GAPS MASTERCLASS

MODULE 1

Blood Sugar & Toxins: The Connections to Diabetes, & Adrenal Health

The Legal Part

Please note that much of this guide is based on my understanding and training as a Nutritional Therapy and GAPS Practitioner, as well as personal experience. I make every attempt to ensure accuracy of the content, and I take no responsibility for errors or omissions.

You should use this information as you see fit and at your own risk.

Nothing in this guide is intended to replace common sense, legal or other medical advice—it is meant to inform the reader. Apply it to your own set of circumstances with care.

Any health recommendations are based on my experience as a GAPS Practitioner and of those I trust. Any recommendations are from sources that I would use for my own family or clients but I make no guarantees about the service or rates you will receive from these providers.

I think you will receive great value from this guide. Please email me at melanie@honestbody.com with any errors or incorrect links so that I can update the materials.

Welcome to:

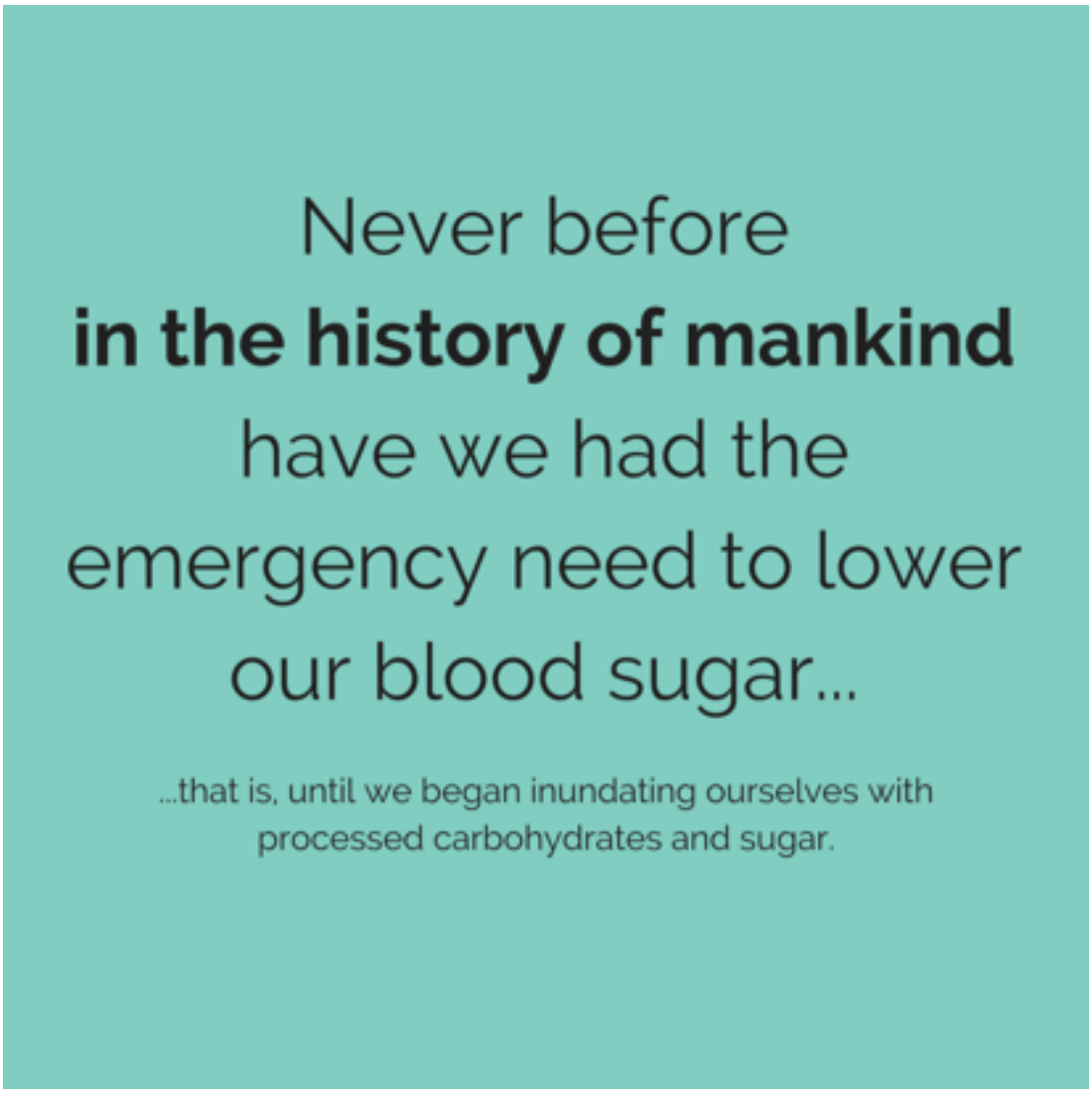
MASTERCLASS MODULE 1

In this workbook, we will be discussing:

1. The basics of blood sugar & why care?
2. What ignoring it leads to
3. A lesser-known factor in dysregulation
4. Self-assessing for indications of trouble
5. Steps to correct blood sugar imbalances

HOW DID WE GET HERE?

When we were going through nutritional therapy training, I remember the following tenet being drummed into our heads:



Following "**Diet"** and "**Digestion"**, **Blood Sugar** regulation is the next most important foundation of health.

The Six Foundations Of Health

1.Diet **2.**Digestion **3.**Blood Sugar **4.**Fatty Acids **5.**Minerals **6.**Hydration

The balance of blood sugar affects the entire messaging system of our bodies (i.e. the endocrine/hormonal system).

Humanity was humming along fine *without* refined sugar until about 400 years ago. Then sugar found its place as one of five major milestones on our march towards the modern diet. Those five milestones were:

1. **The Agricultural Revolution (12,000 years ago)**
2. **Intro to Refined Sugar (1600's)**
3. **Industrial Revolution (1800's)**
4. **Food Giants (1900's)**
5. **WWII (1939 -1945)**

Each milestone left its own mark on our food system. In this module, however, we'll focus on #2, the introduction of refined sugar.

In 1700, sugar was typically for the wealthy, and four pounds per year was average consumption. By 1900, consumption had risen to 90 pounds per year, and by 2008, more than half of Americans consumed a half pound of sugar daily, totaling about ***180 pounds of sugar per year.***

Sugar has the distinction of being 10 times more addictive than cocaine, and we are certainly addicted! This overconsumption has been a big player in our current health issues...let's find out how that works.

HOW DOES BLOOD SUGAR WORK?

In this section we'll talk about how blood sugar works, and what manages it in our bodies. We'll also talk about *why* this is important to you!

Primary Organs Involved

There are three main organs that act as blood sugar's managers. They are the:

1. Pancreas

2. Liver

3. Adrenals

How They Work Together

So let's talk about what happens to your carbohydrates when you eat your next meal.

1. Chemical (enzymes) and mechanical (chewing) actions are taken on those carby foods. These chewing and enzyme actions turn those carbohydrates (hopefully veggies, instead of cereals or crackers) into something that can then be converted by the **liver** into glucose.

2. The glucose jets over to the bloodstream, where it will be tightly regulated for too much or too little. The bloodstream police are only happy with about 80–100 milligrams per deciliter of blood.

3. The **pancreas** gets involved by sending out one of two hormones. Either **insulin**, or the lesser known **glucagon**. Insulin is released to escort glucose in the bloodstream, knocking on the cell's doors to signal them to allow the glucose in, and if there is excess glucose, insulin makes sure it is stored as glycogen in the **liver** and **muscles** for later use.

4. In between meals, or when you've exercised, your blood sugar dips and **glucagon** is then released by the pancreas to convert the

stored glycogen back into glucose and send it back into the blood if your blood sugar dips a little low.

5. This is what happens when blood sugar is working *as it should*. *However*, that is not how it works for many people today. Click on the link below to watch a video by Margaret Floyd, NTP, CGP explaining what can go wrong with blood sugar regulation: https://www.youtube.com/watch?v=EncZzwNqkCE

How Does It Go Wrong

Unfortunately fat storage is only the beginning of the problems that occur when one is not managing their blood sugar. As Margaret mentioned in the video, the adrenals take quite a hit. This leads to adrenal fatigue and a disruption of our hormonal/endocrine system in general.

Our hormones are the messengers for the whole body. When they are "out of whack," messages are mis-sent, untimely, and generally screwed

up. **This has implications for all the organs in the endocrine system and the body as a whole.** This is a very good reason to maintain stable blood sugar.

Blood Sugar Fallout

The fallout doesn't stop there.

When too much insulin is repeatedly sent to manage the excess sugar, the cells start shutting their doors to the insulin (i.e., the receptor sites on the cell membranes become inflamed and unusable). Some of that excess glucose gets stored as fat, but it also stays in the bloodstream. The pancreas goes into overdrive so frequently, thinking that because there is still glucose floating around, it needs to pump out more insulin —this is called **Insulin Resistance**. That built up excess body fat also interferes with the body's ability to use insulin.

What a mess!

...insulin resistance
...adrenal fatigue
...overtaxed, overburdened liver

...and cell membranes that are rigid, inflamed, and unable to "hear" hormones

When the cell membranes become rigid, and the membrane becomes inflamed, the receptors on the membrane stop working. This is not only the scenario for insulin, but also for other hormone messages, like **thyroid** hormone and **leptin**. It's a little bit like taking your car to the gas station to fill up, and dumping gas (hormones) on the outside of the car (cell) rather than in the gas tank.

While insulin is considered our fat "storage" hormone, **leptin** is considered our fat "burning" hormone. Leptin is the hormone that your brain needs to receive to burn fat for energy, but once a cell membrane is inflamed, ALL hormone receptors become inflamed and "hard of hearing."

"Shouting louder," i.e. pumping in extra hormones through hormone therapy, etc., will not make them listen any better. It's a bit like yelling at your kids, and the result being that they listen less and less :)

If this scenario continues to be acted out in our bodies (which are doing their best job to manage this mess and keep us alive), we eventually end up with Diabetes Type 2, and/or Diabetes Type 3—Alzheimer's (which is basically the same cellular insulin resistance scenario, but happening in the brain cells specifically).

TOXINS {A RABBIT TRAIL}

How Toxins Play Into Diabetes

There is one more factor in cellular health that figures into the conversation about hormones, diabetes, and cellular receptivity—and that is **toxins**.

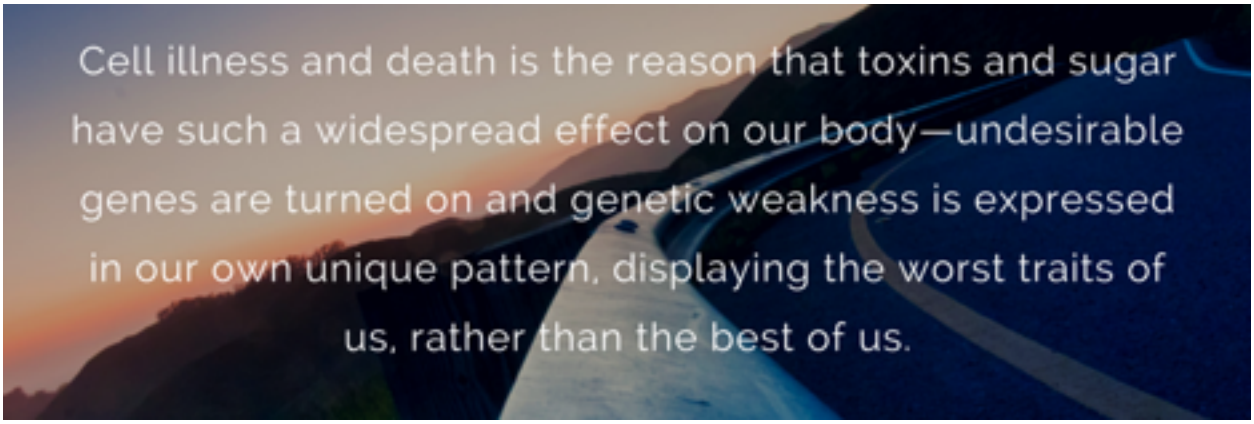
Just as excessive sugar (glucose) in the blood can inflame the cell membrane and receptors, so too, can toxins.

It's not a matter of ***if*** you have toxins, but ***how many***.

The GAPS Class covered many sources of toxins and how to best detoxify gently, but it's worth revisiting. Where do we get these toxins?

1. Glyphosate—probably one of the biggest offenders, as it is sprayed on almost all conventional, processed foods that are not 100% organic.
2. Personal care products—also one of the biggest offenders, as everything we are putting on ourselves, unless edible, has substances that our bodies see as foreign.
3. Toxins contained in vaccinations and other pharmaceutical drugs.
4. Mercury fillings.
5. Home toxins from poor construction.
6. Bromine (used in your computer plastic for example)
7. Poor quality fats (namely vegetable oils)
8. And more…

That is the short list of toxins we soak in, breathe in, and ingest every day. They assault our cells, attracted to the fats in the cell membrane. The immune system sees them as a threat, starts the inflammatory process, and the cell membrane is compromised, along with the cellular receptors. Insulin and other hormone messengers are kept out, similar to how they are kept out in the case of blood sugar imbalance.



BLOOD SUGAR SELF-ASSESSMENT

Now we'll return to blood sugar and simple self-assessment questions.

Blood Sugar Self-Assessment Questions

In this section, we'll talk about some of the indicators for determining if you have blood sugar dysregulation. They are questions to ask yourself, and they will give you an indication of whether you should be looking into better blood sugar management or not.

Rate these questions on a 0, 1, 2, or 3 scale.
0 = Symptom does not occur
1 = Yes, minor or mild symptom, rarely occurs (monthly)
2 = Moderate symptom, occurs occasionally (weekly)
3 = Severe symptom, occurs frequently (daily)

1 - Do you awaken a few hours after falling asleep and/or find it hard to get back to sleep?
This can be a classic symptom of low blood sugar. Our blood sugar begins to drop at night, especially around 1am. If it drops too low, as in the case of hypoglycemia, the adrenals fire and this can cause us to wake up.

2 - Do you crave sweets? (Pay attention, a craving doesn't have to be *super* intense, it can simply be: "I would like something sweet right now")
There are a lot of reasons you might crave sweets—blood sugar imbalances (like reactive hypoglycemia) for sure, but also an overgrowth of yeast in the GI tract, not enough digestive HCl and/or pancreatic enzymes, or hidden food allergies.

It takes at least several days for residual sugar to clear from the body, and it may take much longer for the cravings to end. The more sugar you consume, the more you will be addicted to it. Also, the more you consume it, the more B vitamins, Vitamin C, and minerals (especially magnesium) will be depleted in the body's management of the nutrient-devoid sugar. When the adrenals are forced to pump out cortisol to manage the sugar, other minerals are depleted as well.

3 - Do you experience uncontrolled eating, or food binges?
Just like #2, this can be associated with blood sugar dysregulation, but it can also be a sign that more HCl or pancreatic enzymes are needed, or that there are hidden food allergies.

4 - Do you have an excessive appetite?
Another sign of possible blood sugar dysregulation, but *also* can be a sign of yeast or bacteria overgrowth in the GI system, or even intestinal parasites. The overgrowth can be what is consuming the food, so the person has to eat more food to be able to digest and absorb a small amount of nutrients.

5 - Do you crave sugar or coffee in the afternoon?
6 - Are you sleepy in the afternoon?
7 - Do you experience fatigue that is made better by eating?
8 - Do you get a headache if meals are skipped or delayed?
9 - Do you tend to be easily irritated before meals?
10 - Do you get shaky if meals are delayed?

All of these questions deal with a tendency towards low blood sugar (hypoglycemia), which is a condition that involves the pancreas, the liver & the adrenals. As we've talked about above, the liver deals with short-term blood sugar control due to its store of glycogen and its ability to raise blood sugar when it begins to dip. The adrenal glands step in when there is more of a crisis of low blood sugar, using cortisol & stress hormones. Stress and blood sugar fluctuations happen so often in a

stressful modern person's life that the adrenals tend to compensate for a weak pancreas.

11 - Do you have family members with diabetes? (0 = none, 1 = 2 or less, 2 = 2–4, 3 = More than 4)
12 - Are you frequently thirsty?
13 - Do you urinate frequently?
These questions deal with symptoms that might indicate blood sugar levels are higher than normal, or even diabetic, especially if they are also joined with symptoms like loss of sensation in lower extremities, frequent infections, and skin itching.
Genetics can play a part in your risk factor for diabetes, but as you will find out in Module 3, you have much more control over this than you may think.

Optimal Glucose Levels For Pancreas Regeneration

From Dr. Natasha's FAQ:
"What do you think are optimal blood glucose values to promote pancreas regeneration in diabetes type one?

On an empty stomach around 4.4-6.1 mmol/L (in USA 82-110mg/dL).
After a meal around 7.8-7.9 mmol/L (in USA around 140 mg/dL).
Don't worry if the values are slightly different from these, just continue working on the diet.
People with diabetes type one need to go through the Intro Diet slowly and patiently. As your pancreas starts regenerating, it will start producing its own insulin, which will start bringing your blood sugar levels to normality. That is why, *when doing the GAPS Nutritional Protocol, it is vital to test your blood sugar level before every insulin injection; you must adjust the dose of insulin according to the level of your blood sugar in order not to overdose.* Every brand of injectable insulin has its own

complicated structure of dose-adjustment worked out by the manufacturer. Your nurse will have all of this information about your insulin and will be able to provide you with written instructions on how to adjust the dose. Children often come down in the dose of insulin (to the point of not needing it anymore) quite quickly, in a matter of few weeks. An adult who suffered with diabetes for many years will take longer."

STRATEGIES FOR BLOOD SUGAR & DIABETES

Here I outline some strategies for stabilizing blood sugar, reversing cellular damage, and undoing damage to the primary organs of blood sugar regulation—the pancreas, adrenals, and liver.

Dietary Strategies

Here are a few dietary strategies that fit within the GAPS template:

Dr. Natasha's Fat & Honey Mix: This mixture is meant to be taken wherever you go for a month or longer, so that you can eat 2–3 tablespoons every 15–30 minutes, or whenever you get a craving. This will help stabilize your blood sugar over time.

Recipe:

- 1 cup (226 grams) organic butter, ghee, or coconut oil (or a mixture)
- 1–2 tablespoons honey (just enough to sweeten)

Emphasis on Saturated Fats & Cholesterol: Our cell membranes are made of *saturated fats and cholesterol!* These restore our cellular membranes' structure so nutrients and hormonal messages can pass back and forth.

Juice Differently For Diabetes: For those with blood sugar issues, juicing on GAPS is started with green juices and lemon only, not the sweeter vegetables and fruits. Eventually you can drink Pink Power.

GAPS Blood Sugar Diet: Refer to Module 10 of the GAPS Class for information about a blood-sugar reset within the GAPS Protocol.

What's In	What's Out
Loads of veggies (including fermented ones)	All grains, even whole gluten-free grains
Avocados & tomatoes	Most fruit
Pastured meats (at least organic/free range)	Starchy vegetables such as:
Pastured eggs (at least organic/free range)	All types of potatoes
Healthy fats, including:	Cooked carrots and beets
Organic butter, coconut oil, extra virgin olive oil, beef tallow, lard, duck fat	Corn
Lots of water and herbal teas	Alcohol
Small amounts of beans (navy)	Dairy, except goat/sheep aged cheese/yogurt
Raw nuts, nut butters	Sugar in ALL its forms, including:
Raw seeds	Herbal sweeteners & honey
Coconut milk	
Berries and 1 apple a day	

For GAPS blood sugar diet recipes & menus, click this link:
Blood Sugar Menu & Recipe Ideas

Will GAPS Cure & Prevent Diabetes?

To quote Dr. Natasha Campbell-McBride:

"Yes! There are two forms of diabetes: type one and type two.
Type one is an auto immune disorder, where the body attacks and destroys the insulin-producing cells in the pancreas. All auto immunity is born in the gut. Following the GAPS Programme will heal the gut and re-structure the immune system.
In my experience, as the patient progresses through the treatment, he or she is able to slowly reduce the dose of insulin and in many cases to stop the injections altogether.
Type two diabetes is caused by the body becoming insulin resistant because of continuous consumption of processed carbohydrates. GAPS diet removes all processed carbohydrates, so the body can heal the damage and remove diabetes. Once better, as long as the person continues to stick to a low-carbohydrate nourishing diet for the rest of his or her life, the diabetes should never return."

Lifestyle Strategies

Sleep! Sleep!...and more sleep: Sleep is when many of our detoxification processes are happening. It also helps reset our hormones. Earlier sleep gets you more "bang for your buck" (i.e., 9pm–5am is worth more than 11pm–7am in "sleep dollars"). Experiment. When do you need to get up? 6am? Dial back your bedtime to a time when you are able to naturally wake up at 6am. Your body knows what it needs.

Detox practices: Review the other detoxification practices talked about in Module 8 of the GAPS Class. Click here —>> GAPS Class Module 8

Supplement Strategies

****Notes****

1. These are ***possible*** supplement strategies and should be discussed with your own physician. Monitor blood glucose levels as necessary.
2. To be taken alongside the GAPS version of the Blood Sugar Reset diet, mentioned above.
3. Drink 1/2 of your body weight in ounces every day, at least.
4. Supplements are by Biotics Research, but equivalents can generally be found in Standard Process supplements.

High Blood Sugar Suggested Protocol

1. **GlucoBalance** - 3 capsules, with 3 meals a day for a month, then 2 capsules, with each meal.
2. **BioMega-3** - 2 capsules, 3 times a day, or equivalent Omega-3 fish oil supplement. For more info click here.
3. **Betaine Plus-HP** (or other HCl supplement) increasing by one capsule per meal every third day until you feel a slight burning sensation in your stomach, then reduce to the next lowest level.
4. **Cytozyme-PAN** - 2 tablets, 3 times a day with meals.
5. **ADHS** - 2 - 4 tablets, in the morning and at noon. Herbal adrenal adaptogen.
6. **Lipoic Acid** - 2 capsules, 3 times a day.

Low Blood Sugar Suggested Protocol

1. **Bio-Glycozyme Forte** - 3 tablets, 3 times a day, 2 hours after meals (for example 10:00am, 2:00pm, & 8:00 pm). If stomach is upset when taking them on an empty stomach, then take with meals with HCl.
2. **Amino Acid Quick Sorb** - 10 - 15 drops between meals as needed for symptoms of low blood sugar. (Cravings, low energy, etc.)

3. **ADB5-Plus** - 2 tablets in morning, & 2 tablets at noon. If taken later in the day, it may induce sleeplessness. For extreme fatigue, take up to 1 per hour as soon as you get up, as many as 9.

STRATEGIES FOR ADRENAL HEALTH

We can't talk about blood sugar health without also talking about the adrenals, as managing your blood sugar will start you on your way to better adrenal health as well. They are VERY closely connected. Bonus? If you take care of your adrenals, they assist you in letting go of heavy metals!

The 3 Stages of Adrenal Fatigue

First Stage: Hyper (gland overcompensates)
Second Stage: "Ping-Pong" (gland is sputtering between hypo and hyper. It is recovering and crashing, recovering and crashing.)
Third Stage: Hypo (gland is exhausted)

Give them lots of time. Adrenals take a while to recover, and its important to be kind to yourself (i.e. your adrenals). Adrenal health has long lasting implications. For example, there is a connection between the condition of the adrenal glands and how poorly one goes through menopause.

In addition to blood sugar management, here are some dietary, lifestyle and supplement strategies specifically for adrenals:

Dietary Strategies

As Dr. NCM says, adrenals love fat and cholesterol. Aim to feed them with one or more of these foods, every meal:

1. Egg yolks
2. Sour cream
3. Butter (or other animal fat)
4. Fatty fish

They like good quality salt too :)

Lifestyle Strategies

I'm going to repeat this, because its that important:

Sleep! Sleep!...and more sleep: We averaged 1 - 1.5 hours more sleep per night, about 50 years ago. That's a solid month of sleep per year, that we aren't getting! Again, earlier sleep gets you more "bang for your buck" (i.e., 9pm–5am is worth more than 11pm–7am in "sleep dollars").

Reduce your st@#ss: Practice the fine art of saying "no", to all but that which is meaningful to you and your family, and even then...cut something out. You are only doing the world a favor by being happier and living your "own" life and not someone else's version.

Supplement Strategies

Some of these supplements will overlap with the blood sugar supplements, as they are closely related.

****NOTE**** These supplements give a starting point. If adrenal or endocrine function is acutely dysfunctional, further supplemental strategies may be needed.

Currently, my favorite all around Adrenal Adaptogen product is called **Adaptocrine** by Apex...it helps to balance the adrenals when both over-functioning or under-functioning.

Adrenal Hyper-Function, "Overdrive" Strategies

1. **ADHS** - 2 - 3 tablets twice a day in the morning and at noon.
2. **Cytozyme PT/HTP** - 2 - 4 tablets twice a day in the morning and at noon. (Pituitary and Hypothalamus gland)
3. **GlucoBalance** - 2 - 3 capsules, 3 times a day
4. **Optimal EFAS** - 2 capsules, 3 times a day with meals. Similar to BioMega-3 except it has a broader range of fatty acids.
5. **De-Stress** - 1 - 2 capsules during the day and 1 - 2 capsules at bedtime. *A mindfulness practice, homeopathic regimen, or essential oil regimen could replace this.*

Adrenal Hypo-Function, "On The Floor" Strategies

1. **Cytozyme-AD** - 2 - 3 tablets, 3 times a day with meals **or ADB5-Plus** if adrenal hypofunction is significant (2 tablets in morning, 2 at noon)
2. **Bio-Glycozyme Forte** - 2 tablets, 3 times a day with meals and HCl
3. **Celtic Sea Salt** - 1 teaspoon per day (salt put on food and in lemon water can be counted towards this)
4. **Bio-3B-G** - 3 tablets, 3 times a day between meals.
5. **21st Century Homeopathic For Chronic Stress** - 1 capful, 4 times a day for 2 weeks, then reduce to 1 capful twice a day.

WHAT'S NEXT?

In Module 2, we will be covering the topic of lab tests - recommended lab tests, when to test, as well as GAPS friendly strategies and recommendations. I'll talk to you then!