Blood Chemistry Intro: Introduction

Transcript

Hello and welcome to our blood chemistry module. I'm so excited to be here to share what I think is such an exciting part of our work as clinicians, as practitioners, as health coaches, as people who help others to get to the root cause of what's going on. The blood reveals so much stuff that most medical professionals have no clue what it reveals. The typical way of looking at a standard blood chemistry that these doctors do every year on people is to just look at it and if the lab has flagged anything as out of range then they say, oh, there's a problem here. Sometimes they say, it's just a little out of range, don't worry about it.

When we look at a blood chemistry, we see a treasure trove of information that tells us about their digestion, their heart, their liver, their kidneys, their nutrients, their ability to absorb nutrients, and so much more. Today I'm going to share that with you. This is our foundational blood chemistry. A later module will be the advanced blood chemistry. This is mostly the stuff that's on a standard blood screen with a few additions of my own that I think are not optional that you really need to be doing. Then in the advanced module we'll go deeper into some of the specialized tests. Some of them I'm introducing to you here as well.

I'm excited to be able to share all of this with you in a way that's easy and fun and interactive and where you can get the most out of the education. Before we begin, and I'll do this before each section of this module, I want to make sure this isn't meant to replace a one-on-one relationship with the doctor. When you are working with a client and you are helping to explain this, it's education. You say to them, I want to educate you about what's going on in your blood and then we can look to see what obstacles are being shown to us, what imbalances are being shown to us, and maybe create a nutrition lifestyle plan that helps to restore those balances.

If you've got any pathologies, you've got to work with a medical professional on this, and you need to be able to explain to people, and you might even want to have something in writing that says that because this is the area that is gray and people say, well, you read my labs and you told me and you diagnosed me. You're not diagnosing and you're not giving them a treatment plan. You're simply educating them.

When I first started in practice, one of my first few years in practice, I remember having my patients come in and I'd be adjusting them and we'd be talking about various things and they

got to realize how much I knew about the blood chemistry and how much I knew about nutrition and they wanted to move it from their focus on their musculoskeletal stuff into that.

Some of them would call me. I had this happen a few times. They'd call me and say, I just went to the doctor. I got this lab back. The doctor took three minutes to explain it to me. I have no idea what this means. Can you help me? Can you help me read this? I said, sure. I would have a consultation that was simply teaching them what the treasure trove of information that their blood was sharing with them. That's what I'm going to share with you today.

Know that it's going to take some time for you to really get this. It's going to take some time for you to be able to own it the way I own it. It took me many years of repeat, repeat, repeat, hundreds even thousands of chemistries. Probably dozens are going to get you to the point of really feeling good with it and we're going to go through a lot of that on our calls. Let's just jump in and begin. Let's start with what we're going to cover in this entire module.

This module is broken down into pieces. It's something like 15 different core components with 15 different videos and tools because we wanted it to be each one you could go back to it at any point in time. If you want to review the kidney stuff, you can go back to the kidney video. If you wanted to review anemia or infectious indicators, you could go back to just that, so they'll each be separate so you can go back and review at your leisure and you don't have to be scrolling through this 8-hour video or even 2-hour video to try to figure it out.

We're going to start with an introduction to blood testing. That's this piece. That's this video here. What it is and what it isn't. What you can find in it and what you really can't find out in it. We're going to talk about secrets to finding nutritional pearls in these blood chemistry analysis most doctors miss. Even some of my functional medicine doctors miss this stuff and a lot of times I'm explaining to them how to do it. There's an art to it. There's very specific stuff that you can find in here. We're going to talk about normal ranges versus functional ideal ranges. I'm going to debunk the myth about if your lab tests look normal, you're fine. We're going to talk about pathology versus functionality and how we want to strive towards keeping people in optimal function rather than just the absence of disease.

What's included in a routine blood chemistry screen and I'll tell you which of these is not, but it varies from lab to lab, I will tell you. It varies from country to country. I see our friends in Canada are much more stingy with their routine blood screens and a lot of things that I think should be included are not. We'll talk about that. We'll talk about the lab results tracking sheet that I've done, which is an amazing way to look at it. We're going to go through all the different parts of the blood chemistry, and they are divided into parts, but we're also going to talk about how they overlap and how they intersect and how we have to look at multiple things in ratio to each other to get the true picture, not just this is high, it means this. No. This this is high in conjunction with this being high, with this being low, and it gives us a picture.

What we're going to cover in addition to the complete blood count, we're going to look at, well, the complete blood count from the standpoint of what it's telling about the immune system and what's it telling us about anemia. Two different pieces. We're going to talk about electrolytes.

We're going to talk about minerals, so that's different. Some of the minerals that we might call minerals are actually more considered electrolytes. We'll differentiate between that. We're going to talk about how you can get vitamins out of a regular blood chemistry without having to actually test the vitamins per se, and there are ways we can do that and we will go through that in our more advanced lab testing.

We're going to look at blood sugar. We're going to talk about how all the markers for blood sugar, the basic ones and I did go into detail about the more advanced ones just because I really feel like this is something you need to know about and it's so overlooked and diabetes is so mismanaged and misdiagnosed. Like I said, you can't diagnose a diabetes, you can't diagnose things from this, but you can certainly find things that are red flags because when we look at the blood sugar, you'll see how a lot of type 2 diabetes is not type 2 diabetes. It's misdiagnosed, and I'm going to teach you how to differentiate late onset type 1 type autoimmune diabetes.

We're going to look at thyroid and this is an area where I'm teaching you the extras because the basics just don't cut it, just don't give us a complete picture about thyroid. We're going to look at some markers for digestion, right here in the blood chemistry, kidney markers, there's a whole section on kidney. There's a whole section on liver, and then lipids and cardiovascular.

We're also going to look at some tools you have and things that you can use to help you with moving forward with this, actually implementing it. It's going to take practice and I highly recommend that you line up some friends, some family members, even some clients, if you're not used to doing this that you can do this with. If you can do it as part of a paid program, nice, but if you can't, just offer to read people's labs. They pay for their labs, you read them, and that's going to give you the practice that you need. Then bring those to our coaching calls so that you can get everything that you need to understand these things. Like I said, it takes practice, practice, practice, practice, and seeing me analyze them over and over and then doing it yourself.

We're going to look at a computerized blood chemistry analysis software and we're going to do some case studies. Why do we want to do blood chemistry analysis? We're trying to get a window into the biochemical functioning of this person. How is the biochemistry going wrong? We're not interested in applying a diagnosis and then applying a protocol. That's allopathic medicine even if the tools you use are nutrition, diet, lifestyle, supplements, herbs, acupuncture, energy medicine. If you're going through the model of this is the symptom, this is the disease, this is the treatment, that's an allopathic model. I want to take you beyond that.

I want to take you into looking at functionality and removing the road blocks, so when we do the blood testing, we know that it's a window at a particular point in time of what's going on for that person.

We know that it varies based on times of day, based on what person's eating, and it can change quickly. That's the beauty of it. We can run some tests. We can apply some

therapeutic interventions and then we can go back four to six to eight weeks later and see change. It's not a way to diagnose anything except for over pathological disease, and some of that will show up. That's not what we're interested in. We're interested in looking at what's functionally going off and also, as we look through some of the ways of tracking this, we're looking at trends.

If a person's got perfectly normal blood chemistry and their liver enzymes are perfectly normal, but every year you see them creeping up a little bit or you see a level of a nutrient or something important creeping down a little bit and it's consistent. It's not just one year it's up, one year it's down, next year it's up. That's more of a up and down variation, no big deal. When you see a pattern, that's the time when you're going to start to look at what can we do to support this person's liver, this person's kidneys, this person's thyroid because they're heading in the wrong direction and that's what I want for you. I want you to be able to help these people maintain ideal health, not just absence of disease.

We're going to look at lab ranges versus functional ideal ranges. The lab ranges are what the labs come up with and they find the mean and then they find two standard deviations off the mean. Depending on their population, that's going to determine what those ranges are. You'll notice that a lot of times you'll look at labs, I may have a lab from here in my home town and you have a lab from your home town and your patient has one from their home town, and the ranges are actually slightly different. That's because that was calculated based on the norm of that population. That doesn't mean healthy.

I don't know about you, but I don't want to be normal. I don't want to be average. I want to be normal, but I don't want to be average because average is sick in our current society. That's not what we want for our patients and clients either. We want them to be ideal. Those ranges are really wide and the functional ranges usually are more narrow because those have been taken from populations of healthy people. Is there truly a population of ideally healthy people? Yeah, sometimes, but it's still a best guess. Still those ranges might be slightly off, but we're looking to get people in the optimal range versus outside the optimal range.

When we look at this, we're looking at the narrower optimal range, the wider normal range considered pathologic range and outside of that is pathology. Do we want to wait to say somebody has a problem till it's in the pathological way, pathological range, or do we want to catch it when it's outside the optimal? I don't know about you, but I want to do it when it's just outside the optimal or even heading towards being outside the optimal. We're going to look at how to find those nutritional pearls hidden in this blood chemistry that most doctors do miss.

Routine chemistry, how often should you run it? I think once a year would be really, really nice, but sometimes you have to run it more often. If you're working with somebody who has a lot of imbalances or who's working on a particular condition that's been there a long time, you can run it every three, six months. Generally, the whole routine blood chemistry screen once a year. Very good to do. If you're not licensed, how do you run them? If you're in the US, you know to go to directlabs.com, and we have a list of them. There are others. There's Any Lab Can, there's Accesa Labs, and I have a list of those for you. If you're outside of the US, I don't

know, and there's supposedly one place that is in Alaska that has some ability to do it for people in Canada, and we'll get you access to that, too.

In addition to all this, in places like Europe or Canada where you don't have access to a Direct Labs, then you need to find a doctor that's willing to run them. I find that people tend to go to Naturopaps and get them run, not covered by the healthcare insurance, but at least they can get them run and Naturopaps might be able to do it. Some Naturopaps might feel threatened, though, if you're sending people there just to get their labs run, so it's just a little bit challenging. Best is to work with the doctor, and I know some of you do that. That you actually go and meet with the person with their doctor, talk to their doctor on the phone, explain to them why you want the tests. Some will, some won't.

Some people who live on the border of Canada and the US will drop down into the US to get their labs done. How much does it cost? If you go to a regular medical clinic and order this complete panel, they usually charge 3, 4, $500, mainly because they're getting insurance coverage and the insurance will knock it down a bit, but if you have insurance coverage and you have to pay your co-pay, you would have to pay or your clients would have to pay that 20, 30, 40% of what it costs, so that 20, 30, or 40% of a $500 lab would be around $100. You can go to Direct Labs or Life Extensions or some of these other places in the US and you can actually do the tests for about $100. The extras that I'm going to teach you to add will cost a little bit more, but it's way less than doing it and sometimes it's less for the person to go to the Direct Labs or a Life Extensions to get these done because that's cheaper than doing their co-pay.

What's usually included? That's what we're going to go through today. The interpretation, that's what we're going to go through in all of these sections of the module. Here's some of the places you can get them done: directlabs.com, personalabs.com, directaccesslab.com, Life Extensions, and then there's also places, there's another place that's in some cities, and I think it's Any Lab Test Now, and we'll make sure we get those put onto your site as far as if there's others. If you know of any others or if you're in Canada or Europe or anything like that and you know of ways to get these tests done, by all means, share them with us so that we can share them with the group.

How do you go deeper with this and learn more? There's the conventional interpretation books, and this is just going to give you the pathology of what these various tests mean and a little bit about the chemistry and the history and the pathophysiology. A Manual of Laboratory and Diagnostic Tests, Fischbach, and then Clinical Laboratory Medicine Interpretations, that's Ravel. These are the two books that I have on my shelf, which are at this point, 23 years old or more because I got them while I was in school so they're probably 25 years old. Tried and true, there's lots of information, but know that mine are probably outdated since there are new tests that have been created and new interpretations that happen all the time. These are good books. Have one of these books on your shelf just so that you have a conventional medical interpretation book so you get what the doctors are thinking when they find these things abnormal.

Then we have some functional interpretation books, and I have these on my shelf as well. Blood Chemistry and CBC Analysis by Dicken Weatherby and Scott Ferguson. I have that book and it's wonderful and you can just go to any of the parameters and it gives you a summary of the pathological ranges, the functional ranges, what the low means, what the high means, and then some nutritional things you can do. It's a great review of the stuff we're going to go through here in this module and then it can even take it deeper. That's good. That's mostly the main labs. They don't have a lot of the esoteric and more in-depth and specialized ones, but it's great for the standard blood chemistry and CBC.

This other one, Encyclopedia of Nutritional Interpretation of Blood Tests by Dr. Michael Wald, he's an M.D., D.C. and he's written this book and his isn't as beautifully organized as the Dicken Weatherby book, but it has more lab tests and it's got a lot of good information, too. I just refer to both of them when I'm in a position where I want to go deeper with a particular lab test or look up something new and exciting. Good to have them on your shelf.

There's also computerized functional interpretation software. Number one, there's my spreadsheet, which is part of your master health tracker and it's part of this module. Later on we're going to go through and I'm going to share how to use that. I love it because you can put in your numbers and they immediately change. You can see your columns directly of labs next each other, and I also have a little cheat sheet off to the right side that says, if this is low, take a look at these other things or this might be high and it gives you some idea of what to do.

The Blood Detective is a very expensive software. I do have it. I purchased it many years ago. I've used it, but I didn't really like it. They're supposed to have made a new version of it that's more user friendly. It was written in some archaic software that was really hard to use and I really need to contact them and find out if they've updated it and can I get the new one because I never did. I purchased it like five years ago, six years ago. It's got a few things that the other software doesn't have in terms of you can put plans in there and you can customize it, but I found it very kludge and I didn't end up doing it.

It took like a half an hour to do each one and then to do the reports, you couldn't just say, here, report. You had to print each report individually, so it's hard to say at this point and it's expensive. It's $5,000.

NOTE: Optimal DX pricing has changed since this session was recorded and the group account is no longer available as of 2021.

The blood chemistry software that I use now is through Dicken Weatherby and his group. It can run anywhere from $65 to $150 a month. I think $65 is the low end and it allows you to just put all your patients in and I think at the 65 you have some number of limits like 100 in the month and the $150 level is unlimited. I personally have the unlimited, but I pay the $65 because I signed up immediately when he released it. This is something that as an NEPT practitioner you have free access to while you're a practitioner until you become certified and

then if you want to continue with it, you work with the company and work out an arrangement to do it yourself. By then, hopefully, you've got a big number of people you're working with and you can do it. Now if you're in a shared practice, you can share it with all the practitioners in your practice and there's ways to do that as well.

You guys actually have your own log-ins and if you go to this bloodchemsoftware.com and you put in your user ID and password from NEPT, you will get access to that and it's your own. You can put your own patients in. This is way above and beyond what we were talking to him about doing for us. We were asking him to set it up so that you could share mine, but just weren't able to get into my records, so have it separately. He actually gave us all an individual one. We thought you were going to get one account and all of you would share it and they set this up, so it's brilliant. We're so thrilled with that. It's a wonderful benefit. It's a learning tool in addition, and I'm going to give you a tour of that software later on in this module.

What's usually included in what's called the routine blood chemistry? Well, you've got the CBC, which is complete blood count, and that's where we're looking at white blood cells and red blood cells. The thyroid with TSH, and the panel usually is some routines are just TSH and they do it where if the TSH is abnormal, meaning it's outside of what they consider the normal range, which is very wide and in some labs it's up to 5.5. As you'll see later, that's not a good functional range. If that's abnormal, then they'll run a T4. Rarely do they run a T3, and in fact, I've asked some of my patients to have their doctors order the free T3 test and I had one of them say to her patient, she said, I don't even know what that is. I can't run that because I don't even know what it is. I just about fell on the floor and I said, you need a new doctor because if this is the doctor that's prescribing your thyroid medication and they don't know what free T3 is and how to test for it and what it does, you need to find somebody.

There's also the lipid profile, which does the cholesterol, triglycerides, LDLs, HDLs. There's a liver profile, which looks at liver enzymes, we'll look at what's in that. The kidney panel, which looks at things like blood urea, nitrogen, and creatinine, and then other kidney markers.

There's iron, and usually unfortunately, they just do iron, but more and more of them are starting to do ferritin, which is the stored form of iron instead of just the iron, and we'll go into a lot of detail in the anemia section. Glucose and then fluids, electrolytes, and minerals. Those are the sections that are usually included. Iron I don't see on the Canadian ones for some reason and some of the don't even do iron or ferritin, which I think is kind of ludicrous, especially when we're dealing with pre-menopausal women who are losing blood every month, but that's just something that I've noticed.

Some of what I think are the non-optional extras: vitamin D, D3 is usually what we run, vitamin D 25-hydroxy. There's also a 125-hydroxy, which we don't usually run. It's a much more expensive test unless there's certain implications and we're not seeing results by supplementation with vitamin D. There's the thyroid peroxidase antibodies or thyroid antibodies panel. For some, if they're really trying to save money, you can save $40 or $50 bucks if they just do the TPO, but TPO, thyroid peroxidase antibody is actually elevated in

about 80% of people with autoimmune thyroid. What it means is a second trip to the lab if you're expecting that they have antibodies and they're not, so in about 20% of those cases, you're going to send them back to the lab.

I explain that to people. I said, you can spend the extra money up front, and usually if you get the panel it's about $30 more if you get the thyroid antibody panel. You can do both of them together or we can do the thyroid peroxidase if you have autoimmune, it's an 80% chance that that's going to be elevated, but if it's not, we're going to have to do antithyroglobulin antibodies, which is the second one in the panel which we'll look at. That's the way I explain it to people, so it's usually people will run the whole panel.

Then there's iron and ferritin. Iron is oftentimes in there, but if it's not, I want to see it but I also want to see the ferritin. When we look at anemia, we'll look at some of the others, so if you see abnormalities, you can follow up with some of the other more detailed markers. I think hemoglobin A1C in anybody who's experiencing the brain fog, the belly fat, and the fatigue, we suspect blood sugar. The glucose is not going to tell us until it's too far gone for us to know, so hemoglobin A1C is good. You don't need to do the hemoglobin A1c if you got somebody who's willing to prick their finger and do the testing, but hemoglobin A1c is often a good ammunition that we can give people. When we look at it, I'll explain to you how you can use it to calculate the average blood glucose.

Then free T3 I think is a must because free T3 will tell us really what the thyroid cells are seeing. T4 tells us what the thyroid is producing, and I like to see that and it's usually included in the standard thyroid panel, but not necessarily. The free T3 tells us what are the cells seeing and we need to know that. When we look at the thyroid we'll go through more detail on that. These are the non-optional extras that I think.

Then there's some specialties that I don't do on everybody, but I'll do them on people when there's an indication. C-reactive protein is an inflammatory marker, I'll do that when I suspect somebody has inflammation or they're complaining about joint pain or possibly Crohn's or ulcerative colitis. I'll also look at homocysteine, which is one of the intermediates in the pathways, the methylation pathway and homocysteine is a risk factor for heart disease, but also gives us a little information about how the methylation pathways are working.

The sed rate, sedimentation rate, erythrocyte sedimentation rate is the ESR that's what the full name is but most people don't call it that, they call it the sedimentation rate or the sed rate, so that's why I put it down that way. You might also see it as ESR. Fasting insulin is an amazing thing to be studying because when we're looking at somebody with the possibility of blood sugar imbalance, the fasting insulin being out of range tells us a lot and we'll go through the details about that when we do the blood glucose section.

The DHEA, that's a nice thing to do if you suspect someone has a lot of adrenal stress and they're complaining about low estrogen-type symptoms or estrogen-progesterone imbalance type symptoms. It's a less expensive way than running a whole panel. I'm not a big fan of running things like estrogen, testosterone, progesterone in the blood test just because they're

expensive to run the free versions, meaning the unbound versions, and running the bound versions doesn't always give us the proper approach. Like testosterone, that's protein-bound is not accessible to the tissues unless the body is efficient at taking it off and sometimes they're not, so I tend to not do estrogen, progesterone, testosterone in the blood. I tend more towards doing them in urine or in saliva.

PSA, which is prostate-specific antigen and that's what you do if you're working with an older gentleman who is explaining that he's having urinary dribbling or urgency, etc., you want todo that and it's a kind of a sort of a marker for cancer, not necessarily. You can get false positives and you can get false negatives, but it's there because it's a specialty test. There's a lot of other specialty tests and we'll go through more of the specialty tests in the advanced blood chemistry.

There's so much here with the basics, I want to stick to the basics so I don't overwhelm your sensibilities here. This is a functional diagnostic hierarchy. This is the way it's explained in the Dr. Dicken Weatherby and I kind of like it. It's like looking at things in order. Digestion, gall bladder, detox, liver, kidney, large intestine, then the minerals, vitamins, EFAs, the blood sugar and oxidative stress, kidney and bladder, adrenal thyroid, sex hormones, cardiovascular inflammation and immune system. In the blood chemistry software, you're going to see analyses of these sections and it's a really cool way to see what stresses might be in these particular areas.

This is a glimpse of our lab results tracking sheet that's part of the master health tracker and we're going to go through that in detail in another section.

This is what a report might look like when you get it back from LabCorp. We've arranged our master health tracker spreadsheet in the order that it comes from LabCorp. That's just to make it easier because when people go through Direct Labs, it comes from LabCorp, so we figured since a lot of our people are using Direct Labs we'd do it that way.

We've also set it up in our blood chemistry software to have it in that order, so when you're data entering, you can just be going down and make it real easy. In the blood chemistry software, you're going to be able to reorder that and create your own panels and you can write shorter panels, longer panels, depending on what the labs do in your area. You're also going to be able to reorder them so that they're in the order that you want them to be based on the way their lab reports come from, so that you have less time doing data entry.

Let's take a look at a real, live example. I want to just take you through a quick overview of what you'll see here versus what you'll see when you put these numbers into the spreadsheet. Let's take a look at this from a standard perspective that a traditional medical doctor might look at this. They'd look down and they'd say, well, the only thing going on here is low protein. Everything else looks really good, so it sounds like you need to eat more protein. Do you eat meat? Oh, maybe you should eat more meat. That would be the typical approach there.

Then they'd look at this page and say, well, your cholesterol's good and all your lipids are good. Your thyroid looks perfect. Your immune system looks perfect. Your vitamin D is just fine, antibody levels are perfect, they're below the limits, so you are perfectly healthy except for your protein. What you need to do is eat more protein. That's a typical approach. This is the order that it's laid out in LabCorp. You may see it different depending on what the client is using, but you've got the glucose at the beginning, then you've got some of the kidney function tests, which would be the uric acid, creatinine, glomerular filtration rate. We'll go through all of these in detail in the appropriate videos. Sodium, potassium, you have electrolytes, sodium potassium chloride, carbon dioxide, calcium, phosphorus, then we get into what's considered the liver, so we've got the protein, the albumin, the globulin, the EG ratio, the bilirubin, the alk phos, these are all liver enzymes. We're going to go through each of these.

Then you go through the lipids, you got cholesterol and triglycerides. You've got HDL and then you've got the ratios. Then you've got the thyroid section and then you've got what's called the complete blood count, and this a complete blood count with differentials, means that you're giving the types of white blood cells like the neutrophils, lymphs, monocytes, eosinophils, and basophils, and we'll go through that in the appropriate section on the immune system functions.

Then you go into the thyroid. Again, because the special tests that we had her order were the antibodies and free hormones, and then the vitamin D.

That's what it basically looks like and that's what the typical approach would be. Hey, this looks normal. Why? Because she fell inside the normal range and the truth about the normal range is that 95% of the population fits into that normal range. It might be normal for the population, but it's not really healthy. If you want to be or if you want your client to be normal, which means that a high percentage of people get cancer, heart disease, diabetes, and all sorts of things, then yeah, fine, it's good. What we want to do is show them how to be optimal.

We have you put this on a spreadsheet that I put together. It's an Excel spreadsheet and when you put the numbers in it compares the number to two different ranges. The lab range and what we call the functional range or the ideal range. As you put this same exact person into this test, look what happens. Everything that's green is perfectly good. It's within the optimal range. Anything yellow is outside of the optimal range, and the other color would be orange, and I think we'll see one of those.

What I like to do when I fill these out, and we'll go through that in more detail, is I like to say, well, it's yellow and it's low so I'm just going to highlight the little description field, the little cheat sheet. It doesn't mean that they have all of these things. It's just a little cheat sheet to get you going. This is your first step when you're filling out the labs or wanting to analyze it. First step is you do what the normal doctor does. Okay, it looks like there's only one thing out of range. The next thing you do is look here. You put your numbers in here, and then the third thing you do is you can put it in the blood chemistry report. When you go through those three steps, which may seem like a lot, it's going to be an amazing learning opportunity for you

because you're going to keep getting repetition, repetition, repetition. We won't go through this now. We will go through this in a case study part in a later part of this module.

Now we go back here and we actually see that this is where the orange is, which is what was flagged. The lab actually didn't flag the globulin, which is right below the range, and some labs have slightly different ranges, so it may have been that this particular LabCorp that she did has a different range than the LabCorp in my area, which is where I put my numbers in from on this. You're seeing that instead of there just being one thing that we're flagging and saying, oh, just go eat more protein, we're going to be looking at the one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve, thirteen areas where we could give this person advice and recommendations to optimize her health. As we go through this module, what you're going to learn to do is not just look at numbers and look at each individual thing and what does that mean, but to look for patterns.

The other thing you're going to do is learn to look for comparisons over time with what's happening. Are certain numbers getting larger? Are certain numbers getting smaller? This is going to give you a really wonderful way to look at a standard blood chemistry and glean a tremendous amount of information about your client's nutritional status. This is the end of our introduction module and I'm really looking forward to digging in deep as we go through each of the individual pieces of this amazing blood chemistry.