Deuterium - Restoring Tissues And Organ Function With Sub-Molecular Medicine Transcript

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Introduction and Background

– Dr. Petra Davelaar I am so excited to have you on this segment of regenerative medicine summit and we're gonna be talking about some fascinating subjects today that that people are going to be really, I mean it's not very well known and it should be well known. So I'm excited we get to cover that in depth today. – Yes, thank you.

Very excited to get into it with you and there's a lot of great new development. So it's fun to talk about them and report these. So yeah, let's get started. – Well let's say, do a little intro of of you. So people know a little bit about your background. Dr. Petra as a naturopathic doctor certified and nutrition and functional medicine.

She primarily practices due to economic medicine and that's what we're gonna chattel a bit more about which is the science of water movement in the body.

She had, she was born and raised in the Netherlands And that that's a reason for her beautiful last name and moved to New York in her 20's. She has spent the last nine years in California where she graduated from Bastyr University in 2016 after four years of seeing patients in Santa Monica.

My old stomping grounds, you know, and I live in Idaho. She currently only consults patients via telemedicine since one January 2021. Her credentials have also been recognized and certified in Hungary, which extends to most other European countries and and that's where you live right now.

Great. – am back and forth, but I spend the majority of time in Europe. Yes, I have to have two. It's been a very good thing for me. Yeah. – Yeah. Beautiful.

Well so so tell me a little bit about you know we're talking about due to economics and and with that we have a substance called deuterium. What what is that and why should people care? – Yeah, great questions.

So water is H20 as we all know two hydrogen atoms and one oxygen atom. And there is a natural occurring twin brother if you like of hydrogen that is called deuterium.

And deuterium differs from hydrogen only in that it contains a neutron and that makes it twice as heavy and twice as large. Now this changes many things it changes the properties of any molecule that has deuterium in it rather than a hydrogen and replaced by it.

What Deuterium Is and Why It Matters

And so this is a fascinating area of research which we call do genomics is to understand how exactly this changes how our bodies function. And so we call that the kinetic isotope effects because um deuterium being attached to a molecule to molecule water and will now integrate into other molecules in our body. For instance if we think about the backbone of D. N. A. that is made up of ribose sugars that have hydrogen attached to it. But if there is a deuterium attached to it instead that will change the shape and the structure and the possible rate at which it can be repaired or not.

And so if deuterium is is taking that position of hydrogen, then we can get a epigenetic type of Um change without any genetic mutations whatsoever. So it's fascinating in that sense.

And then of course you can think about, for instance in cholesterol. So cholesterol atom is 44 hydrogen and 27 carbon atoms. And it is a beautiful double ring structure.

And when sunlight comes onto our skin and um starts giving bio photon energy to the hydrogen bonds and they start to resonate. And that resonance actually breaks open this one bond between carbon seen nine and 10 and it opens up and then you have vitamin D. Now, if there is a deuterium atom attached on that position, um you need much more strength to open that bomb.

You cannot open that bomb. So with that possibly contributes to the low vitamin D. That we see all over the world right now, We think so. So there's many places where deuterium changes completely how we function.

– And I know we're going to get in more into that later on. So just just to kind of for me to clarify, so deteriorate is almost like a hydrogen atom, but it has an extra neutron on it, you know, which just makes it heavier. I mean double that.

And as am I correct with that? – Yeah, it's yeah, so a hydrogen is the smallest possible atom on the periodic table, right? And so that has a atomic weight of one. So adding a neutron makes it an atomic weight of two. It doubles the weight and the size of it.

So that's how you can think of it. And so wherever a hydrogen is in action. So, for instance, our body largely are fueled by the movement of protons. And a proton is of course a hydrogen without an electron.

And so if there is a deuterium there and and the proton tunneling that is supposed to happen, that helps us transfer energy. And and and do so many processes.

There's deuterium that that just stops right there. – You're talking about like like the electron chain transport, you know, and and that's where you have then the hydrogen proton that kind of support the movement of the electrons. Kind of.

So you have these kind of many motors, you know, throughout the whole electron chain transport. And so the the neutron, you know, the extra neutron on the hydrogen, you know, just kind of stops that whole process or interferes with how energy is produced through that whole process. – That's correct.

And you're now specifically speaking of mitochondrial processes and and the the nano motors, the motors are talking about are the nano motors of complex five of the electron transport chain. And that is where we generate a T.

P. And so the protons get shoot out. And as that happens, we generate ATP But first on complex for a very other very important other process happens and that is where we create the metabolic water and that's another unknown um pretty um important process that happens where we produce deuterium depleted metabolic water.

And that water is crucial for many other processes, which I will explain to you shortly. But yeah, so these nano motors are in complex 55. And um if a deuterium atom is being trying to send out its, you can think of it as a rotating motor that goes as fast as 9000 cycles a minute, like a Ferrari engine. And if you all of a sudden put something in there that's twice the size. It just crashes.

And so we have many many of those Nano motors. But if there is a lot of excess of deuterium that will destroy mitochondrial function that's fascinating.

– And you're talking so in essence anywhere there's a hydrogen, you know, we can then see interferences. You know, if there is a deterioration there instead of a hydrogen, like you're talking about cholesterol and being converted to vitamin D. You know, because it's heavy, you know, we require a huge amount of energy for that bond.

I mean, we know we have yeah, big objects, you know that that are kind of tied together that creates a stronger energy. And so now we have to use a lot of energy to break that apart. So anywhere there's a hydrogen like carbohydrates or fats or anywhere anywhere. I mean hydrogen is all over the place.

Deuterium in the Body and Mitochondrial Energy

– I mean our bodies are 70% water. Right? So, so yeah. So to put it in context, if you think of other important biomarkers that we measure, um if we think of glucose circulating glucose for instance, we have 2-4 times as much deuterium than circulating glucose.

If we look at calcium we have five times as much deuterium. If we look at magnesium we have 10-18 times as much deuterium in our bodies. And so we look at these as it's very significant and it's it's completely over overlooked in medicine and we believe economic standpoint, it's the foundation.

We need to understand where this is happening, where we need to deuterium, how we can facilitate optimal functioning of these processes. And that's really what it comes down to.

– So, you wonder also because in I mean, since deteriorate exists, I mean obviously it exists in nature for some for some reason does it serve a function as well? I mean, is it just that we have too much deterium. And but if we have it at a normal amount, it serves a function.

– Yeah, it's actually very important for us. And earlier this year a very interesting paper was published by roman super roof at Karolinska Institute in Sweden, My home. – Yes, yes.

And this is an excellent paper that post very very good questions. And what what super did is he looked at the deuterium content of bone in different types of animals. And he compared the swan to different forms of seals. And he found that the gray seal had the absolute highest concentration of deuterium that was ever measured in any animal tissue And something in the range 340. I might not recall that correctly, but it's extremely high. And that's not a parts per million that we see in any other tissues or in foods or in the body of water that they exist in. So the question was why is it there?

How is it there, what is its function? And so he was very specific. He actually looked at the content of the immuno assets, breakdown of which ones contained the most. And as pro line and hydroxy praline had the highest levels of deuterium loosen was a third lower third but very high for both the prelim and hydroxy praline. And so their deuterium in those connective tissues provide strength. That's what it's doing there.

And so seals of course have to dive down very deep for their food. They have to be able to withstand the pressure of that body of water on top of them.

And then still being able to breathe. And so that's and that is what we believe is the is the reason why these um tissues are so high. These bones of those animals are so high end deuterium.

And it's fascinating and it has great consequences for human health, bone health as well. Right? So for osteoporosis, um, might this also be dude into a mitochondrial dysfunction that bones no longer have the Bill City to place enough deuterium in the connective tissue to maintain strength. I mean, I think that makes a lot of sense. So there's so much to learn and that's where the deuterium needs to be in the right places. Now, exactly what those pathways are that needs to be discovered. We need to understand that better.

But yeah, this is really, really fascinating. – Yeah. And to understand kind of the intelligence, how did the intelligence go wrong than to place deuterium in the wrong locations rather than in, you know, more of the connective tissue where you want that integrity into bones, you know, rather than and you know, in the mitochondria where it becomes almost like dirty oil. You know, it just kind of clogs up the the the engine and you can't you can't produce energy.

So, where where do we where do we find deuterium? I mean, does that, is there certain areas that have more dietary um than others? I mean, I said certain foods.

I mean, how how do we control the amount of deuterium that we eat or drink? – Yeah, great questions. So yes, there is a great variation in the content of deuterium depending on what type of substance you're talking about.

So talking about water. That's one thing. If we talk about foods, that's another um If we talk about water and let's focus on that for a second. So if we look at the center of continents, we find that the PPM is lower, particularly in higher elevations.

And that is because again the properties of deuterium change the rate at that, the temperature at which water is frozen. So it freezes at four degrees Celsius. And so the water that that has has high end deuterium will go rise to the top will freeze and and below that will the lower deuterium water will flow down. So we know from certain areas in Russia and other areas of eastern europe that um have a lower deuterium because of their location.

And those populations live much longer with much less health issues. So it's much higher when you go to the seaside and to the ocean side, the the approximate content of the deuterium. For most drinking water that we are drinking in the U. S. And in Europe varies between 148 and 150-52. It depends and when I say that that I made parts per million. So out of a million hydrogen about 100 and 50 our deuterium atoms.

And so if we look at foods, then there is a very different hair arche. So fats are actually natural fats I have to admit point out natural fats are much lower and they are the lowest of all foods in deuterium coconut is particularly low but also a very good um butters or pork fat or particular fats from cows, whatever. Animals have lived a life that was respectful of their habitat and their diets, those those produced the best fats and the same for their animal protein. So that again and that will be the next level. So the lowest would be fast.

Then you have your highest quality animal proteins that you can consume. And then all of the green vegetables are next because the process process of photosynthesis is also a depleting mechanism. And and then you start getting hitting that that sort of point of of where the levels of water is.

It's the same about 150. What's interesting for instance about coconuts, the coconuts, fruit places their deuterium in the water.

Where Deuterium Comes From in Water and Food

So coconut water is actually one of the higher higher deuterium foods that you can drink 160 I believe is something to that extent. And and then you have grains that are higher and then you get the processed foods and the modified facts and um genetically modified organisms all of those are much higher in content. – So it almost then proves or kind of points towards you know the ketogenic diet.

You know some of the reason why that has is beneficial. People dealing with like cancer or whatever it may be because of the low deuterium content in that type of a diet, then it sounds like. – That is correct.

That is why the ketogenic diet works. There's no doubt it's absolutely the case because that provides the substrate for these important biochemical processes that keep deuterium out of the mitochondria. So if we think about for instance, glycolysis and the T. C. A cycle, they have many steps and glycolysis has about eight steps and that removes almost on every step there is a water exchange reaction. And hydrogen gets replaced to make sure that there's no deuterium left on it and that we have hydrogen before it goes further down the biochemical pathways. And um fortunately the research of tracer based metabolic comics has identified for us the very specific positions on the sugars where these exchanges take place. And so we know that from black Wallace's and we also know that from the T. C. A. Cycle. So there's eight and Semitic reactions in the T.

C. A. Cycle. And three of those replace hydrogen is with water from hydrogen is coming from water that is the metabolic water produced by us. And again, to make sure that this there's no deuterium coming into the mitochondrial matrix.

And if one of those enzymes is impaired either for overload of toxins or a possible genetic variation which are extremely imp important for mitochondrial enzymes.

This starts to back up so there's not an efficient clearing of deuterium. The enzyme metabolites start to rise. And you can see that an organic acid tests and um the only way to overcome that is stop the deuterium from coming in

and slow that down so you can maintain mitochondrial function or reverse any damage.

And the new mitochondria that you create are now functioning again. And that's why depletion is so important so that we can restore tissue function and organ function. And um that's been shown to be possible in the research but also in my clinical observations I have seen really very very beneficial effects of depletion.

– It's fascinating. So just for for the listeners. So like Allah assists and T. C. A. You know that that relates to energy production within the cells. – Yeah it's a breakdown of food really is the breakdown of foods that we consume for the production of our energy for that's that's what it is. – And the enzymes involved in that are obviously are crucial to be able to break down that food.

And so you want them to to look right to be through three dimensionally looking okay. And if they aren't then what you've done is that you've used up a lot of energy to produce these enzymes and then you have to use a lot of energy to get rid of them.

And so you had no net benefit but you just only had expanding energy so that's why deteriorating deplete. I mean make sure that there's no deterioration.

That process becomes so important because you you spend so much energy trying to produce something that doesn't benefit you. – Yeah, I mean then it just goes a step further, particularly in the T.

C. A. Cycle. If there is this interruption of these metabolites, what you start getting is it reverses the cycle reverses, you get metabolic crowding, you get the Warburg effect.

That's the devastating piece of of this. If it all goes wrong, if there's just an excess of deuterium. – To explain metabolic crowding and Warburg effect.

– Yes, those are big, big words. So um so because these metabolites are not being able to go down these very very important pathways, it's it starts to back up and they need to go somewhere.

So you get branching. So they come out of the cycle and they go different directions at alpha kate, obliterate or as accelerate city, they go in other directions. And if it happens in certain positions it can start function functioning as a substrate for DNA synthesis.

And that's not what we want or it can go back another direction and trying to create essential fatty acids for us. But that's not possible. So that gets stopped and so ultimately we start reverting to using glucose for energy production because the T. C.

A cycle is no longer being able to produce it from fatty acids for us. And that is known as um the Warburg effect when we are producing when we're using glucose in the presence of oxygen. And this is what's caused by the metabolic crowd. – Mhm. Yeah. And that's you know, with the Warburg effect. You know, we you know, we look upon that as a big reason for you know how cancer cells or how cells, you know, that become cancers, how they produce energy.

And so obviously we want to avoid that in any possible way. So so deterring them plays a huge role in moving that process forward towards, you know, making a cell function like a cancer cell.

– That's right. And it's and you know, cancer is only one of the manifestations of this metabolic crowd. And you know, it could be neurocognitive decline, it could be diabetes hypertension.

It sort of depends on your particular susceptibility for any of those, you know, dysfunctions. – So tell me a little bit more about that. So one with deuterium and what are some of the diseases that it relates to?

I mean obviously we talk about mitochondria and how we produce energy and and I would assume that relates to everything, but are there certain ones that really are susceptible?

I mean certain diseases that really strongly correlated with this?

Ketogenic Diet, Metabolic Crowding, and Disease

– The first one would be cancer we know that for sure because that's really also where the most research has been done. But it's any mitochondrial dysfunction.

And as you know, 85 plus percent of all chronic diseases due to mitochondrial dysfunction. And so it's examples. Okay, I'm gonna give you a couple of clinical examples.

So you can put it in in context, for instance, secondary aim honoria. This means a young woman who previously had a perfectly normal regular cycle all of a sudden her menstrual cycle stops for a period of 18 months, let's say. And so she gets assessed for all the possible reasons why. I ended up including a deuterium test and we looked at her tissue levels and her saliva levels and they were elevated for someone of that age. And her straddle was at that point when we measured less than five, so that was the level of a postmenopausal woman.

And so she was 20 years old. There was no reason for it. There was none of all the differential diagnosis that all of those pieces we looked at, none of them applied. And so I placed her on a determined cleaning protocol. And that included determined pleaded water as well as the diet. And this was challenging because she was in college. But she did it and a month later we had an extra level of 40 and six weeks later she had her first period and at two months interval.

We had a level of estrada of 120. And so her cycle came back and it was restored ever since. So that's one example. Then there's another… – Let me just stop there because that is fascinating.

So you're you're telling me you didn't add any hormones, any by identical. You didn't do any of that. Put her on a deterioration depleted protocol which included, you know at the deterrent depleted water.

And just from that alone, her estrogen rose to normal levels. – Yeah. Well I do want to point out, we did challenge her with high dose progesterone first to see if we could get anything.

We literally I tried everything in the book that I was taught by my different education processes and we did them all. And so then the final stop was like last.

Sorry second. You know you have hypo was an idiopathic hypothalamic game and this um Andrea and I was like yeah we're the idiots that can't figure out that had to be a reason they're there is that we've got to figure this out.

So I figured let's do it. We're gonna go for depletion and it worked. – That's amazing. And how did you, so how do you measure you measure your tissue and saliva? So you can actually then measure your deuterium level to see where you're at. – Yeah. So I don't know how available currently the breath samples are. Hopefully you will have those at some point again. But the saliva measurements can be done by Quicksilver Scientific. You can buy the test online.

Anybody can just order that and you can also test your water just sending your little tap water samples. So you know and that gives you an indication of what how your body is handling the income and deuterium and how well you're able to excrete it and how high those levels are. So ideally they are in the lower 101 thirties or you know, but therapeutically we really want them under 100 and 25. That's hard.

We have to work on that because so much of the water that's coming in is at 150 the foods can be high. So then there's all the lifestyle pieces that play a role for you doing order that that that help you excrete the excess levels and a lot of us are not living in that way anymore. We're inside, we're on the fake life were on the computer, we're not moving we you know you can go on and on and so all of those factors play a role with that.

– Okay, and obviously hormones you talked about, you know deuterium hormones start like steroids, you know, so you have all little hydrogen that's part of that kind of fatty substance and so if you have deteriorated inside of that

and that will interfere with how those hormones function.

So. Okay I apologize 2nd. – No it's okay, it's okay. And then there's a case of seizures. This young woman, again in college, she needed 14 hours of sleep.

She had 40 to 50 seizures a day that was really interfering with her lifestyle, as you may imagine. Couldn't drive a car, couldn't hang out with her friends at night, you know, on and on, couldn't study.

And so we did the same, put her on a strict ketogenic and determined depleted water plan and within egg weeks, she was sleeping only 8 to 9 hours a night, Seizures dropped to five a day. And then with ongoing additional therapy, she did, she became seizure free. So, you know, that's another one. Then there's a six year old male who came to me and thought, oh my God, I have young twins, I'm losing my mind.

I'm forgetting my wife. She's, I'm driving her crazy, what do I do? And so did the same thing with him and about 10 days later I got an email thanking me profusely saying that he had his brain back.

So it was that quick. – That's incredible. And that's just using a deuterium depleting protocol. – So yes, but also the lifestyle piece, right? I want to be clear about that.

So, there's so many pieces to it when we sleep. We deplete deuterium, so sleep hygiene and always is crucial. So there's so many parts to it. It's not just the water, but food for sure is one of the most important pieces.

– Yeah.

Clinical Cases and Deuterium Testing

So we went through the food, we went through the water. So they're actually deteriorate depleted water that people can buy. Right okay. So when when you go on these protocols then you it is good then to introduce and deuterium depleted water and it depends you should do that kind of slowly or quickly or do you have negative side effects from doing it too fast?

– Yes you could. So first of all, there are some spring waters that have a deterrent content of about 100 and 40 PPm. So that's already a lot better than most people's tap water.

Then I believe there are a few waters that are even lower. But again you should you should always test it. The deuterium depleted water is um it's water so it's very heavy and it's being shipped to you. So it's being sold in very low concentrations 5, 10, 18, 25 PPm.

So none of those waters should be drank straight up. So any concentration below 50 can actually cause something called isotopic shock. And you have an effect. And yes that that could you feel it, you would definitely risk a heartbeats, increased heartbeats, um issues with your gums, all sorts of things. So it's not a great idea to do that.

What do you want to do? And it really depends on how much water you drink what your medical condition is, what your weight is. And then come up with a good starting point to deplete your deuterium level?

So sort of a wellness concentration Would be 125 ppm. That would be great. But a starting point for a more um heh complicated medical condition, you would maybe go down to 105.

But then if someone is heavier in weight over a certain amount of weight then you want to perhaps be even a little bit lower. So there's all these considerations to be made starting a protocol like that.

– And so if somebody is dealing with like cancer for instance. Yeah. Which obviously is a, you know it's a big issue. So then you would start with maybe like 100 or 95 or I mean where would where would you start? – I have used the intervals that were first written about and used by Gabo [inaudible] who is the Hungarian PhD in Budapest and who also started later on producing some of the determine depleted water. I he drops down at 105 to 85 to 65. There is

a 45 and he also uses a 25 that's being sold for veterinarian use. But yeah I generally started 105 but again this depends on the weight of the person, the amount of water day drink and also the condition that the the type of cancer they may have.

– And how much of this should they drink and how much water should they drink. I mean, what are in your point of view? I mean, because it almost sounds like if you drink a lot of the normal water, then you are actually adding deuterium to your system when you're trying to deplete it and using the deuterium depleted water. So, what should you do, kind of, what does she look, what should it look like in a day?

– So, I ask, my patients to, first of all, reduce the amount of water that they are drinking. I think there is a great marketing scheme going on where everybody is being told that they have to consume half their body weight in ounces. And there is no biochemical biophysical justification to make that recommendation. And if you drink too much excess water, you will also slow down your own metabolic water production.

And we want to encourage that. You also will slow down anti diuretic hormone. And you will suppress that because so much water is coming in. You know, you're not required. You just need to go and, you know, urinate. And that's it.

But again, an anti diuretic hormone has many other effects. And it also governs gonna trophic releasing hormone. And so if you suppress 88 you suppress that hormone, you suppress your steroid hormones.

And that was by the way, another key in this secondary manner a case that young woman was drinking a lot of water. So reducing that down can make a great difference. And then and slowly.

Right, I'm not saying just one day have put it in half because that's gonna, you know, you're gonna feel that but go slowly and come to an area where that's good for you.

I'd like, I also asked them to replace the water that they used to make coffee or tea with the determinant of water and don't drink anything else. Beyond that. So that gets a little restrictive for some, but it's manageable. You can bring your water bottle with you and just, you know, make sure that you sit from that and not from the restaurant water or whatever.

And yeah, that's really how to approach it. And then depending on like in your condition, how long you do it, how long you stay that PPm If it's an ongoing process, you may want to drop it down after a period of 6 to 8 weeks.

And see where you where you are at and you know, once you've depleted deuterium, you can then look again and see what's left. What else do we need to address?

Let's see where the bio Marcus went. Let's see what your blood tests look like. Let's see what your symptoms are like. And and then start focusing in on targeting those symptoms that are still persistent?

– So you talk a lot about metabolic produced water or metabolic active water, what what was the term? You're using metabolic water, metabolic water. So that's something that the body then produces itself. And how is that different from other types of water that we drink? Why?

Why is that so important? – Yeah. So this water is produced by our cells and in the mitochondria in complex for um and this water is deuterium depleted. And this water is what we think of of structured water or inter facial water. You've heard those terms as well, right? Those in the body.

That's the water where all our cells and tissues are based in this type of water that has a bit of a gel like structure to it.

Deuterium-Depleted Water and Dosing

And the viscosity changes if there's too much deuterium in that. And infrared light for instance, makes it less

viscous. So that's why infrared light is also so functional for that.

But this metabolic water, the quality of it and the determined content of it determines how well you transfer information and energy between cells and tissues. – Yes. Yes. And this is produced and by processing things like fats and proteins, you know, breaking that down.

And then so we actually make metabolic water from the food substances. – That's exactly correct. So you can think of it as a camel, right? A camel carries this fat hump on its back and that's how it's able to survive in the desert and it breaks down fat to produce water for for its own body and that is what we do.

And so if we look has been stuck, he's done that looked at how much water we produce of 100 g of fat and in fact you produce 100 and 10 g of water from 100 g of fat. If you take 100 g of carbohydrates, we produce 50 g of water.

So it's a very different process. So that's why again that ketogenic diet ease that that by fats are good for you. Natural, beautiful clean facts are a good thing for us. That's like putting the highest grade um fuel into your Ferrari engines basically. That's how you can think of it. – And are there, so we talked a lot about food, other herbs and lifestyle habits that one can have that will then maximize the depletion of deuterium so we don't have such high levels?

– Yes, there absolutely are. So you first asked about herbs. So let's let's take that one on. Yes. So there are very specific herbs that we know are so crucial for us because they are deuterium scavengers if you will.

So herbs like all of leave or dandelion or cilantro or parsley they're very high in specific binding sides to to bring in hydrogen and pick up deuterium and take them out.

They literally clean it out. So we know this from studies that were done on fan foreman. And that was a drug use in cancer therapy and it worked very efficiently. The authors of the papers that published them just did not understand that it worked so efficiently because it depleted deuterium in very specific pathways. But it was a metabolic drug not a cancer drug which is very interesting.

So there's papers on that they're beautiful and yeah so herbs are very very powerful for us because as Stephanie said it has said the name of the game in the body is to get rid of deuterium. We have to get it out in any way you can in any spot to make sure it doesn't get into the mitochondrial matrix.

– And glyphosate obviously I mean that's another one that she goes after quite a bit interferes with this process a lot. Absolutely. It also prevents the depletion mechanisms that would normally function perfectly fine because of its presence.

Yes it alters all of the reactions. And particularly with NADH. That's a big piece of it. – How can NADH, what does that do? – It's in mitochondrial enzyme that helps again transport certain nutrients from one spot to the next and we we need plenty of it and we needed to function well. And there's a lot of interference that happens when when glyphosate gets part of this picture.

– Okay so it interferes, yeah because I mean in NADH, or N. A. D. You know that you can answer I. D. S. Or sub Q. Or whichever way um is known as kind of like an anti aging.

It's now this anti aging, you know rage where we want to live as long as possible and maybe play a huge role in that. And then the glyphosate and interferes with that process. You know how we produce energy in which will then obviously impact the deterrent as well.

Metabolic Water, Lifestyle, and Environmental Factors

So so with with lifestyle I mean you know you mentioned that we you know sitting in front of computer and being inside it is not really conducive for deteriorate depletion. So what what should we do?

– We need to be outside and we need to you know when you and I talk you know these kinds of things on to just kind of make sure we protect our eyes. – I love it.

So these are your amber glasses. – Yeah I have my amber's I have my reds for when it gets yeah when it gets at night time we protect I have my infrared light here at night that I put on um to kind of balance out the spectra candlelight in the evenings.

Try and get away from the the L. E. D. S. And all of the fluorescent lights their disaster as we know they just destroy our melatonin production and um that's producing for the majority of mitochondria as well.

So it's extremely important. So that's one piece manager light environment go out in the daylight ideally you go out in the mornings before nine a.m. You get some real light into your eyes, into your pupils to set circadian rhythms to adhere to those. Um make sure that the food you eat is grown locally so that the light information to bio photon information of food you consume is the same as that you ingest and that is on your skin.

Your your digestive system has all sorts of ways of knowing exactly and you want them all to be incoherence. That's really important. So that piece I think it's very useful to focus on movements on whatever you is a form of movement you like.

Whether that's skating, whether it's swimming whatever you walk. All good just do it dance. And bodywork is great. You know massage acupuncture to just move any kind of energy and and lymph fluid is excellent, breathing exercises, breath work.

Jim hough methods. The Butenko method. All of those they deplete. So if you think about how your body gets to tear him out it's through um your urine and your stool through your tears through your sweat through your breath. And all of those need to be you know optimized so that you can let go of and not get things in the U.

N. Stock. Does that make sense? – Yeah. Absolutely. I love so I love what you said with the foods. So when when they grow organically out in sunlight.

I mean obviously they will then absorb a certain a different type of vibration than it would if you would another type of environment. And also you don't have the chemicals and interfere with that vibration.

The natural vibration. So it's not only kind of the chemicals in the food it's also that it alters the vibration of the food and when you eat food that is you know is altered. The vibration is altered then interferes with how we naturally should vibrate. – That's right.

That's right. And then there's a new aspect that has just recently come to my awareness that it's the effects of the electromagnetic frequencies that aren't just affecting us too. Right.

And that's another important piece and we haven't touched on that. But I ask my patients to mitigate all of those exposures as well. But the foods that we eat are being exposed and that creates a whole different chemical structure into plants as well. So that brings out the turbines that brings out why so many crops are are are not able to withstand the dry periods anymore.

They just dry out drought. The fires we had in 2018 in California where things just went up like that and that's because of the extra noise in them. And so the food is different for us. So we have to think about that too.

So there's yeah there's a lot to consider. – Yeah, so many implications that take place when we think we're doing things more efficiently and smarter, but we're stepping away from nature and all of a sudden we create things that that has consequences that now we have to dress and if we just did it the way it was supposed to we didn't have to deal with all these consequences. Yeah, well, Dr. Petra it is such a pleasure. I mean this this is such a huge topic and it's something that I don't feel is being discussed enough and and I'm really glad that you're bringing, you know, helping to bring this to the forefront so that people can understand the importance and also how to implement it in their own daily lives to to maximize how they feel their end.

Because this is not just for disease prevention. Yeah, it is, or just for disease or disease prevention, this is for optimum living. – I have to say that's my favorite patients that come to say, what can I do to stay healthy, you know? And that's it.

This is a wonderful way to do that to keep all these considerations in the back of your mind when you decide what you're eating that day or how you're going to spend your your your days and weekends. So yeah, prevention is key to all of it.

But yeah, thank you. I'm so happy to talk about it and stay tuned because there will be more coming every day. We find another piece of the puzzle that's fascinating. – So, and where can people go for resources to learn more? – Yeah, so actually do genomics is now being taught in is now being taught at the Free University, which is the University of Amsterdam and is called the Sub Molecular Medicine of course. And that will be in January of 2023 my website has a lot of information on there as well.

It's drpetrad.com. I recently put up a some some more interesting videos that explain some of these mechanisms in great detail with images that my beautiful daughter design. So it's very very helpful to kind of look at it that way. So if you are interested please take a look and and learn more about economics. – Thank you so much.

Thank you. – Thank you.