Acupuncture & Natural Health Solutions

Functional Medicine Summer Series #8

Comprehensive Metabolic Panel
Glucose and HbA1C

To the architects of your own health,

Welcome back to the summer functional medicine series, all about the basic blood labs. Today, we are continuing our exploration of the Comprehensive Metabolic Panel - 14, specifically the blood glucose and hemoglobin A1C biomarkers. My guess is, of all the values in the basic labs, you are very familiar with glucose and A1C.

Unfortunately, recent data indicate a significant rise in type 2 diabetes in the United States. Here's a summary of the latest statistics:

- A study from the University of Georgia found that type 2 diabetes increased by almost 20% between 2012 and 2022. (sciencedaily.com and uga.edu)

- As of 2021, 38.4 million Americans, or 11.6% of the population, had diabetes. Of these, 29.7 million were diagnosed, and 8.7 million were undiagnosed. (cdc.gov and diabetes.org)

- Approximately 90% to 95% of all diabetes cases in the U.S. are type 2. (singlecare.com)

- In 2021, 1.2 million new cases of diabetes were diagnosed in U.S. adults. (cdc.gov and medicalnewstoday.com)

- The number of Americans with diabetes is projected to increase to over 54.9 million by 2030. This will also lead to a substantial increase in medical and societal costs related to the disease. (nih.gov)

These statistics are bleak and show us that the standard American lifestyle is making us sicker and sicker. Our sick model of medicine isn't helping, either. The good news is, practicing a healthy lifestyle will help prevent you from becoming one of these statistics.

If you have no idea where to start, I highly recommend the book, Good Energy: The Surprising Connection between Metabolism and Limitless Health by Dr. Casey Means. As of the writing of this rough draft, amazon.com had this book on sale. This is a great read, and I highly recommend following Dr. Means' guidelines.

Now, let's get to today's business at hand: the blood sugar biomarkers. We will look at two values, the fasting blood glucose level and the hemoglobin A1C value. The fasting blood glucose biomarker is a measure of the available glucose, or sugar, in the blood. Unstable glucose levels, whether high or low, are ***the number one contributor to overall hormonal imbalances***.

Measuring blood glucose levels after fasting for 12 hours, can help detect abnormalities in blood sugar regulation, such as hyperglycemia (high blood glucose levels) and hypoglycemia (low blood glucose levels). Glucose, a simple sugar, is not bad, it is vital. Glucose plays a crucial role in providing energy to our cells, especially the brain and muscle cells. Glucose can be immediately used or stored as glycogen for later use.

It is when blood glucose levels remain elevated, that leads to damaging effects on proteins, cells, tissues, and blood vessels of the body, ultimately resulting in chronic diseases like type 2 diabetes, heart disease, and kidney failure. This is why it is so important to address high blood glucose levels early on by making healthy lifestyle and nutritional changes.

The standard lab glucose range is 65-99 mg/dL. The optimal fasting glucose range is 75-86 mg/dL.

Now let's talk about hemoglobin A1C (HbA1C) levels. This biomarker is mainly used as an indicator of what the average blood sugar level has been over the past three months. In actuality, this biomarker tells us how many red blood cells have died over the past three months. Why do red blood cells die? One of the main reasons is oxidative stress that comes from having too much glucose in the blood stream. This is why the HbA1C is considered a diabetes marker.

Low HbA1C levels may indicate chronic hypoglycemia or other issues, while high levels are more common and are associated with diabetes, heart disease risk, and other conditions. The HbA1C test is used to diagnose pre-diabetes and diabetes, monitor blood glucose control, and evaluate treatment efficacy. Maintaining a lower HbA1C can help reduce the risk of blood glucose dysregulation. Evaluating HbA1C along with other glucose regulation biomarkers can provide a clearer clinical picture of diabetes risk and control, as well as overall cardiovascular risk.

The standard lab HbA1C range is 0 - 5.7%

The optimal HbA1C range is 4.8 - 5.6%. Anything over 6.5 is considered diabetic.

- Elevated blood glucose and HbA1C levels are indicative of metabolic disturbances. Such elevations are not only linked to diabetes but also to other cardiometabolic risk factors, including excess fat around the organs, metabolic syndrome, high blood pressure, cholesterol issues, and heart disease.

If you consistently have blood glucose and hemoglobin A1C levels out of range, we need to ask questions to see what is going on. Is blood sugar low because you are not eating enough? Are there other hormone imbalances? Is there adrenal fatigue? Is the blood sugar too high because you are eating fast food and convenience foods on a regular basis? Is the liver congested? Are all the trace minerals vanadium and chromium present that help the glucose to get into the cell? Are you eating enough good quality, healthy fats? Are you sick and inflamed? Are you stressed to the max?

When there is not enough glucose in the blood, hypoglycemia, your adrenal glands are stimulated to produce cortisol, which causes blood sugar to be dumped into the bloodstream, so the glucose levels can rise. When cortisol is stimulated, your

body thinks that you are in a fight or flight situation. This process happening over and over, day after day, leads to adrenal fatigue and potentially results in a lot of anxiety.

Intermittent fasting is all the rage right now. It can be great for some people. However, intermittent fasting every day really is not intermittent. If you have adrenal fatigue, intermittent fasting will likely make your adrenal fatigue worse.

One of the best ways to stabilize glucose levels is to supplement with high-quality nutritional shakes in between meals. Nutritional Frontiers has the Ultimate Shake which is full the macronutrients, the micronutrients, chelated minerals, protein, carbohydrates, fat, vitamins,

and nutrients to support phase 1 and 2 detoxification support. If the liver is congested, it can lead to blood sugar issues. This shake also supports liver function.

Pairing the **Ultimate shake** with the **Pro lean Greens** is a really great combination for blood sugar support. The Pro lean Greens help those who find it difficult to get 5-7 servings of fruits and vegetables per day. The Pro lean Greens have fiber, probiotics, digestive enzymes, an energy blend, a detoxification blend and a combination of to help with blood alkalinity.

If you have unstable blood sugar, it is important to eat something every 4-5 hours to prevent the cortisol (stress hormone) from rising. Using shakes in between meals, instead of as a meal replacement, will keep nutrition in the system throughout the day.

If you need even more blood sugar support, Nutritional Frontiers has a product called **GlucoLyze**. It contains cinnamon and trace minerals that support healthy cellular integrity, so the glucose can attach to the cell receptor sites and actually be used by the cells. GlucoLyze also helps balance insulin levels as well.

Taking **Berberine+** at bedtime helps with digestion and parasitic activity and also stabilizes blood sugar throughout the night. Berberine is especially beneficial for those who wake up in the morning with blood sugar levels above 100.

- It is important to realize that continuous blood sugar fluctuations lead to adrenal fatigue. The breakdown of the very important adrenal system is what leads to all chronic illnesses. It is of vital importance that you are able to switch out of the stress fight or flight system, into the parasympathetic system, so your body can rest, recover and heal. If you have adrenal fatigue, it is almost impossible to get into that parasympathetic healing state.

- If you are doing all the good things for yourself, but are still struggling with blood sugar issues, I recommend taking an at home salivary test to see how your adrenal health is doing. I do a lot of work in this area and can assist you with this process. Just reach out. Healing blood sugar issues takes a whole-body approach.

- Thank you for tuning in this week. Next time we will discuss the BUN aka urea, creatinine and eGFR biomarkers on the CMP-14. I hope to see you there!

Want more natural health insights? Listen to my podcast where I discuss lesser-known approaches to chronic health issues. Listen Now

Supporting your health journey,

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