CHAPTER 1: THE BASICS

Before we dive into the Heal Your Body protocol, let’s talk about food and environment. There are a few fundamentals of hormonal and adrenal health that must be honored to get results with any healing program, all part of the Heal Your Body Lifestyle.

1) Don’t Skip Meals. It’s important to eat at least three meals a day. If you have adrenal issues, in particular, you may benefit from eating up to five small meals a day. High quality protein and veggies are important — a moderate to high amount of fats, with very little carbs. Eat real food without chemicals or processing as much as possible. We’ll talk in the next chapter about your body’s ability to digest and absorb fats; it’s important to address your digestion so you get the maximum benefit from the foods you eat without putting a toxic burden on the body.
A note to vegetarians: a vegetarian diet does not give you the amino acids you need for detoxification and neurotransmitter synthesis. Our bodies need good protein from meats.

2) **Eat organic when possible.** I like people to eat at least 70-80% organic in protein, fat and vegetables. In particular, [avoid the Dirty Dozen](#). If you have the PON1 SNP, your body does not detox pesticides well and you, in particular, need to avoid the Dirty Dozen and eat organic whenever possible. We’ll talk in a later chapter about the 23andme genetic test to help you determine if you have the PON1 SNP.

3) **Minimize exposure to EMFs.** EMFs alter the energy production and mitochondrial function in the cell. It exacerbates the reproduction of microbes in the body, causing them to reproduce faster. It causes mycotoxins or mold in the environment to increase. Basically, EMFs cause breakdowns in our body’s immune system that makes us sick, and in this reduced state, we’re unable to fight off pathogens and other environmental factors, so we get sicker.

**A few things you can do to reduce EMF:**

1) Unplug wifi at night,
2) Turn off your cell phones when not in use,
3) Use corded phones instead of cordless,
4) Use a wired keyboard instead of typing on a laptop (or at least, use shielded gloves),
5) Make sure your bed is clear of electronics when sleeping (a 3-4 foot buffer zone is good), and
6) Ground your computer using a grounding cord to minimize the EMFs put into the environment.

4) **Pay attention to your water.** Make sure you have some sort of water filter that’s filtering heavy metals and chlorine from your drinking and bathing water. Reverse osmosis water is ideal for drinking. You can get a [filtration system for your sink](#), buy reverse osmosis water at your local health food store, or even have reverse osmosis water delivered to your house. Adding celtic or himalayan sea salt with trace minerals to your water can help hydrate your cells.

**A word about sodium:** Sodium is only “bad” (as in Morton’s salt) when it’s consumed by itself, out of proportion with other trace minerals. You need sodium — it’s an essential electrolyte that helps you move nutrients in and out of your cells, and it’s crucial to the sodium potassium pump, which is critical to all cellular functioning. Celtic or himalayan sea salt, in particular, are an important part of good health.

5) **Mind your Light Cycles.** Our bodies are meant to sleep when it’s dark and to be awake when it’s light. Our body’s biology syncs with the earth’s magnetic field (Schumann resonance), which changes with the light cycles, and our parasympathetic nervous system (responsible for restoration, rejuvenation and repair) is activated by light cycles. When you’re overly exposed to artificial light after dark and not getting to bed on time, you’re interfering with your body’s ability to restore, rejuvenate and repair. This disrupts every major system in your body and causes issues with insulin sensitivity, immune function, impaired ability to detoxify and impaired growth hormone production. It doesn’t only matter that you get 7-8 hours of sleep; WHEN you are sleeping matters even more.

**A few things to help you mind your light cycles:**
1) Turn off all electronics two hours before bed,

2) Reduce artificial light in your home or environment as much as possible (use amber light bulbs, which block blue light),

3) Wear blu-blocking glasses after dusk to block blue light,

4) Use blackout curtains in your bedroom if there’s a lot of artificial light outside your bedroom windows at night,

5) Use flu_x on your computer to automatically filter blue light at night.

6) Watch the humidity levels in your home. Low levels of humidity dries out your mucus membrane, and too much promotes mold growth. You can purchase a hygrometer (humidity meter) for inside the house and underneath the house. If your humidity levels are too low, put a humidifier in the room(s) you occupy most. And if the levels are too high, a dehumidifier can help reduce the humidity in the room.

7) Breathe good air. There are so many pollutants in the air that overwhelm our detoxification pathways and irritate our eyes, lungs and sinuses. This all contributes to a buildup of toxins that creates a huge toxic load in the body that makes us sicker. The best way I know of to improve the quality of the air you’re breathing in your home is the Austin air filter.

8) Stay away from toxic people or situations. When you are around people who drain your energy or put you into a stressful state, your body responds to this stress by activating the flight or fight response. Under duress, your body releases cortisol and suppresses DHEA production and growth hormone production. These can all depress thyroid or hormone production, reduce immune system function and interfere with digestion. You can’t compensate for this by taking a vitamin or eating organic foods.

9) Quiet the mind. In our hyper-stressed world, where our sympathetic nervous system is in overdrive, creating opportunities that activate our parasympathetic nervous system become even more important for our overall health. A spiritual practice, quiet time, meditation or gratitude journaling can all activate our parasympathetic nervous system and introduce moments of healing and restoration into our hectic lives.

One of my favorite ways to quiet the mind during the day is to use the Heart Math Institute’s EmWave2. It helps to create coherence between the mind and heart and increases parasympathetic activity.

CHAPTER 2: ADDRESS INFECTIONS

When we consider toxicity in the body, often we consider environmental toxins, i.e. endocrine-disrupting chemicals, heavy metals and other pollutants. But the total body burden that acts as internal stressors is equally, if not more, significant to high cortisol and conditions like leaky gut, adrenal fatigue,
every hormone dysfunction known to man (PCOS, endometriosis, fatigue, weight gain, infertility, impotence, lack of sex drive, moodiness, estrogen dominance and more) and autoimmune disease (fibromyalgia, Hashimotos, type 1 diabetes, Addison’s disease, cancer, lupus, cushing’s syndrome, etc.).

Since most of us did not arrive in this world with our present level of functional medicine knowledge, there was likely a period, or periods, of time where we weren’t optimal — from an immune, hormonal and digestive perspective. This means there were likely opportunistic periods in our lives where these ‘stealth pathogens’ became active and began their assault on our bodies.

These pathogens are common, often-overlooked contributors to leaky gut—which dominoes into a whole host of hormone and immune issues— and by not addressing them, we derail all other attempts we might make to become optimal. Said another way, optimal is not possible until we eradicate these pathogens. Anecdotally, I’d suggest that 95% of people have pathogens that are keeping them from being able to properly optimize.

We are all exposed to viruses. Whether that virus becomes active or not depends on our immune function, hormonal status, digestive health, circadian sleep cycle, our glutathione levels, and much, much more.

To start, you should have the following tests run to determine which viruses are overactive and how your immune system is responding to internal stressors. **Have an IGG and IGM run for each of the following:**

- HHV-6
- Cytomegalovirus
- Epstein-barr Virus
- Parvovirus
- Borna Virus
- Mycoplasma Pneumoniae

Working with an integrative or functional medicine practitioner well-versed in dealing with these microbial infections is important for both test interpretation and treatment if positive. If you test positive for any of the tests above, numerous anti-microbials—both prescription and natural—can effectively lower your body’s pathogen burden, including:

- Grape seed extract
- Monolaurin/Lauricidin
- Bee propolis
- Olive leaf extract
- 1,3/1,6 Beta glucan
- BiocidinLDM-100
- LDM-100
The duration and dosing of these nutraceuticals depends on the number of pathogens present and the immune status of the individual. Nutraceuticals that contain multiple nutrients working synergistically are preferable over mega-doses of single nutrients in most cases. It’s important to realize that these infections will NOT—at least the majority of the time—present in the traditional manner with a fever, cough, runny nose, etc. They may present as fatigue, brain fog, mood swings, insomnia, joint pain, weight gain, anhedonia (inability to experience pleasure), loss of motivation, and other nagging symptoms. These symptoms are not due to the microbe itself, but the immune system’s response to the pathogen, which involves the production of pro-inflammatory cytokines. Cytokines are how our immune and other cells communicate. The bad news is that high levels of pro-inflammatory cytokines will negatively impact the production of all of our hormones.

CHAPTER 3: MOLD

I finished undergrad as a Health Science & Chemistry major with an interest in functional medicine, and I was dealing with a lot of symptoms that had me concerned: fatigue, insomnia, joint pain, decreased libido, inability to recover from exercise, constipation and frequent stomach pain. I began seeing specialists in different areas of functional medicine, and noticed that every doctor wanted to hyper focus on something different, and few could really make sense of my labwork. My parents relied on mainstream medicine to help them take care of us, and I was prescribed antibiotics as a child like it was candy... so I knew I needed to improve my digestive health.

And I spent the next five years working on it. I got rid of the bad bacteria, the Candida Albicans, added in probiotics, and restored my stomach acid and bile salts to optimal levels.

But I was still having diarrhea, alternating with constipation. In 2008, I did my first stool test and found a +3 (scale from 0-4) under the Yeast/Fungi section labeled “taxonomy unavailable.” Typically, this suggests ingested mold, but does not specify from where the mold came. The most likely culprits included my home or my office. Further testing indicated it was a combination of both.

So I began working on detoxing the mold. After two years, I discovered I had the “dreaded genotype,” making it difficult for me to detoxify mold, and it took me another two years to fully detoxify from it.

So here’s the big take home message: I was having digestive symptoms that were not caused by a digestive problem. The site of symptoms and the source of symptoms are usually not the same. **This is crucial for you to understand.** We know that optimal health starts in the gut, and healing the gut requires more than probiotics, fermented foods and bone broth.

Mold overgrowth is a rapidly-growing epidemic in homes, offices and schools. *Just because you can’t see or smell mold does NOT mean your home/office is free of mold.* Mold often resides underneath carpet, hardwood floors and behind walls. Mold loves moist, dark areas. Basements and attics are also prime locations. There are several reasons for this: shoddy building construction, the demand for “energy efficient” homes (which does not allow for a good exchange between indoor and outdoor air), poor awareness of mold, and more.
Mold can cause any of the following symptoms:

- Difficulty breathing
- Asthma
- Nasal congestion
- Fatigue/lethargy
- Skin issues, such as rashes or itching
- Nose bleeds
- Diarrhea
- Stomach pain
- Dizziness
- Tachycardia (elevated heart rate)

But how do you know if you have an issue with mold? There are some indicators you can infer on the Metametrix GI Effects test, and besides checking the symptom list above, there are urine mycotoxin tests available. Many people with low urine mycotoxin excretion are the individuals with the most problems. In short, they have trouble excreting the mold, so it hangs out in their body, wreaking havoc.

The second test I recommend is a blood test for the HLA DR genotype. Individuals with certain genes have difficulty processing mold. According to Dr. Shoemaker, roughly 25% of the population possesses 1 of 5 genotypes that have issues with mold. Other blood biomarkers that can indicate mold exposure include

- Alpha Melanocyte-stimulating hormone
- Vasoactive intestinal peptide
- VEGF (vascular endothelial growth factor)
- Leptin
- MMP-9
- EPO
- C3a
- C4a
- ADH

One of the ways in which mold proves so harmful is by activating some very potent inflammatory pathways. Inflammatory cytokines are released by immune and other cells to communicate with one another. Two very potent inflammatory substances are TNF-alpha and MMP-9. They make you feel awful, like you get hit by not one, but two Mack trucks! Curcumin/turmeric may be helpful in reducing these symptoms by shutting down their production at the genetic level.

I highly recommend having your home and office tested using the ERMI test from Mycometrics. Mycometrics will send you cassettes that you place in your vacuum and take samples from several rooms of your home or office. Then, they run an ERMI on 36 different mold species and quantify them. If elevated levels of mold are discovered, you will need to have a mold inspector out to your home to perform a visual inspection for the source of the moisture. Mold cannot exist without moisture, most commonly from leaks in the roof, poor ductwork, or your HVAC system. A remediation company can
work with you to develop a remediation plan, which may require you leaving your home for a short period of time.

After you’ve remediated the mold, using a high quality HEPA filter such as an Austin Air filter can prove very helpful in improving your indoor air quality. Other things that help to get rid of mold toxins in the air include Frankincense and Thyme essential oils, diffused into the air to help paralyze the mold spores.

CHAPTER 4: BALANCE YOUR HORMONES

Hormonal health literally affects every cell in your body. Here are the best tests and optimal levels for assessing and monitoring your hormone health:

- Free T3: 300 to 450 pg/mL
- Free T4: 1.0-1.5 ng/dL
- Total T3: Top 25%
- Total T4: 6-12 ug/d
- Thyroid binding globulin: 18-26 ug/dL
- Reverse T3: Bottom 25%
- TPO antibodies: 0
- Anti-thyroglobulin antibodies: 0
- Free testosterone: top 10% for men and women
- Total testosterone: top 25% for men and women
- Total estrogens: Middle 50% as long as progesterone is in the top 25%.
- Estradiol--ultra sensitive: for men, optimal is between 15 and 25. For women, you want the Pg:E2(estadiol) ratio to be at least 400, preferably 500.
- Progesterone: top 25% for men and women
- Pregnenolone 150 or greater
- Total cholesterol: Greater than 160. If above 220, look to low thyroid function, poor gut health or low testosterone

From these tests, we want to get an idea of your cholesterol, thyroid and hormone production to discern how your cascade is currently functioning. You can get a sense of where your health is at by evaluating your numbers against the optimal ranges. As a reminder, here’s a great visual for how cholesterol is converted to pregnenolone and all of your other hormones:
One commonly seen, but rarely discussed issue, is low total cholesterol. I consider a total cholesterol level less than 160 low. Without cholesterol, you can’t make pregnenolone. And without pregnenolone, you can’t make any of your other hormones! This will have a negative impact on your downstream sex hormones. But what causes low cholesterol? In my experience, the following issues can cause or contribute to a low cholesterol level:

1) Adrenal stress or “fatigue”: Any time the body is under any sort of stressor—external or internal—the need for cortisol increases. In order for the body to make cortisol, you need pregnenolone. Where does pregnenolone come from? Cholesterol! So, you will experience the body depleting its cholesterol stores in an effort to support the need for cortisol. And remember: Stress is cumulative. Staying in the sun too long, not sleeping enough, blood sugar imbalances, gut infections, heavy metals, etc. are all viewed by the body as a stressor.

2) Small-intestinal bacterial overgrowth or SIBO: This refers to a situation where a normally sterile region—the small intestines—experiences an influx of bacteria from the large intestines. These bacteria use the macro-nutrients we ingest—proteins, fats, and carbohydrates—for their own use before our body is able to assimilate and metabolize them.

The long-term solution is to address each and every stressor in the body so that the overall need for cortisol does not deplete your cholesterol levels. This takes time. If the individual is experiencing SIBO that must be addressed with dietary changes and an anti-microbial protocol. In the short term, a supplement known as Sonic Cholesterol by New Beginnings Nutritionals may provide support to the hormonal cascade.

There are various ways to test your hormone levels: saliva, blood, and urine. Blood testing gives a snapshot of what your hormones are doing at the moment when drawn. This has obvious limitations. A 24 hour urine panel by Genova Diagnostics or Meridian Valley Labs would give you more information in regards to what your body produces during an entire day.
Saliva testing is accurate for testing both cortisol and DHEA, but not very accurate for the other hormones.

CHAPTER 5: DIGESTIVE HEALTH

As I stated earlier, digestive health is a critical part of healing your body. If your digestive system is off, you will not absorb the greatest amount of nutrients from the food you eat and will introduce a toxic burden on your body.

Stomach acid is critical for the entire digestive sequence, and bile helps you assimilate fats and fat soluble vitamins (more on bile later). If you don’t produce enough stomach acid:

- You will not be able to break down and assimilate your food or supplements.
- You are pre-disposed to every nutrient deficiency known to man, including B12, magnesium, zinc, iodine, selenium, etc.
- You are at risk for parasite, bacterial and fungal infections.

Stomach acid is required for the production of pepsin, the enzyme needed for protein digestion. Low stomach acid equals insufficient protein breakdown, which results in amino acid deficiencies. Amino acids are needed for detoxification, neurotransmitter synthesis and immune function.

Heartburn, anyone?

You’ve probably heard about GERD, or gastroesophageal reflux disease, aka heartburn. Traditional medicine has convinced us that this condition is caused by too much stomach acid. The reality is that it is usually too little stomach acid! The issue is NOT the amount of acid in the stomach, but the presence of acid in your esophagus.

At the end of your esophagus, there is a structure known as the lower esophageal sphincter, or LES. This structure normally opens when you swallow food and liquids to allow them to pass into the stomach. When the LES malfunctions, acid from the stomach passes into the esophagus. Your esophagus does not have a protective lining to prevent acid-induced damage. What causes the LES to open when it isn’t supposed to? Increased pressure in your abdominal cavity, or elevated intra-abdominal pressure (IAP). Bacterial overgrowth, along with carbohydrate malabsorption, can increase IAP. Without enough stomach acid, the pancreas does not receive the proper signals to release digestive enzymes into the small intestines. The inability to break down carbohydrates produces significant intestinal gas, resulting in the increased abdominal pressure. When the pressure rises above a particular threshold, acid is pushed through the LES and into the esophagus. This results in the symptoms known as acid reflux.

For those dealing with depression, low stomach acid, gut pathogens and malabsorption may play a more significant role than in some other disorders. Remember that roughly 95% of serotonin — the happy chemical — is synthesized in the gastrointestinal tract. Poor gut health equals greater susceptibility to
mood disorders. In addition, certain bacteria, such as Clostridia, can produce neuro-inflammatory molecules like propionate. This would lead to symptoms such as depression, brain fog and anxiety. Another neuro-inflammatory molecule produced by some bacteria is valerate, which leads to anxiety. Lastly, a compound known as lipopolysaccharides produced by gram-negative bacteria can lead to inflammation in the brain that ultimately causes brain degeneration.

What factors lead to low stomach-acid production?
Zinc and iodine are two important minerals needed for the production of stomach acid. In a bit of a catch-22, if your stomach acid is already deficient, you are more likely to have low zinc and/or iodine levels and sub-optimal thyroid function. Thyroid levels impact every function of your body. When levels are low or less than optimal, everything slows down. (If you are testing for thyroid function, don’t just check free T3, free T4 and TSH. You also need to know reverse T3, TPO antibodies and anti-thyroglobulin antibodies to draw any meaningful conclusions).

Any form of stress — external or internal — can also decrease stomach acid production. Think about it: Should your body prioritize digestion when a stress response happens, i.e., you are running from the proverbial tiger? No! A stomach pathogen known as H. Pylori also suppresses acid production in an effort to increase its chances of survival.

Lastly, age plays a significant factor in decreasing stomach acid levels. When do the majority of people experience GERD symptoms? When they are older. We know stomach acid declines as we age, so treating these issues with acid-suppressing drugs can make our digestive problems even worse.

How can you test your stomach acid levels?
There are several tests that can help you decipher your stomach acid levels:

- **Heidelberg Capsule Test.** This test requires swallowing a capsule with the ability to measure pH and record it. This test must be performed in a hospital or M.D.’s office.
- **Metametrix GI Effects test.** This test will not give you a direct reading on your stomach acid levels; however, an experienced practitioner should be able to look at your test and decipher whether or not you have low stomach acid.

How to treat low stomach acid
If you’re over the age of 30, you experience a lot of stress or you have a zinc or iodine deficiency, there is a good chance you have low stomach acid. If you have any of the symptoms of low stomach acid, an easy way to begin supplementing to restore stomach acid levels is to begin supplementing with hydrochloric acid (HCl) with pepsin. At the beginning of each meal, take one 600mg HCl with pepsin capsule. If no negative symptoms (like burning or stomach pain) are experienced after a few days, increase to two capsules with each meal. Continue increasing the dose by one capsule every 2 days until you experience some mild burning. You would then decrease your dose by one capsule and continue with that number at each meal. Restoring your thyroid, zinc and selenium levels and reducing stress.
may allow you to decrease the dosage needed of HCl with pepsin.

Your lifestyle and other health factors will determine how long this supplementation protocol is necessary. Some people may need to follow this protocol forever. Others may be able to stop after a certain time period.

**What you don’t know about gut inflammation can hurt you. Literally.**

If you’ve had low stomach acid for any length of time, it’s likely that you have gut inflammation. If you already have inflammation present in the stomach or the small or large intestines, you must address that first, and putting acid on an already-inflamed surface hurts! The following is a short list of potential causes of gut inflammation:

- Food sensitivities, such as gluten, dairy, soy and others
- Bacterial infections
- Parasitic infections
- Fungal infections
- Low amounts of Lactobacillus, Bifidobacteria and other ‘good’ bacteria
- Low secretory IgA, a protective immunoglobulin that decreases the chances of pathogens adhering to the gut lining
- High cortisol levels
- Antibiotic use/over-use
- Elevated Cortisol:DHEA ratio
- Undigested food particles
- Altered pH due to suboptimal stomach acid, bile and digestive enzymes

**How do you get rid of digestive inflammation?**
The answer, as always, depends on the source of the inflammation.

- There are numerous nutrients that aid digestive repair — glutamine, aloe vera, Spanish Moss, DGL, slippery elm bark, bone broth and many more.
- Balancing the cortisol:DHEA ratio will help to put the body back in an anabolic state, where tissues are able to rejuvenate and repair. An optimal cortisol:DHEA ratio is 5:1 - 6:1. Many people who attempt to supplement with betaine HCl and have a negative reaction are dealing with an inflamed stomach and intestines. Working on mucosal barrier repair first helps to minimize the chances of this happening. Typically, it takes anywhere from 2-6 months to repair mucosal damage. But that doesn’t mean you will need to wait that long before supplementing with HCl. For most people, 4-8 weeks of the above healing nutrients will allow one to begin supplementing with HCl.
A word of caution: If you have been taking a proton pump inhibitor, or PPI, such as Prevacid, Prilosec, etc., you should NOT stop your medication and immediately begin betaine HCl. You will likely need to find a doctor or practitioner knowledgeable in functional medicine for help with your treatment. Abruptly stopping a PPI will often lead to ‘rebound reflux,’ where the digestive tract is not prepared to handle the production of acid. In my experience, the path to long-term healing involves tapering off a PPI medication while beginning an HCl with pepsin protocol long-term.

Remember, the reason most people begin taking a PPI to begin with is that they suffer from insufficient acid. So, if you belong in that category, you will likely require long-term supplementation with hydrochloric acid with pepsin — maybe a year or more.

What if you have never taken a PPI? How long will you need HCl?
It depends on your stress level, age, iodine and zinc status, along with your thyroid hormone levels. Stomach acid alone is not enough to improve your digestion. You need good bile levels.

What does bile do?
Bile helps to emulsify fat and fat-soluble vitamins, and it helps our body to expel toxins. So, if you are supplementing with large amounts of Vitamin D and your levels haven’t budged, you may have a bile and fat malabsorption issue. You can check your bile levels by performing a Metametrix GI Effects Profile (panel 2200).

Cells in the liver (referred to as hepatocytes) produce bile, which is then stored in the gallbladder. The presence of fatty acids in the small intestine signal a hormone called CCK to be released, which then causes the gallbladder to release bile into the small intestine. All of this requires sufficiently-acidified chyme, which depends upon good stomach acid!

What can cause low levels of bile? Poor thyroid function, low cholesterol diets (you need cholesterol to help synthesize bile), low stomach acid, a sluggish liver and insufficient glutathione (also needed for proper bile levels).

What can be done to improve your level of bile salts?
The following supplements may help with bile levels: ox bile, taurine, and glycine.

What if I don’t have a gallbladder?
If you’ve lost your gallbladder, you’re going to need to permanently supplement to boost bile production and movement. Often, those who’ve lost their gallbladder have issues with diarrhea and other symptoms. Supplementation with ox bile and taurine has helped many people without a gallbladder improve their digestion.