Lesson #6 – Biomarkers and Their Associated Dysfunctions

In yesterday's lesson I covered the ***FBCA Thinking Process***, which is a way you can think about each and every biomarker on a blood test. In today's lesson I'm going to talk about and review my "***Biomarkers and Their Associated Dysfunctions***" guide.

This guide, and the accompanying short video, are going to help you start making connections between individual biomarkers and their associated dysfunctions. Once you become fluent with this, your review of clinical findings appointment is going to be really, really good.

If you remember back to lesson 3, I talked about suggested biomarkers to have on your panels. I talked about glucose, BUN, etc. and in that video discussed some of the dysfunctions they are associated with. This lesson is an expansion on that and, with the help of my handout, you will have a valuable tool to use in the clinic. You'll also become very conversant with the dysfunctions that are associated with increased or decreased optimal levels of a particular biomarker.

There are very few biomarkers on a blood test that are truly diagnostic all on their own. It's really important to see the trends and patterns that exist between various biomarkers. So my "***Biomarkers and Their Associated Dysfunctions***" guide is organized to provide the information by listing the individual components of blood chemistry screens and complete blood counts and then looking at what conditions they are associated with.

I'm not going to go through the whole guide because that's what the guide is for but I am going to touch on some important pieces here.

When glucose is elevated we need to start thinking about blood sugar dysregulation. It's important to remember that blood sugar dysregulation happens on a spectrum. We have metabolic syndrome, which is probably one of the most important dysfunctions of blood sugar regulation. At the same time, the early stage of hyperglycemia is very tied in with metabolic syndrome. We also have to consider insulin resistance and hyperinsulinemia. Elevated blood glucose can also be a sign of thiamine need as well as a sign of fatty liver, liver congestion and cortisol resistance. Low levels of blood glucose are associated with reactive hyperglycemia, liver glycogen issues, and adrenal hypofunction, all of which can cause glucose levels to be decreased.

Hemoglobin A1C is very much associated with diabetes and insulin resistance and, when it's low, hypoglycemia. High triglycerides are associated with many different conditions including, but not limited to, metabolic syndrome, fatty liver, liver congestion, insulin resistance, cardiovascular disease, arthrosclerosis, poor metabolism and utilization of fats, early stage diabetes, hyperlipidemia, hyperlipoproteinemia, and hypothyroidism.

The connection between triglycerides and hypothyroidism is an interesting one. Any type of hypothyroidism (primary, secondary, low T3 syndrome, T4 conversion issues, etc.) can cause the triglycerides, and total cholesterol, to rise. The thyroid regulates metabolism in the body and controls how much metabolic energy is produced. So when you decrease the amount of metabolic energy we have a difficult time processing blood fats, cholesterol and triglycerides specifically, and their levels start to rise.

Low triglycerides are associated with liver biliary dysfunction, thyroid hyperfunction and adrenal hyperfunction. I also look at low triglycerides along with low cholesterol and elevated HDL, as a hallmark sign for potential autoimmune processes. It's one of those red lightbulb things that goes off in my head when I see this pattern

An elevated BUN is associated with renal disease, renal insufficiency, dehydration, hypochlorhydria, a diet that has excessive protein intake, adrenal hyperfunction, dysbiosis, and anterior pituitary dysfunction. I covered BUN at length in my lesson on the ***FBCA Thinking Process***.

A low BUN is associated with diets that are low in protein, malabsorption, pancreatic insufficiency, and liver dysfunction.

So, you don't necessarily need me to go through this whole guide with you because you can go ahead and download it for yourself! But one of the things that I would suggest is to make some flashcards on this information and test yourself so you can really learn this information. For instance, if I were to ask you what dysfunctions are associated with potassium levels above the optimal, you should be able to say "Adrenal hyperfunction, dehydration, tissue destruction, and metabolic acidosis". So when you're sitting down with the patient and you transpose the results onto a tracking form and start looking at all the up and down arrows you will quickly be able to put all this together in terms of creating patterns.

I hope you have found this helpful and can apply this information to all the blood tests you review with your patients. Please go ahead and download the "***Biomarkers and Their Associated Dysfunctions***" handout below. It's a very valuable resource and it's yours for free! In our next lesson I'm going to show you how I approach the Functional Analysis of each and every blood test that I review. I am also going to share with you my "***FBCA Tracking Form***". This is not to be missed!

Until next time,

All the best,
Dicken

Dicken Weatherby
Founder, Blood Chem Software