Nutritional Endocrinology Overview and Relationships

Transcript

Hello and welcome to our Nutritional Endocrinology Overview and Relationships module. I am Dr. Ritamarie Loscalzo, founder of the Institute of Nutritional Endocrinology. We are here today to talk about an overview of what nutritional endocrinology really is and how you can use it to help support your clients and patients in getting the best results possible; how you can use the concepts of nutritional endocrinology to get to the underlying cause of their health challenges, and then to offer and create personalized protocols to help them get better.

This part is an overview, so generally what the hormones are, how they relate to each other, and what the hormone families are all about. As usual I always say that this is not intended to replace a one-on-one relationship with a qualified health practitioner. Of course you are welcome to use anything I teach in regard to your own health as well as with your own clients but always it is in the spirit of education and not diagnosis or treatment.

Let's start with ‘why do clients come to you?’ They may come for a number of reasons depending on how you are positioning yourself in the marketplace. They may come to you because they know that you are good at teaching them about food, and they recognize that their diets are not where they need to be and are not supporting their health, and they come to you for help. In other cases they are coming to you because they are actually feeling ill. They are not up to their best, they may be fatigued, they may have digestive ailments, they may have female or male hormonal problems, blood sugar issues; there are a number of things that they would be coming to you for.

You are here because your desire is not just to help those folks who are coming in because they want to know what to eat instead of Cheetos, but those who are coming in because they have been to other practitioners, or their doctors are not giving them any help with their fatigue or headaches or depression, and they don't want a drug approach. They are looking for a nutritional approach. The tools that we are sharing here at the Institute of Nutritional Endocrinology are about getting to the root cause.

As you know, and as we will discover in more detail in today's presentation, hormones control everything.

When you can fully understand how the endocrine system functions, the role of nutrition and lifestyle, and optimizing endocrine function, you will be able to solve problems that a lot of practitioners cannot even touch because they do not have the knowledge or the inclination to go so deep.

When those complex health challenges come across your door, the typical tendency is to be, eyes wide open, help, what am I going to do? Especially when they come in with their 4-inch thick stack of tests and records from another practitioner and they say “I don't know what to do anymore I am not getting any help” and you are like, whoa, I don't know, can I help them? What I want you to know is that at the beginning maybe you cannot but you are going to very quickly learn when you can help them, when you already have the tools, and when you will need to refer them to somebody who is a bit ahead of you in this process.

There are not usually a lot of people to refer to when somebody comes in and says, “I've been to a bunch of different medical practitioners, I've been to a bunch of naturopaths, I've been to acupuncturists, chiropractors, nutritionists. Someone told me that I should come to see you and that you could help.” Who else are you going to refer them to? You can calmly talk about your process, about the role of endocrinology, and how you are really going to dig deep and see if there are any stones left unturned by that string of other practitioners.

I will guarantee you that if they have only seen conventional Western medical practitioners before they come to you, there are likely lots of things that you can help them with, seriously. When they have been to a lot of other functional practitioners you are going to have to dig deeper to see if indeed you are at the point where you can help them. There are a lot of ways that you can go deeper.

Let's talk about what nutritional endocrinology is. This is a review for many of you listening, but we are going to go through it so we are all on the same terms. Nutritional endocrinology is the relationship between nutrition and endocrine imbalances. That seems pretty simplistic. That's what the name says. So what does that mean? Nutrient deficiencies or excesses will impact the production, distribution and receptivity of hormones.

We're going to talk more about receptors as we go on in this presentation, so you understand what that means; but when you have an excess or deficiency of certain nutrients that can affect your hormones in a big way. As we progress through this program you will get a deeper and deeper understanding of the role of nutrients in every single hormone that makes sense to study.

You are also going to study the relationship between food and hormones, not just nutrient deficiencies but foods.

There are specific foods that help your body to be more optimally efficient at producing hormones. There are other food groups that hinder. For example we know that gluten has a negative effect on hormone balance and that it can create an autoimmune condition. It can actually attack the thyroid, or the pancreas and the insulin producing cells in other ways, or cause inflammation in the digestive tract, which would affect nutrient absorption, which would then affect the hormones. So gluten is one of those foods that has a negative affect on hormone balance. Then something like green leafy vegetables or brassicas or zinc rich foods would have a positive affect on hormones. As we progress through the program we're going to get more in depth on what all those nutrients are and how they affect hormones.

Finally with nutritional endocrinology, we want to look at a hierarchy of intervention. I believe that we start with food and lifestyle in most cases. Know that there will be exceptions to all those rules. We start with food and lifestyle. We move to herbs, then to isolated nutrients, and to bioidentical hormones naturally sourced as needed. As I said, there are some exceptions. If someone comes and has really serious acute symptoms, and you know the route of 'food and lifestyle' helps, but there may be some things that you can do immediately to give them some symptomatic relief. For example, if someone is suffering from debilitating hot flashes there may be some herbs that you can use to give them symptom relief.

They may or may not be solving the underlying problem, so you need to look at the food and lifestyle as well, but in conjunction you can give them something to give them acute symptom relief. Same thing if someone is in a lot of pain. You know the reason that they are in a lot of pain is that they are eating a very acid-forming diet, or a lot of processed foods, or high glycemic foods, and you know you can help bring them into balance by addressing the diet and lifestyle, but right now they are in a lot of acute pain.

That's what I mean when I say there are some exceptions to those rules. You really need to be looking at each case individually and making some decisions. If you know of an herb, or a set of nutrients, that can give that person symptomatic relief while you are working on the underlying habits and diet, then by all means you do that. But also make sure that you explain to folks that you are looking for the root cause, and you want to correct the root cause; and even though there are some powerful herbs that will give symptomatic relief, in the long run it is not addressing the root cause, and you will end up with other problems down the road.

I have bio identical hormones at the bottom. I oftentimes, in the case of adrenal fatigue, when somebody is suffering from really bad adrenal burnout, do all of these altogether. We are not actually doing them hierarchically, although in some cases we would. People who are extremely sensitive to substances, to nutrients, to herbs, we would start with the food and lifestyle and work our way down.

But for a lot of folks it is going to take them a while to get the food and lifestyle in place, so we will offer them herbs, adaptogens and specific nutrients; as well as, in some cases, bioidentical hormones like Pregnenolone and DHEA, which are precursors to the other hormones. We do that to start to get them relief more quickly.

In Nutritional Endocrinology we are combining functional medicine, functional assessment protocols, with nutrition. When I say nutrition I mean really getting down and dirty in the food piece of it. The piece that a lot of practitioners will overlook is really helping and emphasizing the importance of food and giving people very concrete ways of working with food. What is functional medicine? What is the combination of functional medicine and nutrition? One thing functional medicine is not is 'this for that' approach where, based on symptoms or diagnosis, a particular medicinal compound is prescribed.

Even if the medicinal compound prescribed is an herb or a nutrient, it is still not functional medicine to have your list and say, 'oh, for this particular symptom I give that particular herb or nutrient' because it is very individualized. When we look at functional medicine we want to look at how that person's physiology and biochemistry are reacting. We want it to be functional, how is it functioning? Not just giving a particular pill for a particular symptom. I see that practiced a lot. I see a lot of practitioners who do what I call allopathic naturopathy or allopathic herbalism. They are still using an allopathic approach, which is symptom-substance versus that functional balancing approach.

What I want for you is that you become masters at the functional approach. What is going on in there, and how do you get it back into balance? So it is a combination of diet, exercise, herbs and other things, after you have done a functional assessment. That does not mean you have to be running a gazillion labs on every person that walks in the door. You are going to learn the techniques to use physical exam and history taking to get you a lot of that, and then labs when needed to clarify.

When I say physical exam let me clarify that, because maybe your scope of practice does not allow you to touch people and do an exam. That would be true if you are a nutritionist, health coach, psychologist, or somebody who is not licensed to touch. If you are a massage therapist, chiropractor, M.D., nurse, or nurse practitioner, then you are licensed to do some physical exams.

But rest assured, the way we teach the physical exam piece of the program is in a way that you can actually have your clients do some of these things on their own. You can, over Skype, on the phone, or a webinar-type set up, ask them a set of questions and go through and fill out a lot of the parts on that physical exam.

Ask them to have a family member or friend take a look at things that may not be very visible or viewable on a webinar situation, like looking into their eyes or things like that. I have a form that you can use with your clients to get those physical exam pieces.

Why is that important? A lot of nutritional imbalances will show up in the body; in the skin, hair, nails, or abdomen. If you are able to pick those up you are going to be ahead of the game in getting at the root cause.

We love our hormones and hormone love us. Hormones control everything. At the heart of many of your clients' health challenges is a hormone imbalance. You might not think of digestive imbalances as hormone imbalances, but when we look at the digestive tract hormones, you are going to see they (even digestion, lungs, heart and kidneys), are all hormone controlled. At the heart of most of your clients' problems is going to be some kind of hormone imbalance. Usually when people think hormone imbalances they are thinking estrogen, progesterone, and testosterone. They are thinking about sex hormone imbalances like hot flashes, low libido and PMS. But this is way beyond that, as you know. We will talk more about that in just a bit.

Let's take a look at the definition of hormones. Hormones are considered the messengers of life. They are chemicals that are secreted by particular glands, usually directly into the bloodstream. Those hormones, those glands that produce the hormones and secrete them directly into the blood stream, are called endocrine glands. There are also some glands that are exocrine glands. There are also glands that do both.

An example of that would be your pancreas. The pancreas secretes its digestive hormones directly into the digestive tract. It secretes insulin and glucagon, the blood sugar balancing hormones, directly into the bloodstream. The bloodstream carries those hormones through the body until it gets to a receptor on a cell. It gets to the cells that have receptors for those hormones. There are some hormones for which there are receptors on most cells and those are the hormones that control overall functions like metabolic rate.

Almost every cell has a receptor for thyroid hormone. Same thing for insulin, the blood sugar balancing hormone. Just about every cell in your body is going to have an insulin receptor because they are going to have to take sugar out of the blood and put it into their functions. So that is what the role of the receptors is.

They are located either on the cell membrane or inside the cytoplasm of the target cell. They are literally like antennas that are out looking for that particular hormone.

Hormones control the physiologic and behavioral activities such as digestion, metabolism, growth, reproduction, mood control, to name just a few. Hormones are super important and they run the show. This is a picture of receptors and the secreting cells, and it is basically the whole process. It is a simplified version of what happens in hormonal control. You've got secreting cells in the gland.

Let's say it is a thyroid gland: so the cell in the thyroid secretes the hormone into the bloodstream. The little hormone (the blue guys in the bloodstream) travel around until they come upon a receptor on the target cell. The receptor and the hormone are matched. It is almost like a lock and key relationship and that is how they recognize each other. When the target cell sees the hormone in the bloodstream it puts out a signal. The hormone then attaches itself to that target cell, and voilà, the target cell does what it is told.

The target cell uptakes glucose if it happens to be an insulin receptor. The target cell will increase the metabolic rate if it happens to be a thyroid receptor. Every single cell has receptors on it and those hormones are going to affect them accordingly.

This is a little bit of a close-up of the anatomy of a hormone receptor in the cell membrane. We've got a bi-lipid layer. We will go into more detail in the module on cell metabolism about the receptors and how they work. Basically these receptors are transport proteins, and there is a 'water loving' and a 'water fearing' part of the membrane: the outer part is the water loving and it attracts things, inside is the water fearing. We will go through this in a lot more detail in our module on cell metabolism. You do not have to memorize this, this is not going to come up clinically every day, but when we look at a receptor we want to really get a sense of what it is: basically transport protein that helps to transport from outside the cell up here, to inside the cell down here.

Let's take a look at what our major endocrine glands are. In this diagram we have the female depicted on the right side and the male depicted on the left side. That is, if you are looking at it, the female is on your right side, as if you are actually looking at it as a mirror of your body. (If you are looking at it as your body then the female is on the left side and the male is on the right side).

There are some glands that common to both, and those would be the pineal gland, which is in the head, and controls melatonin production, very sensitive to the light going through the eyes; and the pituitary gland, also in the brain. The pituitary gland controls the other glands and the production of hormones by the other glands.

What is not depicted here is the hypothalamus. The hypothalamus is part of the nervous system. It is a master control of temperature. It is also the master control of the endocrine system. Basically the hypothalamus controls the pituitary, which then controls all of the rest. So the thyroid is shared, the thymuses are shared. The thyroid is in the neck; the thymus is in the chest underneath the sternum, the breastbone. Your pancreas is in the abdomen behind your stomach. Your adrenal glands sit on top of your kidneys. Again, everything we've talked about so far is common to both sides, male and female. Then we get down to the ovaries, which are on the female side, these produce estrogen and progesterone. The testes on the male side, produce testosterone.

In addition to the ovaries and the testes producing the sex hormones, the adrenals produce them as well. Small amounts of estrogen, progesterone and testosterone are all produced in the adrenal gland. Part of the reason why a lot of folks have pain, irritability and hot flashes when they go through menopause, is set in small background amounts of these hormones: estrogen, progesterone and testosterone, which are produced by the adrenals, and are usually not sufficient by the time a woman gets to menopause, because they have been burned out for so long. Let's take a look at the master control: the pituitary and the hypothalamus.

The hypothalamus, which we said, is part of the nervous system as well as part of the endocrine system. It is a part of your brain, and it communicates directly to the pituitary gland. You can see the pituitary sitting right here and this is the hypothalamus. Let's look at the hormones produced by the hypothalamus and the pituitary, how they work and what they do. The hypothalamus: many of the hormones produced by the hypothalamus are called releasing hormones. They are hormones that then stimulate the pituitary.

Thyrotropin-releasing hormone stimulates the pituitary to produce TSH, which is thyroid-stimulating hormone. So if you see hormones that are stimulating hormones they are more likely to be from the pituitary, and releasing hormones are more likely to be from the hypothalamus. Thyrotropin-releasing hormone stimulates the pituitary to produce TSH. Gonadotropin-releasing hormone (GnRH) stimulates the pituitary to produce FSH and LH, which are gonadotropin stimulating. Growth-hormone-releasing hormone (GHRH) stimulates your pituitary gland to produce growth hormone (GH). Corticotropin-releasing hormone (CRH) stimulates the pituitary to produce ACTH, adrenocorticotropic hormone.

The hypothalamus actually produces another hormone, somatostatin, which inhibits the production of growth hormone. The hypothalamus is the only one in which there are two hormones that are both releasing (GHRH) and inhibiting the growth hormone (somatostatin). In all the others, it's the level of the particular hormone that controls whether the gland is going to continue to produce, or to stop producing.

Then we have oxytocin, which is the milk let-down hormone that women experience when they are nursing, but also stimulates uterine contraction. Oxytocin is a hormone that's given to produce labour. In addition, oxytocin is a feel-good hormone. You can see why: it is related to sex and babies. Oxytocin is also called the orgasm hormone because it goes up during orgasm and it also goes up whenever there is a lot of touch. So contact, getting a massage, stroking and rubbing, children hugging, partners hugging, touching and caressing, produce more oxytocin, which makes you feel good.

I have a son who I feel like has this constant need for oxytocin because even at almost age16 he is coming for cuddles and wants me rubbing his back. It is really a feel-good hormone. It does not have to be sexual, it's just anything. Oxytocin we will also talk about when we do our reproductive hormones. Oxytocin is related to camaraderie and closeness. We find that when women get together, in women's circles, and go to retreats with other women, the oxytocin levels go up.

Finally, we have antidiuretic hormone (ADH). Antidiuretic is the opposite of a diuretic. A diuretic is something that makes somebody lose and let go of water, when they are maintaining extra fluids. There are drugs like that. But antidiuretic hormone actually increases the water retention and the ADH works on the kidneys.

Let's look at your pituitary. The pituitary has two lobes, the anterior and posterior. The anterior pituitary is also known as the adenohypophysis. That is usually called the anterior lobe so don't worry about that word, but I want to be able to recognize that if you happen to be reading scientific literature about the pituitary. Let's go through some of the hormones that are produced by the pituitary. We have the thyroid-stimulating hormone (TSH).

We have follicle-stimulating hormone (FSH), which controls both the testes and ovaries, causing a follicle to be matured and stimulated to grow during female menstrual cycle, and stimulating the testes to produce more testosterone. Luteinizing hormone (LH) is a hormone that actually promotes the release of the egg once the follicle is stimulated. Adrenocorticotropic hormone (ACTH) is the hormone from the pituitary that stimulates the adrenals when there is a fight flight response required.

Prolactin, also related to lactation, helps with milk production and is produced by the anterior lobe. It is not a stimulating hormone; it's a specific hormone that gets produced in the pituitary, as is growth hormone. Remember that the hypothalamus produced a stimulating hormone and a suppressing hormone for growth hormone. Growth hormone itself is produced in the anterior lobe of the pituitary.

The last one produced by the pituitary is alpha melanocyte-stimulating hormone: this has to do with melanin production in the skin. If you go in the sun and get a tan, you increase the melanin production in your skin; that is controlled by the pituitary gland. The posterior lobe of the pituitary, also known as the neurohypophysis, releases antidiuretic hormone and oxytocin. It does not produce those hormones but the hypothalamus produces them and it was sent out into the posterior pituitary to be stored until needed.

The posterior lobe does not produce ADH or oxytocin: but stores them after they are produced in the hypothalamus. The more you look at this and the more you study it, the more you understand it. It is a good idea to understand this because when a person comes in to see you, it will help to understand. Let's say they have low thyroid function: is it because the thyroid is not producing because it has some damage or nutrient deficiencies? Or is there a problem with the pituitary not stimulating enough? Or is there a problem with the hypothalamus not stimulating the pituitary or over-stimulating the pituitary?

When we go into the thyroid in other modules, we will go through 'how do you know how well this is performing?' and 'how do you know where it is?' I want you to understand the pituitary, the hypothalamus, and their relationship to the other glands, so that you can more accurately and more easily assess what might be going on with your client.

Hormones have been called crazy. Why are they called crazy, because it is hard to predict what symptoms they are going to cause: imbalances in hormones can cause symptoms of just about anything. They can affect your focus, memory, sugar handling (insulin and glucagon), digestive function (we will talk about those hormones in a little while), muscle tone, how well you burn calories or not, your kidney function, satiety after eating, temperature regulation, metabolic rate, sex drive, breast development, and menstrual cycles.

Hormones can affect all of these, and more. There are a lot of other symptoms, which we will look at, that can be hormonal related. Your job is to figure out which of those hormones is having a problem, and then why. Why is that hormone out of balance and what can you do, from a nutritional and lifestyle perspective, to restore that balance?

[30:44] This slide is to show you the complexity of hormones in the body. Believe it or not this is not all of the hormones. These are hormones I thought you might've heard of, a few that you have not, but that reflect upon other places in the body that you may not think about in terms of producing hormones. Almost everything is part of the endocrine system.

I am going to go through and briefly mention these hormones, what they do, and where they are from. Know that we will go back to each and every one of these when we study in depth the particular endocrine area.

Pregnenalone is produced in the adrenals. Its precursor is cholesterol and downstream metabolites are just about everything you can think of. All the steroid hormones come from pregnenalone: cortisol, DHEA, testosterone, all the estrogens, progesterone, and aldosterone. Aldosterone sits right below pregnenalone, and controls fluid balance, retention, or release of fluid; it affects the kidneys. Erythropoietin affects the synthesis of red blood cells. Parathyroids: there are four parathyroid glands in your neck.

Parathyroids control calcium absorption. It has an effect on bone metabolism. Calcitriol produced in the parathyroid affects calcium metabolism. Thymosin produced by the thymus, affects the immune system and the synthesis of blood cells. ADH, antidiuretic hormone, we just spoke of that, from the hypothalamus that controls the retention of fluid. Serotonin and dopamine: you may think, ‘serotonin and dopamine, I did not know those were hormones.’

They have hormonal effects as well as neurotransmitter effects. Their effects in the digestive tract are very much hormonal. Gastrin is a digestive hormone that controls stomach acid. Leptin is a hormone produced by fat cells that effects appetite. Incretin is a hormone that is produced in the digestive tract. Ghrelin is produced by the stomach and controls the appetite. It says ‘hey, I am hungry.’ Leptin says ‘hey, we are full, go burn fat.’ Somatostatin controls growth hormone release. CCK also known as cholecystokinin, that won't fit so we just abbreviated as CCK, is produced in the digestive tract. Secretin produced in the digestive tract.

You can see there are a lot of hormones produced in the digestive track. TRH, we already looked at that, a hypothalamic hormone, which controls TSH. T3 (also known as triiodothyronine) is a thyroid hormone, which is the active thyroid hormone, the one that actually goes in and talks to the cells and affects the metabolic rate. Whereas thyroxine (T4) is mostly what is produced by the thyroid but is more inactive, and it is more of a storage form that gets activated into T3 at the cellular level, also in the liver.

Reverse T3 is like the brakes in the thyroid system. If you've got too much thyroxine being produced (T4), and you don't want to be producing that much T3 because a person will get revved up, a protection would be to move it on down to reverse T3 instead, which is inactive and it is excreted and cannot be used.

We run into problems (you will see when we go into thyroid) with the production: the conversion to T4 and T3 can be low, and more of it can go into T3 in the absence of selenium, and also under a lot of stress. We will go into a lot more detail about that when we go into our thyroid module. TSH is thyroid stimulating by the pituitary.

Melatonin is produced by the pineal gland, and controls deep sleep. Natriuretic peptide is a hormone produced in the heart. We will talk a little more about that we do our cardiovascular module.

Prolactin and oxytocin, we looked at those in relationship to milk and lactation, but also oxytocin related to feel good. HCG (human chorionic gonadotropin) is a pregnancy hormone. It is produced in tiny amounts in non-pregnant state but in the pregnant state it skyrockets. When we do our reproductive section we'll talk about HCG and how it is used in weight loss. It is hugely used in weight loss, and I am not really sure about the long-term effectiveness or even the safety of that. Testosterone is our primary male hormone produced by the testes and a little bit by the adrenals. Progesterone is a female hormone responsible for building the lining of the uterus; produced by the ovaries and a little by the adrenals.

Estrogen is a prolific hormone. It helps to build breast tissues and it helps with sexual maturation: female hormone, again produced in the ovaries and also the adrenals. Insulin is a blood sugar regulating hormone, as is glucagon, and they are both produced in the pancreas: insulin in the beta cells and glucagon in the alpha cells.

Then we have growth hormone, which is produced by the pituitary and controlled by the hypothalamus. It helps with growth and repair, burning of fat, storage of lean body mass. It tends to go down as we age. Cortisol is produced by the adrenal cortex. It controls the fight flight response, more of the long-term effect. Whereas adrenaline is a quick, get in there; cortisol lasts longer and is responsible for raising the blood pressure, raising the heart rate, shunting blood away from the digestive tract, increasing the blood sugar, all those things you need when hungry tigers are chasing you. ACTH (adrenocorticotropic hormone) which is produced by the pituitary to control the release of cortisol and adrenaline. DHEA, also produced in the adrenals, is responsible for growth and repair and it is thwarted by cortisol: meaning if you have too much cortisol in your system because there is a lot of stress (or in your client's system), you are going to find your DHEA starts to go down.

When we learn about the adrenals, and how to test for them, we will look for patterns of DHEA, cortisol, and the ratios between them. This is intended to give you an overview.

Don't worry about remembering everything I just taught you. Some of it will stick, and some of it you may already know, but we will go into all of this in way more detail. I like to teach from the standpoint of giving you a big picture and then drilling down to the details. So don't worry about this right now. All of this will come in due time. I wanted you to see the complexities here.

Let's look at how hormones control function and why they are so important and why the study of nutritional endocrinology is, in my opinion, super important to helping your clients overcome their problems. Hormones affect appetite and digestion (lots of different hormones), the nervous system, the blood sugar regulation, cardiovascular system, the respiratory system, the immune system, growth and repair, metabolism, detoxification, reproduction, emotions, sleep, and stress response.

Did I leave anything out? Do you see anything there that hormones don't affect? What we just looked at is how hormones control all the different functions in the body. What we are looking at now is that these particular things control the hormones, and also the hormones control all of these things. Nutrients affect how the hormones are going to operate, but hormones control how much nutrients you are going to get into your system; same thing with foods. Hormones control stress, and also stress affects other hormones.

The environment has an effect on your hormones, and hormonal balance is important for detoxifying from environmental toxins. Hormones obviously control digestion, and then the hormones are controlled by digestion because if the digestion is not working really well, you will not have the nutrients and the building blocks for creating good hormones.

Sleep is super important; it is controlled by hormones. There are a lot of hormones that affect how well you sleep: cortisol, melatonin, leptin, and growth hormone. If you do not get adequate sleep, you will have hormonal imbalances as a result. Insulin resistance skyrockets when you do not get enough sleep.

Finally hormones control other hormones. There is a big interaction; we will start to look at relationships as we go through the rest of this module. The connection between hormones and persistent symptoms: all of the symptoms listed can be related to imbalances of hormones. Lethargy, fatigue, malaise, those are all kind of similar. Depression, angina, cognition, immune system, anorexia, intolerance to cold, endocrine and metabolic abnormalities: these are all symptoms that can be persistent.

Your client may be coming to you and sharing what they have, which shows the importance of taking a really thorough history. You can hone in on what imbalances are creating this.

Cardio respiratory disturbances, gastrointestinal disturbances, tendency towards bleeding, reduced exercise tolerance (maybe with adrenal problems), weakness, shortness of breath, exertional chest pain (chest pain when you exert yourself), impaired concentration, impaired libido and impotence, insomnia, headache, pallor, neuromuscular disturbances, cutaneous disturbances, musculoskeletal symptoms, and pruritus (itching of the skin). These are all things that can be controlled.

I have them listed--fatigue, weight gain and weight loss (yo-yo, yo-yo), insomnia, depression, anxiety, mood swings, skin lesions, high cholesterol, cancer, and so much more. This really expands and explains the need for you to do a really thorough history.

This concludes the first part of our Nutritional Endocrinology Overview And Relationships module. Next we are going to take a look at the relationships, the hormone families, and how all of that plays out.