadian Medical Association Journal highlighted how infant gut microbiota is influenced by birth method and breastfeeding and may affect lifelong health. (19)

Dr. Anita Kozyrskyj, University of Alberta, writes, "Our findings are particularly timely given the recent affirmation of the gut microbiota as a "super organ" with diverse roles in health and disease.” The authors stated, "Infants born by cesarean delivery are at increased risk of asthma, obesity and type 1 diabetes, whereas breastfeeding is variably protective against these and other disorders." (20)

In some cases, of course, cesarean deliveries are medically necessary, and there has been research suggesting that collecting a mother’s birth-canal bacteria after a caesarian section and rubbing this over the baby’s mouth and nose and skin helps inoculate the baby. [21]

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Chapter Five: A New Frontier in Mental Health

In 2015, 16.1 million American adults experienced at least one major depressive episode, while anxiety disorders affected 40 million adults and in 2016, 5.2% of American children were treated for ADHD with a medication according to the National Institute of Mental Health.

Despite the obvious relationship between depression, anxiety, and gastrointestinal distress, psychiatrists have mostly been trained to treat the symptoms of mental illness with medication and prescribed talk therapy to discover the root cause. Yet, what if the root cause was not just due to an experience you needed to overcome? What if the answer to your emotional distress lies within your microbiota?

There is a burgeoning field of psychiatry that is beginning to recognize the relationship between gut function, the foods we eat, and mental well-being. Functional Psychiatrists have begun to introduce a new line of treatment called Psychobiotics, defined as “A live organism that, when ingested in adequate amounts, produces a health benefit in patients suffering from psychiatric illness.” [23] Essentially, the use of strain-specific probiotics.

A French research team recently learned, via a double-blinded, placebo-controlled, randomized parallel group study that giving humans specific strains of Lactobacillus and Bifidobacterium for 30 days yielded beneficial psychological effects including lowered depression, less anger, hostility and anxiety, and better problem-solving skills compared with the placebo group. [42]

This is exciting news for the fields of psychiatry, psychotherapy and anyone who suffers from depression, and anxiety.

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Mood and Your Gut

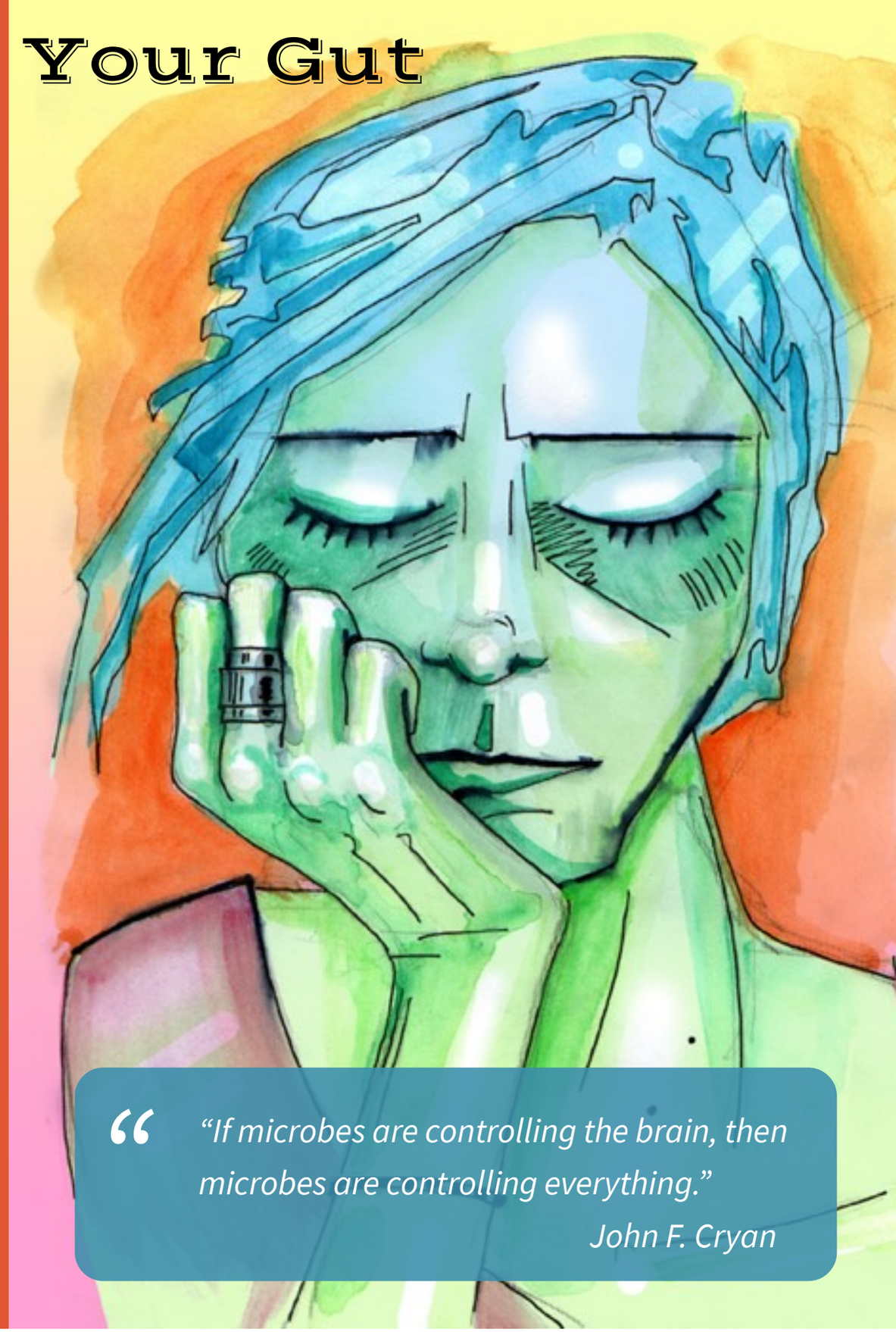
Your mind, your mood and the multiple emotions you experience on any given day, including depression and anxiety, may very well be the result of the composition of your microbiome rather than just something on your mind. [24] One of the most important roles of the microbiome is to interact with the Enteric Nervous System to manufacture the feel-good hormones and neurotransmitters, serotonin, dopamine, and GABA. [43] It is estimated that 50% of dopamine and 95% of the body's serotonin is found in the GI tract.[25] In a healthy gut, these neurotransmitters are sent to the brain via the vagus nerve, helping to lift your mood. [44]

It's Visceral.

When your microbiome is imbalanced, there is a greater chance of miscommunication at the axis, much like receiving only part a confusing text from a friend - it creates anxiety. Anxious thoughts are inflammatory too - they increase the potential for gut permeability which can change the composition of your gut bacteria, leading to increased leakiness of the gut wall which then allows toxins to enter your bloodstream, creating inflammation throughout the body with the potential to cause autoimmune issues. [18] [9]

Happily, the science of Psychobiotics is gaining speed. And that's good news when you consider the sad state of the Standard American diet and the increased use of psychotropic medications.

Try adding a high quality probiotic to your daily supplement regimine. See if you feel a change in your mood!



> *"If microbes are controlling the brain, then microbes are controlling everything."*
>
> *John F. Cryan*

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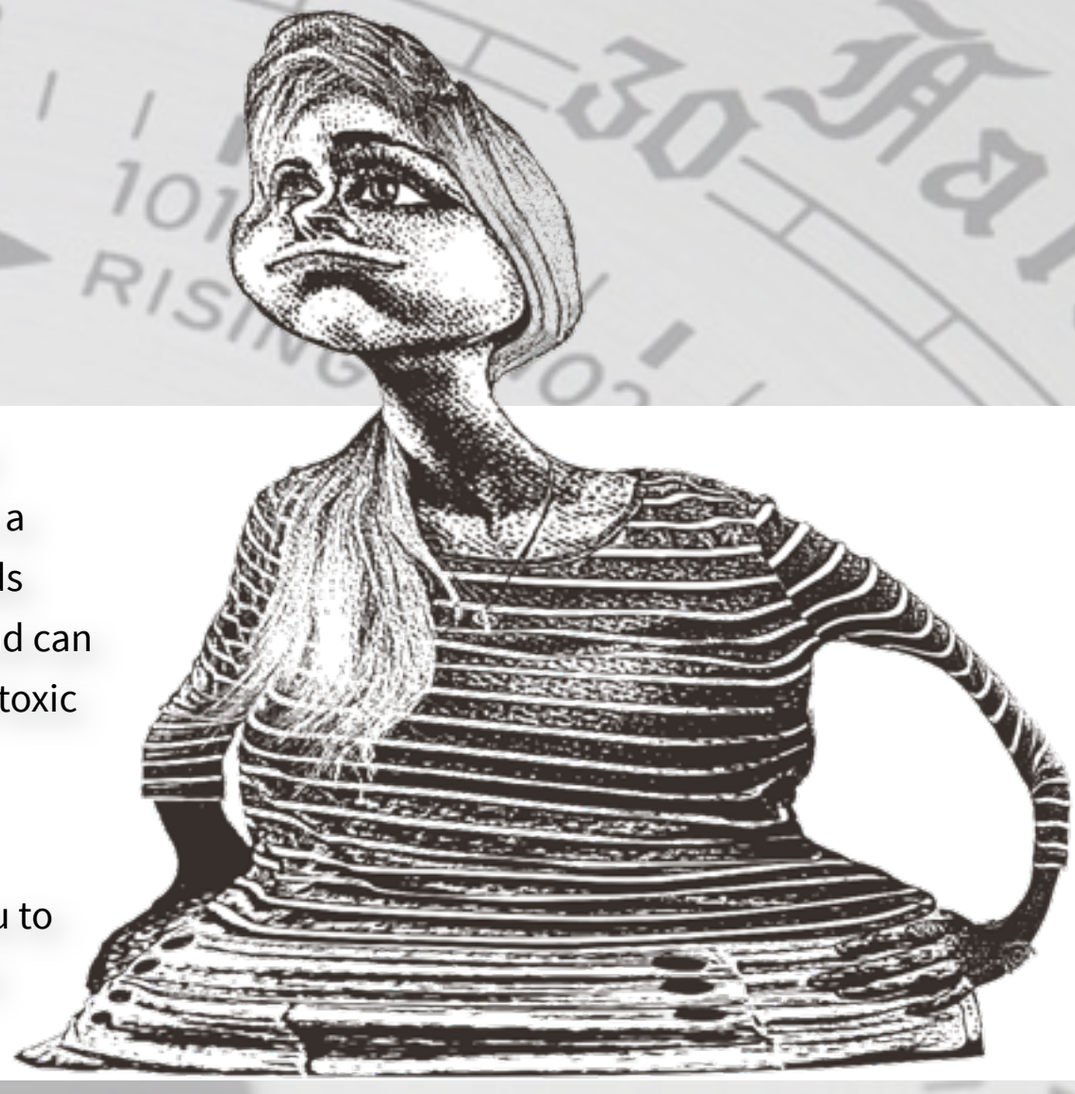
The Gut: A Barometer for Emotional & Physical Health

> “Promising interventions for depression from a gut-brain perspective include probiotics, fermented foods, natural fats, and eliciting the relaxation response for optimal digestion, anti-inflammatory, and insulin sensitizing effects. This is termed a psychoneuroimmological approach and it is likely to represent the future of mental health care.
>
> Kelly Brogan MD



If you have unforgiving sugar cravings and are feeling fatigued, bloated, have joint and muscle pain, brain fog, depression, low libido, and have difficulty losing weight, there’s a good chance you may be struggling with an overgrowth of yeast in your gut. Sugar feeds yeast. [26] The presence of yeast overgrowth causes chronic inflammation of the gut and can greatly alter your ability to absorb nutrients and will push hypersensitivity reactions of toxic by-products into the bloodstream. Inflammation of the gut will greatly contribute to depression, anxiety and poor mental function. [27]

Committing to the suggested 4 ways to optimize your digestion that follow can help you to reduce inflammation of your gut and make changes to the way you feel, physically and emotionally. Do you have a gut reaction about all this? Listen to that!

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Chapter Six: 4 Ways to Optimize Your Digestion

#1 Remove #2 Replace #3 Reinoculate #4 Reset

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#1 Remove Inflammatory Substances

1. Sugar
2. Gluten
3. Wheat
4. Dairy
5. Alcohol
6. Caffeine
7. Processed Foods
8. Refined White Foods
9. Genetically Modified Foods
10. Coloring, Additives, & Preservatives
11. Fried Foods
12. Parabens & Formaldehyde in Skincare Products

Be Your Own Health Detective

We are each biochemically unique, and not all substances affect us in the same way. Try eliminating an item above for a week just to see how you feel! Reintroducing it will be another good test. We need to be our own health detectives in order to discover our responses to the different items above.

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#2 Replace Lifestyle Practices

REPLACE

Refined foods with **nutrient dense foods**

Digestive enzymes with a **high-quality supplement**

Chemical skin care products with **Preservative free**

Soda and liquid sugar with **infused water**

The way you **sit on the toilet** from 90° to **35°**

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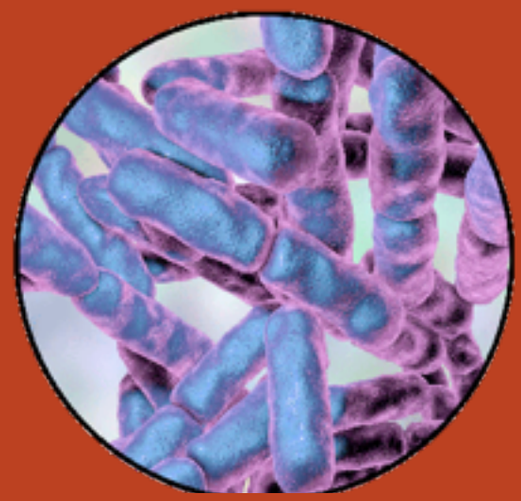
#3 REINOCULATE

Probiotics + Prebiotics = SYNBIOTIC

Probiotics are live microorganisms that live throughout your body especially inside your gastrointestinal tract and on your skin. Like all living things, probiotics need to be fed to remain active and healthy so you can reap their benefits.



Bifidobacterium

Lactobacillus

Prebiotics are soluble fiber which are not digested by our enzymes and act as nourishment for the probiotics. The more food, or prebiotics, that probiotics have to eat, the more efficiently these live bacteria work and the healthier your gut will be.

You're probably already ingesting prebiotics and may not even know it. Keep reading for a list of prebiotic foods.

Synbiotics is the synergistic combination of Probiotics and Prebiotics to enhance the health functions of the human gut. Lifestyle factors like stress, aging, a standard diet, and the overuse of antibiotics and other medicines are detrimental to our intestinal flora by killing off the good bacteria thus having a detrimental effect on our overall health. It is important to "reinoculate" or "repopulate" the gut with probiotics ("pro" means good and "biotic" means pertaining to life) and prebiotics to keep your digestive and immune system healthy, active, and thriving. Prebiotics are the structural lattice that allow probiotics to flourish.

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Probiotics

With all the probiotic supplements on the market today, how do you choose the best one?

A ”good” probiotic needs to:

- **Survive the harsh environment of your stomach acids.**
- **Guarantee the viability of the formulas for at least 12 months after the date of manufacture with zero refrigeration.**
- **Deliver a variety of strains.**
- **Help regulate bowel function.**

Foods high in probiotics are fermented dairy products like yogurt, cheeses, kefir and sour cream, fermented foods like sauerkraut and kimchi (pictured to the right) and fermented tea - kombucha.

Prebiotics

Prebiotics naturally exists in many foods you may already consume on a regular basis. Since fiber is the source of prebiotics, foods that are high in fiber are also typically high in prebiotics.

Prebiotic foods include:

- **Raw Garlic**
- **Raw Leeks**
- **Raw Onion**
- **Cooked Onions**
- **Raw Asparagus**
- **Raw Banana**
- **Fiber**
- **Cabbage**

Many of these foods are naturally synergistic, containing both prebiotics and probiotics. Nature made them synbiotic.

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#4 Reset

10 Keys to Live Anti-Inflammatory Lifestyle!

- Eat Clean Food
- Move Your Body
- Take High Quality Vitamins
- Improve Your Sleep

- Drink Clean water
- Embrace Germs
- Use Healthy Skincare

- Reduce Environmental Toxins
- Try a Cleanse
- Live Mindfully

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#1 Eat Clean Food!

You've heard it before - you are what you eat! Wouldn't you rather have food that is fresh and alive rather than over processed and carb-laden? Ultimately, you are what you digest, absorb, utilize and excrete! When that process runs smoothly you're more apt to feel on top of the world with energy to spare!

Meals are meant to nourish your cells, to be the fuel that carries you across the finish line of life's many successes. Meals are also a time to gather with friends and family, share stories and bask in a sense of belonging - nutrition for your soul.

We were given teeth for one very particular reason, to chew our food. The more you chew your food, at least 30 times a bite, the more you will help the digestive process so your body doesn't have to work so hard.

There is a fascinating interplay between the foods we choose to eat and how well our body can extract nutrients. According to researchers, your diet will influence the composition of your microbiota, and your microbiota will in turn influence the nutritional value of your food.[28]

Eating a well-balanced diet high in plant based proteins, fats and carbohydrates along with high quality supplements can help you to pop out of bed in the morning feeling charged with meaning and purpose.

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#2 Move Your Body!

Regular physical exercise impacts many aspects of your health—from our DNA and genes to our gastrointestinal tract. It has been known for quite some time that exercise increases gut transit time (That means how long food takes to pass through you!). Exercise is extremely important to all aspects of health

Elements of a good exercise program include:

- Warm-Up and Cool-Down.
- Endurance and strength and flexibility.
- Aerobic exercise (an excellent antidepressant, de-stressor and more).
- Resistance training. Dumbbells and barbells are your friends and you don’t need to choose the heaviest weights.
- Exercises targeting your CORE. Exercises like bridges, planks, crunches, and sit-ups can improve your balance and stability, posture and make everyday tasks easier.
- Minimal impact on joints.
- Something you do routinely 5 to 6 days a week.
- Exercise with others to offer mutual inspiration and support.

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#3 Take High Quality Multi-Vitamins!

What to consider when choosing a good supplement brand!

- Third-party verification of Good Manufacturing Practices (GMP).
- Meets NSF International requirements for Dietary Supplements.
- Approved by ConsumerLab.com, a leading provider of independent test results.

Supplementing with micronutrients is an essential part of a healthy diet. The Standard American Diet is void of most nutrition - with over-farming of the land and the over-processing of food, there is very little nutrition in the final product. Vitamins and trace minerals are essential to cell growth and organ function.

Your gut functions optimally when it has the raw materials it needs. [29] Besides a high quality, GMP multivitamin multi-mineral supplement containing powerful antioxidants and minerals - other nutrients that support gut function are:

- **Digestive enzymes [45]**
- **Fiber (Prebiotics) [35]**
- **Fish Oil [34]**
- **Vitamin D [9]**
- **Magnesium [30]**
- **Liver support [31]**
- **Beta Glucans [32]**
- **Grape seed extract [33]**
- **Zinc [5]**
- **Probiotics [36]**

Your nutritional needs vary from day to day based on your level of physical exertion, the quality of the foods you eat and your exposure to toxic elements in the air, water and food. In 2002, the Journal American Medical Association (JAMA) recommended that all adults take a daily multi-vitamin multi-mineral supplement. [47]

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#4 Improve Your Sleep

We don’t have to tell you, sleep is an essential part of your well-being. If you’ve ever pulled an all-nighter you’ve felt how poorly your body and mind perform the next day.

Sleep is a time for healing when bodily systems on autopilot go to work to repair, rejuvenate and recharge your body while conscious bodily systems take a back seat.

According to Dr. Michael J. Breus, the sleep doctor, current research is revealing an important connection between quality sleep and gut health. They have found that circadian rhythms, inconsistent sleep-wake cycles and low levels of melatonin production all play a role in increased gut permeability and leakiness of the gut. [37]

If sleep is elusive try one or more of these strategies:

- Turn off your mind, meditate before bed.
- Eat dinner early, allowing 3-4 hours to digest food.
- Try a high-quality Melatonin supplement.
- Be consistent with sleep times.
- Take Magnesium at night.
- Try a bit of Lavender oil on your pulse points.

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#5 Drink Clean Water!

Water! The most abundant compound on our Earth. Your body is 60% water. [38] Yet most of us are miserly in our daily consumption barely managing to drink even 32 ounces per day. Many different suggestions abound as to the ideal amount of water to be consumed - the most common - drink half your body weight in ounces. So, a person weighing 160 lbs would ideally drink 80 ounces of water per day.

Adequate water consumption is crucial for healthy digestion. It assists in the breakdown process of food while boosting the absorption of nutrients in the gut. Having sufficient hydration is essential in maximizing the flow and flush of all your organs, especially your lymphatic system.

Moving on from the importance of the quantity of water, let's look at the quality of the water we drink. So many cities and town water infrastructures treat water with chlorine and/or add fluoride. And though there are valid reasons for treating water with a disinfectant like chlorine – we have to know that chlorine can destroy gut bacteria.

Solution? Drink only filtered water. The best filters to use are activated carbon filters (aka activated charcoal).

Remember that your gut microbiome is a delicate ecosystem and is at the mercy of all our lifestyle choices.

Try this! First thing in the morning, before coffee or tea drink a glass of water with fresh lemon juice and a dash of cayenne to jump start your metabolism and inspire a bowel movement.

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#6 Embrace Germs

Is being hyper-clean making us healthier? There is a body of evidence that suggests it's actually making us sicker. Obsessive use of antibacterial-wipes, chemical cleaners and the fear of letting a dog or cat lick your face is actually denying you the opportunity to acquire a new strain that could potentially help strengthen your immune system. We need bugs and lots of them. Go play in the dirt for a diverse inoculation!

"We're just talking about living in a more microbially rich environment. That means you don't need to use antibacterial soaps or wipes, or clean everything with bleach, or even wash your clothes every day. Getting dirty isn't so bad. … Just use your common sense." Michael Zasloff, M.D. [39]

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#7 Use Healthy Skincare

Your skin is the largest organ of your body and has its own microbial community, considered even more diverse than the gut. Many skincare lines on the market destroy these beneficial microbes with harsh chemicals, leaving the skin vulnerable.

Besides your hands, your face is your most exposed body part. Your skin is a reflection of the state of your health - another barometer for what might be happening in your gut.

The many layers of your skin act as a two-way filter, delivering nutrients in through creams and serums and filtering toxins out through sweat. Dehydration is the #1 cause of dull, sullen skin.

Choose a skincare line that uses peptides and botanicals to signal your skin cells to manufacture natural collagen, hyaluronic acid, and nutrients that will give your skin a glow.

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#8 Reduce Environmental Toxins!

Our environment is loaded with toxins. Our air, water, and soil have been contaminated over the years and those toxins can wreak havoc on our gut microbiome. Everyday cleaning products with brand names we all know and have trusted can contain some of the worst possible toxins. People are often surprised by the health risks posed by the everyday products and behaviors of a modern family. Sometimes, the biggest dangers to your health are the ones you can't see. [40]

DYI Lavender Mint All Purpose Cleaner

You will need an opaque spray bottle, 16 oz hydrogen perox-ide (3%), ½ teaspoon lavender essential oil, ½ teaspoon lemon essential oil, ⅛ teaspoon peppermint essential oil. Mix, shake and use.

TEN TIPS to start making your home cleaner!

1. Take your shoes off before walking through the house.
2. Have a qualified technician service your heating system, water heater, and other coal, oil, or gas appliances every year.
3. Install a carbon monoxide (CO) detector in your home.
4. Avoid lead-based paints.
5. Even the smallest amount of water can cause mold to form and grow in the most unexpected of places. Consider getting a dehumidifier if you live in a humid environment or near the coast.
6. Have a water filtration system added to your water tank or your faucet or purchase a free-standing model or a pitcher for your refrigerator.
7. Keep all household pesticides in a locked cabinet and out of reach of children.
8. Regularly clean, remote controls, computer keyboards, phones, and tablets.
9. Carpets and mattresses are havens to dust mites, dander, and dirt. Clean your carpets regularly and consider adding a cover to your mattress.
10. Consider replacing your non-stick pans with stainless steel or cast iron.

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#9 Try a Cleanse

It can be very beneficial to give your digestive system a break and go on a short cleanse. If you have never tried a cleanse before you might be wondering what it is like and what you should expect. Here are some **do's** and **don'ts** to keep in mind when you are doing your cleanse.

1. **Do** find a friend who will do the cleanse with you. It will be a lot easier if you have someone to talk about the experience with, so that you can share both the highs and the lows. Tip - if you do the cleanse with your partner you won't have to watch them eat when you can't!

2. **Don't** have a negative attitude. If you think only about all of the foods that you can't eat during your cleanse, you will only make yourself miserable. Instead, focus on the health effects.

3. **Do** phase-out certain foods in advance of your cleanse. A few days before you can gradually reduce your sugar, alcohol, coffee and wheat intake. This means that you will go through the headaches, cravings and other withdrawal symptoms before you are actually on the cleanse.

4. **Don't** jump right back into eating normal food again. Ease your way back by introducing soft easy to digest foods. Having a hamburger immediately following a cleanse can put a lot of stress on your digestive system.

My Favorite Shake Recipe

3 scoops of chocolate protein powder in unsweetened almond milk, 1/4 C frozen blueberries, a handful of greens (fresh or frozen), add ice, blend and enjoy!

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#10 Practice Mindful Living

The ability to remain calm while under stress is a superpower we all need. Being mindful, present and having the capacity to respond as opposed to react, will give you more than peace of mind, it will support your long-term health while also increasing the health of your vagus nerve. [41]

If you remember, the vagus nerve is the information highway connecting your brain with your microbiome. A healthy vagus nerve will support you to maintain your equilibrium no matter the storm.

The vagus nerve is positively stimulated by diaphragmatic breathing (deep breathing). The higher the tone of the vagus nerve equates to greater levels of well-being whereas lower vagal tone may be indicative of the presence of inflammatory states, depression or a weakened immune system.

Stimulating the vagus nerve releases the neurotransmitter, acetylcholine, which acts as a calming force lowering your heart rate and blood pressure. When you need to bring calm upon yourself know that you are only a few deep breaths and exhalations away from releasing a dose of acetylcholine into your body – ahhhhhhh….

So, remember the regular practice of meditation, as well as, many other mindfulness-based practices can support the health of your digestive system which in turn leads to increased emotional resilience. All because mindfulness-based practices help to reduce or interrupt the fight/flight response that all too easily can become a default reaction during stressful events.

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Action Plan - You've Got This!

We've covered a lot about your gut and your physical and emotional health. It's a lot to take in. Now it's time to develop your own personal action plan.

We recommend you take out a journal and follow these steps

- Write down your main takeaways from reading this book.
- List 3 specific actions you can take today based on what you've learned.
- Consider asking a friend to be your buddy on your journey towards better health.
- Reach out to me to learn about a community that you can join for support with this anti-inflammatory lifestyle.
- Consider working with a coach as accountability does lead to higher success.
- Review the recommended reading list to continue your education.

> *I have always believed that community equals immunity.*
>
> Christiane Northrup MD

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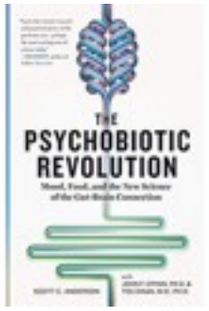
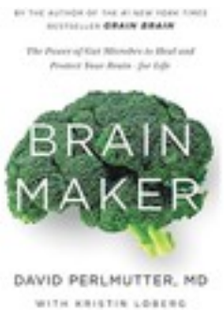
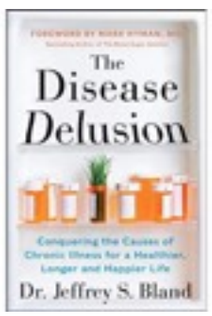
Recommended Reading



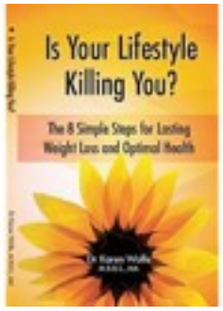
The Psychobiotic Revolution: Mood, Food, and the New Science of the Gut-Brain Connection
by Scott C. Anderson, John F. Cryan, Ted Dinan



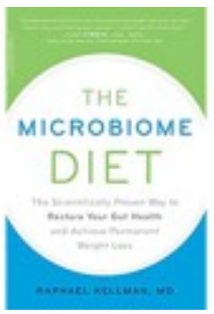
Brain Maker: The Power of Gut Microbes to Heal and Protect Your Brain–for Life
by David Perlmutter M.D.



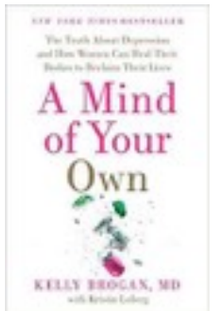
The Disease Delusion: Conquering the Causes of Chronic Illness for a Healthier, Longer, and Happier Life
by Jeffrey S. Bland and Mark Hyman M.D.



Is Your Lifestyle Killing You?: Eight Simple Steps for Lasting Weight Loss and Optimal Health
by Dr Karen Wolfe



The Microbiome Diet: The Scientifically Proven Way to Restore Your Gut Health and Achieve Permanent Weight Loss
by Raphael Kellman M.D.



A Mind of Your Own: The Truth About Depression and How Women Can Heal Their Bodies to Reclaim Their Lives
by Kelly Brogan M.D.

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Glossary of Terms

Autonomic Nervous System: The part of the nervous system responsible for control of bodily functions not consciously directed, such as breathing, the heartbeat, and digestive processes.

Central Nervous System: The part of the nervous system in vertebrate animals that consists of the brain and spinal cord.

Circadian Rhythms: Daily cycles of biological activity within a living organism and is often referred to as the body's internal biological clock. They regulate sleep and waking cycles within each 24-hour period.

Enteric Nervous System: One of the main divisions of the nervous system that governs the function of the gastrointestinal system.

Epigenetics: The study of the way in which the expression of heritable traits is modified by environmental influences or other mechanisms without a change to the DNA sequence.

Functional Medicine: A medical practice that determines how and why illness occurs and restores health by addressing the root causes of disease for each individual.

Genetically Modified: A term denoting or derived from an organism whose DNA has been altered for the purpose of improvement or correction of defects.

Genetically Modified Foods: Foods that have been altered to enhance certain traits for the purpose of making them more desirable to consumers.

Good Manufacturing Practices (GMP): The practice required in order to ensure the guidelines recommended by authority that controls authorization and licensing for manufacture and sale of food, drug products, and active pharmaceutical products.

Homeostasis: The tendency toward a relatively stable equilibrium between interdependent elements, especially as maintained by physiological processes.

Human Genome Project: An international project to study the entire genetic material of a human being, completed in 2003.

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Human Microbiome: The totality of microorganisms and their collective genetic material present in or on the human body or in another environment.

Microbiota: The microorganisms of a particular site.

Mindfulness: The psychological process of bringing one's attention to experiences occurring in the present moment.

NSF International: An American product testing, inspection and certification organization based in Ann Arbor, Michigan. NSF ensures product and ingredient safety, giving both industry and consumers peace of mind through GMP compliance, accredited certification programs, testing services and training capabilities.

Neurotransmitters: Chemical substances that are released at the end of a nerve fiber, causing the transfer to another nerve fiber, a muscle fiber, or some other structure.

Nutrigenomics: The scientific study of the interaction of nutrition and genes, especially with regard to the prevention or treatment of disease.

Psychobiotics: Defined as “A live organism that, when ingested in adequate amounts, produces a health benefit in patients suffering from psychiatric illness.”

Parabens: Any of a group of compounds used as preservatives in pharmaceutical and cosmetic products and in the food industry.

Psychotropic Medications: Any medication capable of affecting the mind, emotions, and behavior.

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