



Therapeutic Nutrition and Supplements in Practice Transcript – Class 1 Part 2

0:00

The first question is, what are we made out of? We are just these, with what I've heard someone call before, these Meat Puppets, right? That flesh and bone and skin. But what are we actually made out of? We want to learn how to rebuild our body, with the adrenal glands, fatigued and burnt out. What does that actually mean? Like, how do we rebuild the adrenal glands? If someone gets injured in a trauma, or if they're working out really hard, or if they broke a bone, what are the components that actually build that tissue? What actually makes our body? And of course, the answer is, elements. And you can actually see the elemental composition of the human body here on this slide, we are made up mostly of oxygen, we also have the full breakdown on page one of our notebooks. We are mostly oxygen, carbon, hydrogen, and nitrogen. And then we get into all the minerals, calcium, phosphorus, potassium, sulfur, chloride, sodium, magnesium, silicon, and then going into the micro minerals that trace minerals in very small amounts. So if I took all of the water content in my body, I basically dehydrated myself and I was just like a pile of dust. This is what I would be made out of. Now, of course, there was lots of other things that happen in the body, to build tissues, break them down to run various systems, there's lots of things that we can see here on the elemental composition of the human body. But it's nice to know. And it's interesting to know that we're just a composition of these fundamental elements. And what we're trying to do when we're restoring health to the body is a lot of the time we're balancing these different elements. Sometimes we're restoring these different elements. And we're really trying to balance the biochemistry of our human body. We're going to talk about biochemistry in quite a bit of detail. Now, don't get freaked out when I use the word biochemistry, because it's going to be pretty top level. And I hope that I explain it really well, so that you understand it so that you can own the information.

2:26

Moving on to what I call the slope of health. Now, in the slope of health, I talk about basically what health is, you know, we were never really taught what health is in school? Well, at least I wasn't, you know, it's this arbitrary word that we hear. We know it's a good thing. We know, we want to have good health, maybe even great health. But no one's ever told us what it is exactly. How to get it, how do we attain it, how to keep it. And because most people just have an abstract idea of what health is, it's hard to really reach for it or move towards it. You know, if I was going from where I am today to the west coast, for example, say Vancouver in Canada, I would need to tell the mapping program, where I am today and where I want to go in order to get the route to that place. It's the same with health if we don't know what the goal is, how are we ever going to get there? How are we going to find our direction? How are we going to figure out where we are today? So the slope of health is something that I present in many courses. I give this to every single client that I have, because we need a working definition. And what I'm going to proceed to do is actually go through my complete slope of health so that you understand as we go through this course,



what health is. Because if we don't have this common definition, as we all go through this course, we're going to be in different slides, we're going to be different pages, right, we're not going to be on the same page here. So we want to get us all on the same page.

4:16

So we're going to go through both sides of our slope of health, starting with the bottom side of the slope of health, known as what we might call lifestyle, or we might even call it the cause the cause of what because of our current state of health, which we'll look at, on the other side of our slope of health. So at the top of the slope of health, we have heredity, inherited factors, these are the genes that we get from half from our mother, and half from our father. They're passed down to us. Unfortunately, we can't choose our parents. Or fortunately, in some cases, we haven't really figured out how to do that yet. So we get given these genes, these set of genes. They have their strengths, and they have their weaknesses. Now, if I go outside, and I get lots of sun, and I have good relationships, and I eat good food, and I drink good water, and I move, and I do all these really great things. Well, all these different lifestyle and dietary choices have certain messages that communicate with the genes in my cells. And they turn on my strong genes, and they turn off my weak genes. We actually have the ability to turn our genes on and off. So our genes are like a book. A book has many pages, lots of information. But we can choose which page to read in that book, we could choose where we want to open it, just like our genes, our genes are not our destiny. Now the opposite - if I have a poor diet and lifestyle, I smoke, I don't get any sunlight or fresh air, I don't move. I eat bad food, I eat fast food, I drink tap water or no water at all, or use coffee and sodas as my liquid. Well, guess what? That expresses the weaker genes, turns those on and turns the stronger genes off. And then that pulls me down the slope of health.

6:27

Now you might have guessed, it's called a slope because it's easy to go down the slope, not so easy to come back up, and takes a little bit of effort to stay at a certain level. So the poor diet and lifestyle brings me down the slope of health. That could lead to vitamin and mineral deficiencies, or in some cases, excesses. And of course, in this course, we're going to talk about different vitamins and mineral deficiencies. And what that can mean, what the implications of that may mean for the human body. And of course, we get our nutrients from food. So if we have food that's deficient in nutrients, we end up slipping down the slope of health a little bit more. And then we have this wonderful world of chemicals, artificial food additives, pesticides, and chemical exposures, environmental pollution. Some of these, we can control. Some of these we can't control, you know, we can't really control a smoggy day outside, if we have to go outside. Carpets off-gas, cars off-gas, you know, you go to into a building and they have those air purifiers that they're spraying a scent every 30 minutes or something. We can't really avoid that sometimes. And there have been studies that come out of the Environmental Working Group looking at just random people across America. And they found that the average person has at least 100 chemicals, 100 toxins in their bloodstream. Even some people that are very healthy, and that live a very clean lifestyle. So these things are unavoidable. And then there are other



ones that we could sort of choose; we could do things to help prevent that exposure, like food additives, and food chemicals and preservatives. We could eat organic food, we could try not to get food packages, right, we can store food and things like glass and stainless steel instead of plastics and decrease our chemical exposure. But whatever way we cut it, we're going to be exposed to chemicals in some way.

8:33

We've invented 1000 chemicals in the past 100 years, many of which have never been approved for safety. I believe the current number is that five chemicals have actually been banned in North America in Canada in the US out of those 80,000. So chemicals have an innocent until proven guilty reputation, right? That's not something we should use with chemicals, we should do the opposite guilty until proven innocent. So chemical detoxification is highly nutrient driven. And we're going to talk about this in detail in this course when we go through specific nutrients. But we also have another course that I run on detoxification where we really dive deep into this. So these chemicals pull us further down the slope of health. They take more of our life force. Then we might get to a point where we have digestive problems and internal toxicity, where we actually have in the inside of our body, a situation where we're creating toxins. We have about five grams of toxins in our gut at any one given moment. They're called endotoxins. If we have a leaky gut or a damaged gut, these endotoxins can leak into the bloodstream and go systemic and cause problems elsewhere.

10:00

Constipation is an example of possible internal toxicity; we want to get rid of our garbage on a regular basis. But constipation prevents that. So our body takes on an extra load, we move down the slope of health. In Dr. Bernard Jensen's book, *Your Guide to Better Bowel Care*, he talks about tons of symptoms, I think over 100 different symptoms associated with internal toxicity, and having toxins build up inside your body. So at the end of our slope, we might actually get to a point where we need medications. And sometimes these things can be life saving; for example, an infection could kill you if you don't take an antibiotic. But whatever way you cut it, these drugs add an extra load to the body, they're an extra thing for the body to deal with, even if they're life saving, so that can pull us further down the slope. So that's the lifestyle side of the slope of health, what you might call the cause.

11:04

Looking at the other side of the slope of health, we have the medical or we may call the effect. Now I call it the medical because the medical system is really the standard of care at the moment. We feel an ill, and we get a doctor's opinion as part of the medical system to figure out what's actually going on. So at the top of the slope of health, on the medical side, we have blood tests. And usually they're normal at the beginning of a disease process. So, we go, and we feel like something might be up or we're just going for a regular checkup, we get some blood work done, and the blood work comes back normal. Now we have to understand that the blood is the river of the body. It's the roadway of the body, it's another way of saying it. It's critical for transport, it brings nutrients to our



cells, and it takes toxins away from our cells. And there's this constant exchange happening. And the bloodstream is responsible for that. So it wants to stay within a very, very, very tight range of pretty much everything. So for example, our blood pH is about 7.35 to 7.45. Now our urine fluctuates from like five to eight in one day, even like within hours, it's not even looking at the decimal places, but the blood is in the decimal 5.35 to 5.45. If we go out of those, we're basically in a coma. So it does whatever it has to do to really stay within that tight, tight range of in this example, our pH. But for many other things, the different proteins and minerals in the blood, it wants to stay within a tight range. So because of this body's urge and ability to stay within that range, it wants to or will do it at the expense of other tissues. So if we take a sample of the blood, it doesn't really tell us what's going on in the cells. For example, you know, if I go out in the street, and see what's going on, on the roadway, it doesn't really tell me what's going on in the building or in the house. Right?

13:28

You know, someone could be growing cancer in the side of their body for you know, 20, 30, 40 years, and never even notice that in the bloodstream, right? There are never markers until maybe it's too late. Okay, so blood tests are usually normal at the beginning of a disease process. Not the best indicator of health. But also if you do know how to read blood work, it can be helpful to catch things in advance. But of course, that's another workshop or course. Then someone feels some physical signs, some symptoms, a little fatigue, a little pain, a little digestive upset, maybe even a headache. And what do they do, they can just ignore those symptoms. I know we've all done that at some point. Or we can get an over the counter drug to suppress the symptoms. And if we do that long enough, sometimes those symptoms get stronger. Sometimes they come back with friends. And then we go back to the doctor, we say, Hey Doc, the symptoms didn't go away. I first tried to ignore them. I then tried to suppress them. Now what? And they say, well, that group of symptoms is called this and they give you a diagnosis. Diagnosis is a naming of a group of symptoms. That's really all it is. We name it so we can try to tame it right so we could use drugs, stronger surgeries, radiation, chemotherapy, things like that, to try to deal with that diagnosis. That group of symptoms. So that's the other side of the slope of health. And we have to understand that this is a concept; it's a continuum of health, right? You know, we can't really always just plot someone right on one specific spot on the slope of health, sometimes we have to, you know, use it more like a concept. But to understand that it's a continuum, we're never in a state of stagnation, just like, you go into a forest. And in that forest, things are either growing, or they're dying. And you can pretty much tell pretty easily which way things are going. There's never anything in stagnation. And we are the exact same way, we're never stagnant. Our health is never just streamlined. We get that impression sometimes when we go to the doctor, we get a checkup, our yearly checkup, we get a clean bill of health, our doctor sends us off and says, oh, you're doing fine. Whatever you're doing, keep on doing it. If you're not doing anything, really, you're either moving one way up the slope of health or down the slope of health, likely down. We have to do things; we have to make an effort to stay up the slope of health. We have to exercise and take good nutrients and



eat really good food and have good relationships and get sunlight and drink good water, etc., etc.

16:22

So a few questions I like to ask my clients or have people consider is where do they think they are on the slope of health? Where would they plot themselves? How did they get there? How did they get to that spot on the slope of health? How did their health deteriorate? Or maybe how did it appreciate? How long will it take them to climb back up the slope of health if they're lower down? And what do you think it takes to get back up the slope of health? These are just some things I'd like people to consider. So that's the slope of health. That's our working definition of this, I hope not anymore, what used to be an abstract concept called health; this thing that everyone's going for, but no one really understands what it is. We are in control of our health; we have the ability and the power to really move our self in the right direction. You know, sometimes people say to me, you know, how long is it going to take for us to get back up the slope of help? And what I say usually is, first of all, it depends how compliant you are. Second, it depends on your biochemistry in your body's ability to heal. But most importantly, if you follow my protocol, and if you do all these good things, you're going to be moving up the slope of health, and I really care about you moving in the right direction, rather than the wrong direction. If you're moving in the right direction, I don't care how fast it is, we know that you'll get to your goal at some point. So that's the slope of health. I may be referring to it multiple times throughout the course.

18:07

So how did we get into this whole world of nutrients and nutritional sciences and whatnot? You know, where did it all begin? Well, it began a while ago with the sailors in the 1700s. They were sailing the ocean blue, they were looking for new land, they were looking for new foods, and they were looking for anything new and exciting. And what would happen is people would go out on these long journeys, they would go out on a ship with all their food. And many people would come down with this illness, this mysterious illness. What would happen? Wounds wouldn't heal, their gums would start bleeding, their teeth would fall out, their immune systems would crash, and some people would even bleed from the inside out. It was horrendous. Many people died this way. And what they discovered eventually, was that there was a fruit that had the secret that had this secret sauce that had the secret ingredient that would prevent this. And what they found was that it was limes. Limes had this secret ingredient. And that's why actually sailors are sometimes called limeys. Right? So they had this secret ingredient. And when they took these nutrients, these limes and lemons, these fresh fruits on these long journeys and consume them regularly, they found that these sailors would not come down with this illness. And of course, you probably already know what this was and this was scurvy. Scurvy was one of the first diseases to be tied to a specific nutrient, a specific nutrient deficiency. And what we found is that it was directly tied with vitamin C. We had this condition. We had this nutrient and when you gave the nutrient to the body, this disease was prevented. Nowadays, we have these really wonderful things called supplements, a concentrated form of vitamin C. So maybe in that line, there's,



you know, below 100 milligrams of vitamin C. But if someone had, you know, scurvy, or signs of scurvy, or vitamin C deficiency, we now have these concentrated forms of vitamin C, like these caplets that you see here, that can really speed up the healing process. If someone has scurvy, we could tell them to eat some limes, but that's going to take a long time to heal, versus the supplements, which can really speed up the healing process. So that's where we actually have a place for these types of nutraceuticals, these types of supplements. And taking it even a step further, we can actually give them IV vitamin C, we can actually put it right into the bloodstream, and we can bypass the whole digestive tract. And wouldn't that be snazzy, you know? As a nutritionist myself, I can't give IVs and it's not practical for everyone. So we're going to work with talking about supplements and how those are used, like this vitamin C capsule right here.

21:23

So as we just spoke about, we spoke about scurvy, which is a vitamin C deficiency. And we can maybe even call this a single nutrient deficiency, where we know that without this nutrient, people get a very specific set of symptoms. And with this nutrient, those symptoms go away. Now, as humans, we're like crazy scientists. We love when there's a really, what I call sexy cause and effect, you know, stuff that we could study in a placebo controlled double blind study. You take away the vitamin C, they get the symptoms, you give it to them, the symptoms go away. We love that, we love these single nutrient deficiencies, where we have a direct cause and effect, a direct correlation.

22:11

A few other examples of that are beri beri. So beri beri is a condition where there's lethargy, and muscle wasting, and this is directly tied to vitamin b1 deficiency. Okay, so again, another really sexy cause and effect. Another one is pellagra, which is a niacin deficiency, vitamin B3. And this is known as, well, the symptoms associated with this deficiency are known as the three D's, diarrhea, dermatitis and dementia. Does not sound like a fun time to me. So those are vitamins. But we can also see this with specific macronutrients like protein. Protein is critical for health. And when someone is protein deficient, they can develop something called kwashiorkor. Kwashiorkor is a protein wasting disease. You know, sometimes you see people with, or the kids with the big bellies who are malnourished, that's a sign of kwashiorkor, protein deficiency. So those are the really sexy, what I like to see and what many scientists like to see as the single nutrient deficiencies, one nutrient one deficiency.

23:39

Now, before we move on, I'd like to read you a story - a story about the blind men and the elephant. So you know, you can sit back for a moment, relax, put your pen down; we're going to just really enjoy some storytelling by Josh Gitalis. It was six men of Indostan to learning much inclined, who went to see the elephant, though all of them were blind, that each by observation might satisfy his mind. The first approached the elephant, and happening to fall, against his broad and sturdy side, at once began to bawl. God bless me but the elephant is very like a wall. The second feeling of the tusk cried Ho, what have we here, so



very round and smooth and sharp to me 'tis mighty clear. This wonder of an elephant is very like a spear. The third approached the animal and happening to take, the squirming trunk within his hands thus boldly up and spake. I see, quoth he, the elephant is very like a snake. The fourth reached out his eager hands and felt upon the knee. What most this wondrous beast is like his mighty plain, quoth he, 'tis clear enough the elephant is very like a tree. The fifth who chance to touch the ear said e'en the blindest man can tell what this resembles most deny the fact who can. This marvel of an elephant is very like a fan. The six no sooner had begun about the beast to grope, then, seizing on the swinging tail that fell within his scope. I see, quoth he, the elephant is very like a rope. And so these men have Indostan disputed loud and long, each in his own opinion exceeding stiff and strong. Though each was partly in the right, and all were in the wrong. Moral: so oft in theologic wars, the disputants I wean, rail on in utter ignorance of what each other mean, and prate about an elephant, not one of them has seen. I hope you enjoyed storytime with Josh. So, as you might have construed from the story, this is a story about looking at different parts in isolation, different parts instead of looking at the whole, and when we look at specific parts, and we're too focused in, we miss the whole picture. It's analogous to a lot of what goes on in our medical system; we've got a different doctor for each part of the body. We've got a gastroenterologist for the digestive tract; we've got a cardiologist for the cardiovascular system, a neurologist for the nervous system. But we sometimes forget that everything's connected. And so it is to with a lot of the nutrients that we're dealing with, there's a place for all the nutrients and they all interact and this complex network, which we will see.

27:15

So we love to look at specific things like what we were talking about - the single nutrient deficiencies. And with single nutrient deficiencies, we can actually see this sometimes with symptoms, as we saw with scurvy and kwashiorkor and beri beri and pellagra, there were very specific symptoms. Well, what's interesting is with plants, we actually see the specific symptoms as well, known as single nutrient deficiencies. In this plant, in this example, we can actually see when there's a deficiency with boron and silicon and sulfur. We can see, for example, in the bottom left, when there's a deficiency in phosphorus, the Leaves turn a little purple. When there's a deficiency in iron, it almost has a whitish, discoloured colour. When there's a deficiency in nitrogen, bottom, right, it's almost like a yellowing, right? So we actually see symptoms with these nutrient deficiencies, and it's very similar in the human. I'll get to that in a moment. Here's another example looking at plants. On the left hand side, this plant actually has symptoms of chemical toxicity. Do humans have symptoms of getting symptoms of chemical toxicity? Absolutely. The third one from the left is showing drought. What happens when we don't get enough water? And then we also see in the middle, we see not enough nitrogen; we see other symptoms from that. So humans get symptoms when we have certain nutrient deficiencies as well. And you know, if this plant was showing us some symptoms of nutrient deficiencies, I probably wouldn't go and say, Oh, your leaves are yellow, and let me go find a drug to put in your soil to see if we can remedy this. No, the farmer looks to see what the soil is missing. What specific nutrient is the soil missing? Does it have enough of all the nutrients? Because the plant is able to kind of pull



and take which nutrients it needs for optimal health. And humans are the same. So we really like when we can see single nutrient deficiencies, a cause and effect. This nutrient causes the symptoms when it's deficient. This new drug causes the symptoms when it's in excess. And when we give it back to the person, well, lo and behold the symptoms go away.

29:59

Now things start to get a little bit more complicated when we start to look at multiple nutrient deficiencies. And this is a little bit more realistic of what goes on in the world. So firstly, cancer. I mean, if we started looking at the research, we could see that cancer is pretty much associated with every nutrient out there, right? It's like a different study comes out every week showing us what deficiency cancer is associated with. For example, tons of research coming out on vitamin D in cancer. But with cancer, we need really good antioxidants to protect cells, to protect the DNA, to prevent that DNA from getting damaged and from cancer happening from that cell replicating out of control. So we need really good antioxidants, and where do we get an abundance of antioxidants? From whole foods. From all those bright wonderful colors that we find in fruits and vegetables, the reds and the oranges and the purples and the yellows, etc.

31:11

Another example of multiple nutrient deficiency - high blood pressure. We can't really pin it down to one nutrient. We know magnesium is critical for blood vessel health and integrity for relaxing the blood vessels and helping with blood pressure. We know that potassium works with sodium to help to balance how thick our blood is. And we know that calcium works with magnesium as well for the contraction and relaxation of the heart muscle. Just a few examples. So we can't really say that these diseases can be tied to one nutrient and we often see that a lot, with a lot of the degenerative diseases, the diseases that take a long time to form and also subsequently take a bit of a longer time to heal - degenerative diseases. We know that most degenerative diseases are preventable through diet and lifestyle modification, and oftentimes they're treatable through diet and lifestyle modification.

32:16

Moving on to cardiovascular disease, now we see even more nutrients. Vitamin E is a critical antioxidant in the cell membrane. Vitamin C, a critical and water-soluble antioxidant. B6, B12, and folic acid - critical for preventing the buildup of something called homocysteine, which can damage the cardiovascular system. We're going to talk a lot about these in great detail.

32:43

Osteoporosis, a thinning of the bones. Now we're really getting complicated. Now we're getting into lots of nutrients. You know, osteoporosis isn't just about calcium. Is it just about having enough calcium to make bone? Well, we know bones are made mostly of calcium. But there are a lot of other nutrients that go into it. Magnesium helps keep calcium in solution. Phosphorus needs to be in a 1:1 ratio with calcium. Silicon is important for protein production. Zinc is important for protein production as well. Copper, boron is necessary for



activating vitamin D. We see that there are so many nutrients involved in just bone formation and bone remodeling. It's getting complicated - multiple nutrient deficiencies.

33:37

Finally, diabetes. Diabetes is nutrient deficiency on so many different levels. We have to start really honing in on replacing the body with lots of nutrients. Diabetes usually results from years and years of eating nutrient deficient food and foods that really mess with your blood sugar. We know that chromium and vanadium are critical for balancing blood sugar. Vitamin D communicates with every cell, and the B vitamins are necessary for energy production. So here on this page, we see just a few examples of diseases and conditions, which are highly tied to multiple nutrients. And this is where the art of natural therapy really comes into play, figuring out which ones to supplement, which ones to use, and what dosages, and of course, that's what we're going to look at extensively throughout this course.

34:42

So a concept we should understand is called biochemical individuality. And it's exactly what it sounds like. It's how we're all individuals. You know, there are over 7 billion people on this planet and there are subsequently over 7 billion unique biochemistries to work with, right? And one of the first people to discuss this was Roger John Williams. He has a textbook that still a lot of people use in reference called Biochemical Individuality. He actually named folic acid and discovered vitamin B5 for the first time. One of his earliest discoveries was, he noticed that he could give alcoholics nutrients, and pretty high dosages, and it would decrease their bingeing. He noticed that you can actually use specific natural therapies to affect a very serious habit or a very serious illness - alcoholism. And he studied nutrients extensively. And what he said was, using these nutrients, like a multivitamin, was a fabulous insurance formula to make sure you cover all the bases, everything from A to Z. And as we go through all of the nutrients, you'll see that each one has a really important role to play in the body. You might even start to think you're deficient in each one - oh, I need that one. Oh, I need this. Oh, I need that one. It's kind of like, when doctors go through medical school, this is a known phenomena. They think they have every disease that they're studying as they go through, because they're learning about them - Oh my gosh, my left arms tingling, maybe I have heart disease or something - they start to get really paranoid. So Roger, John Williams was one of the key players in bringing this idea of biochemical individuality to play.

36:43

Another great character was Linus Pauling. He actually invented the term orthomolecular, which means using the right nutrient in the right amount. And of course, we're going to go extensively into orthomolecular nutrition - how to use the right nutrient in the right amount at the right time for the right person in the right context. We're going to become experts at that. So he brought to the world, this idea of orthomolecular. Not just using nutrients, but using them, like a prescription, using them in the right form, in the right amount for the right



person. So we've got this very specific thing called biochemical individuality, we all have specific needs that we have, and no one else is going to have.

37:42

An example is here with Shaquille O'Neal. He's 7'1"; he's a high performing athlete. His hand is basically like the size of my torso. You could fit a whole family in his shoes. I mean, this guy is a force, right? One of the greatest basketball players of all time. And he really has pretty high demands, I'm sure. And then there's little old me, you know, 5'9", not a high performance athlete. I go to the gym, but you know, maybe for an hour a day, I'm sitting in the chair most of the time teaching these courses or consulting with clients. And what we find is that if we looked at something like the dietary recommendations, for the average male in their 30s, for example, we would find the exact same recommendations for Shaquille O'Neal and little old me, right? Although we might be the same age, we're going to have completely different demands for our body. We're going to have completely different biochemical needs. And oftentimes, nutritional science doesn't take this into account; you know the guides that the government put out and whatnot. We'll look into this in a lot more detail. You've got some extensive charts, beginning on page 25. Talking about the dietary different dietary reference intakes. Well, we'll talk about this in a bit more detail coming up.

39:25

So, we find that two individuals of the same age are going to have very different demands on their body, and we have to cater to that, which is why we have different dosages and different ways to calculate what that person needs. So before we get into nutrient pharmacology and how we use these nutrients, there's a few definitions I want to establish. The first definition here is pharmacology. The study of interactions that occur between a living organism, and chemicals that affect normal or abnormal biochemical function. So another name for chemicals might be information. And we have this information in food, in supplements and all these things that we consume. Even what we see and perceive in the world is information. And all of these are chemicals, or cause chemicals to be released in the body, and then to interact with our cells. And then they create certain messages that tell cells to do different things. These are called different molecules of biochemistry. So that's pharmacology.