Are Some Of Your Hypothyroidism Symptoms Really Symptoms Of Nitric Oxide Deficiency? Transcript

(Transcripts are generated by AI and may contain errors)

Introduction and thyroid health mission

Hi, I'm doctor Kelly Halderman. I'm a former medical physician and author of The Thyroid Debacle. I'm now devoting my life to education, research and biotech because I realize we need educated people to bring us cutting edge information, especially when we find ourselves with a diagnosis such as hypothyroidism.

When I was practicing allopathic medicine, I myself became very sick, bedridden with what would be diagnosed as Lyme and mold infections. Along my health journey, I was also diagnosed with Hashimoto's thyroiditis, a condition I was told that could only be managed with medication.

Well, I'm here to tell you that there is more than medication to help you, as you will learn through my powerful interviews with several functional medicine practitioners.

There are tools that will help empower you to take charge of your health. Join me today as I interview leading doctors, naturopathic specialists to uncover the most useful health insights for you.

This podcast has been launched in collaboration with Doctor Talks. Visit them today at Doctor talks.com. Backslash Calendar to learn more about their upcoming summits.

Hi everyone. This is Doctor Kelly. Welcome back to Doctor Talks where we're continuing our series on thyroid health. Today we have a very special very knowledgeable guest, Beth Shirley.

Welcome, Beth. Hi. How are you? Good, good. I am so excited to have you on. You are a wealth of knowledge and to start, let's talk about your background.

Let's talk about the practice that you have right now and where you are currently. Well, I'm I'm a pharmacist and a certified clinical nutritionist. So I went into pharmacy thinking I was going to be helping people.

Then after being in it for 20 years and people come back sicker and sicker on more and more drugs. In 1997, I became a CCN, so I became the pharmacist to go to if you wanted to get off drugs or not even go down that road to begin with.

And so I've been helping people like, nutritionally with their health. And in 2009, I became really interested in nitric oxide and started down that road.

Beth Shirleyu2019s background in pharmacy and nutrition

Because nitric oxide is a molecule that touches every single physiological process. So it's the base of all healing. Okay. Yeah, that's really interesting.

I know that you've just skyrocketed in your depth and breadth of knowledge in nitric oxide. You're my go to. You are you are several several high level doctors go to.

And when discussing nitric oxide, you put in the work, you do the research, you make, the ties. You know, tell us about you know, you told us about the molecule.

Tell us a little bit more how it acts in the body. Like what would someone who has symptoms of low nitric oxide, what would they be experiencing? And then go into the why and to marry those together.

Okay. Well, nitric oxide governs circulation and micro circulation. So micro circulation is where all the magic happens. That's where all the exchange happens.

The oxygen, glucose, nutrients and just as importantly, the debris to be carried away. So that's how it touches every single physiological process. Every cell cannot be more than two cells away from a functioning microscopic biliary.

Or there's dysfunction and cellular death. So keeping those micro capillaries happy and functioning is the base of all our healing okay. And so micro circulation I you know, as a former physician think of think of circulation in terms of, you know, heart disease, I think in terms of brain function, erectile dysfunction or those some kind of the top things, red flags people will notice as they start to have nitric oxide issues.

One of the first signs with men is actually erectile dysfunction. If you see erectile dysfunction, you know you've got dysfunction in those micro capillaries.

But hypertension is one, diabetes. Insulin resistance, not being able to heal the brain function. Cognition. Because our brains, even though they're like only 2% of our body weight, they require about 25% of our oxygen consumption.

So that means those micro capillaries have to be open and be able to deliver that oxygen. And the hemoglobin has to have a nitric oxide attached to it in order to be able to release that oxygen.

So you could be supersaturated with oxygen. And if you don't have enough nitric oxide, you cannot release that oxygen to the cells. Wow. I didn't know that.

That's that's extremely, relevant to the entire human body. So you said that there's a lot of diseases that you just mentioned, hypertension, diabetes or dysfunction that are ubiquitous.

And so you look at all these disease processes that have that nitric oxide plays a role in. Why are we so nitric oxide deficient. Are our diet okay. A standard American diet devoid of nitrate rich veggies and essential cofactors and nutrients? Age.

By the time we're 40, our ability to make nitric oxide through that not pathway, the nitric oxide synthase pathway decreases to about 50%.

Nitric oxide basics and circulation

By the time we're 60, it's only functioning about 15%. So that's why it's so critical to support that. Nitrate to nitrite nitric oxide pathway. So, drugs, antibiotics and I depressants birth control pills.

I mean, that's why they don't like women over the age of 35 taking birth control pills. And especially if you're a smoker, entered PPI. PPI interfere with the production of nitric oxide through both pathways.

Emfs were swimming in the sea of EMF. Pollution. Glyphosate, genetic snips. And not just your non snips. Like anything that increases oxidative stress, your sod kind of lives heavy goods and in anything that interferes with the production of before.

Like your EPR for if you have any more HFR snips, you are by definition nitric oxide deficient. And that's about 40% of us. And the big one stress stress on couples that not enzyme stress.

What I mean by uncoupling is, nitric oxide. The Not enzyme is a dimer. And that electron is handed down from nADPh through your flab and on to arginine to make nitric oxide.

When not when not is uncoupled and buffers what couples not, it hands that electron down to oxygen and makes superoxide. So an uncoupled not becomes a superoxide generator, not a nitric oxide producer.

And all of those things I talked about actually, couples novice. Okay. Definitely. There's, a lot of everything that you just said. You know, all those processes from snips to stress.

I mean, we have it all. We have multiple things. So it's not just one thing that's uncoupling it. And I, I think that, I would love to just get your take on people taking arginine then talk about, oh, I have low nitric oxide.

I use one of those strips to test to see if I have light. I'm going to take RG talk about that. I'm not a fan of using arginine for anybody over the age of 40 or anybody with any chronic issues, because, you know, they're not as uncoupled arginine can go down multiple pathway.

It's not just the NAS but you're feeding somebody arginine and they're not as uncoupling coupled. You're actually increasing oxidative stress. You're increasing the production of Adama which is connected to all cause mortality.

You're increasing ammonia. You're increasing urea. So no, I mean, citrulline might be a little better than arginine because the cell will take up citrulline to make its own arginine to feed the Nash.

But you're still trying to make a dysfunctional, uncoupled Nash work, and it's just not going to. Okay. So most most of the tests that the the studies that I've done using arginine to increase nitric oxide were done on young fit male athletes whose nossas coupled right.

Who's yes. They're definitely not uncoupled. Okay. Very good. I wanted to get the opinion from the expert on that one. So let's move on to nADPh oxidase.

What is that. And let's tighten the thyroid health because that's the the underlying topic of of this serious thyroid health. We well nADPh oxidase is one of our enzyme.

So is only job is to make superoxide. And so it is used to to like for an antimicrobial okay.

Signs of low nitric oxide and common deficiencies

However this enzyme gets upregulated by numerous environmental factors like mold, oxalate, chronic inflammation upregulated it. Stress, homocysteine, like EMF.

That's how EMF causes a damage. It up regulates this nADPh oxidase, which increases oxidative stress. However, when this nADPh oxidase is upregulated, it will preferentially steal that nADPh from other necessary processes in our body, like making making our steroid hormones detoxification, recycling our glutathione.

You can't recycle your Bluetooth. I am plus nADPh is needed for that, not enzyme. And all these environmental factors are upregulated. This nADPh oxidase in the thyroid there is a couple nADPh oxidase enzymes called do OCS one and do OCS two.

And these enzymes make the superoxide. And then the hydrogen peroxide, which is connected to thyroid peroxidase. So this enzyme needs a certain amount of hydrogen peroxide.

Not too much not too little for that to function. But when that nADPh do, OCS enzyme is upregulated by all these environmental factors. There's too much.

This interferes with the thyroid function. So we all know like the cold hands, cold feet are representative poor thyroid function, but actually it's a nitric oxide deficiency because oxidative stress superoxide uncoupling that nice enzyme.

So you're making more superoxide plus you're up regulating those enzymes so that nADPh oxidase is stealing that nADPh out. So these cold hands and cold feet is poor circulation.

Nitric oxide deficiency. So even by supporting that nitrate to nitrate and nitric oxide pathway is a good, way to

support your thyroid function. How often do you see that link together?

Like, oh, I have a diagnosis of hypothyroidism and cold hands and cold feet that it's sometimes people have it, but certainly that's not the only symptom like right.

But I'm thinking like back historically now and I'm like, oh, these must go hand in hand. These really do. They're biological processes that go hand in hand.

And that's really interesting because when we think about thyroid physiology, we're trying to fix basically the cell danger response. And you know, we're trying to fix and correct the cellular hypothyroidism.

But I think nitric oxide doesn't get the it doesn't get the appreciation doesn't it. All that it deserves in in this biochemistry and you're you're really uncovering that part that we're missing.

And would you refer to that as the, when you were talking about the, the pH, the NOx, or it was referred to as the knock sometime when it's upregulated, is that what that is referred to as the nADPh steel?

Exactly. Exactly. Okay. That it's just so upregulated that it's been taken away from this. Right. And that's the electron donor for the not enzyme. That's what helps recycle our glucose iron that takes the oxidized glutathione on to reduce Bluetooth. I'll you know, that's a that's a critical electron donor molecule.

Absolutely. But also if if you've got like a nitric oxide deficiency and you've got impaired circulation, micro circulation, it doesn't really matter.

What else you're doing is not going to get to where it needs to go. So it it's it's the base of any therapy. I mean, even if you're doing like, thyroid replacement, you've still got to have that up optimal circulation and like circulation or this little molecule is going to get to where it needs to go.

Just brings to mind therapies such as the the Beamer mat. And so how it's supposed to up regulate micro circulation.

Why arginine is not the answer

But what you're saying is that inherent to that working, you have to have that nitric oxide in order. So that makes perfect sense because some people it works really well for other people it doesn't.

Yeah. It there's only two ways we make nunchuck oxide is one is through that nice pathway that's so sensitive. It's also like dependent oxygen dependent.

And in any chronic issue you're more acidic. So it's going to uncouple that enzyme. Or you can support that nitrate to nitrate to nitric oxide pathway.

There's only two ways to make nitric oxide. So I've got some some Beamer friends. And I make sure that they're optimizing that pathway before they use this.

And their results that they get are just phenomenal. Yeah, I can see why. I see why it's important to definitely optimize your nitric oxide before doing that type of therapy.

So let's talk a little bit about fluoride since this is a thyroid talk, I know you have an interesting an interesting take on on this and nitric oxide and bringing it all together.

Right. Well the fluoride we all know is a thyroid toxin. So it it's in the same like, valent as iodine. So it will fit into that, that thyroid and the thyroid, you know, like where we need the thyroid but the, the, the fluoride interferes with the nitric oxide to.

The I'm just, you know, but fluoride also is an anti-microbial. So when we're supporting the nitrate to nitrate to nitric oxide pathway we consume the nitrates.

They get absorbed, they circulate around, they get concentrated in the salivary glands. The salivary glands release the nitrate. We've got good anaerobic bacteria on our tongue that we reduce that nitrate to nitrite.

Nitrite is your nitric oxide donor molecule. So we swallow the nitrite in the acidic environment of the stomach. Some of that nitrate gets reduced further to nitric oxide.

But most of it is. So it's absorbed circulates around. And we've got different, enzymes in different tissues that can reduce the nitrite to nitric oxide.

Like the muscle, the myoglobin can reduce nitrate to nitric oxide. And when you're exercising, you need more things delivered to your cells, your neural globin.

When you need to, like, open up your, you know, your brain when you're thinking because when you're thinking it, it lights up. Parts of your brain uses more the electron transport chain when it starts making too much superoxide, nitric oxide can be produced from nitrite.

NADPH oxidase, oxidative stress, and thyroid function

Your complex for life. But fluoride is an anti-microbial. So when you're using fluoride toothpaste, you're drinking fluoride water. You're disturbing your oral microbiome.

And so you're not allowing that nitrite to nitric oxide pathway. So any disturbance of the oral microbiome will affect that pathway. Antibiotics. The fluoride mouthwash hydrogen peroxide whitening toothpaste smoking vaping.

Yeah. All those as well. Well that that's really interesting. And I always, think of you when I see people mouth breathing go into the, go into what happens when we're mouth breathers and what's supposed to happen in our nasal passages when when you're mouth breathing, you're destroying your oral microbiome.

We're supposed to be breathing through their nose, and in fact, breathing through your nose supports that nice pathway that supports the production of nitric oxide.

So many people actually tape their mouth, you know, at night while they're sleeping, you know, because that's eight hours, eight hours of pure nitric oxide production.

And so we, you know, we just wrote that book, The Thyroid debacle. And in it we're like, try some mouth tape, try and see at night time. You know, I have an oral ring where I now it measures my oxygen saturation and of course my sleep numbers.

And I noticed that when I started melting, I didn't think I was a mouth breather, but when I started mouth taping, certainly every number got better, you know, keep you keeping that mouth, mouth shut.

And it's just so interesting that because it just comes back to a lot of foundations, foundations of health, because you talked about the microbiome in our mouth, having that power to really activate the nitric oxide, the the microbiome itself, go and go in a little bit, back up a little bit and talk about how precious again, you nailed it with everything that's destroying that stress toxins.

Life is say you know, antibiotics go back. And can you review how when when we're actually eating nitrates how that works again, the nitrates are really pretty special molecules.

So when you consume nitrates they support every single microbiome in your in your body, from your gut to your oral to your skin to your vagina to your brain.

Everywhere you've got a microbiome nitrate supplementation or increase in nitrate, foods supports those microbiomes. So also the nitrates help repair and protect tight junctions.

This helps repair like, this helps repair the, tight junctions in the gut. But how about your blood brain barrier, your tight junctions and your your blood brain barrier?

So everywhere you've got a tight junction, protein nitrate support that. Wow. And I'm sure a deficiency will probably lead and lead to the compromise of those tight junctions as well.

And so we just we like you said, we inherently need to consume this type of food. So let's go into some strategies. So first I think before we talk about strategies just being aware of this and making these types of even with people with hypothyroidism that some of your symptoms could be coming from, of course, cellular hypothyroidism.

But this the other pathway, this amazing molecule, I think the Nobel Prize was awarded to the person who discovered nitric oxide. So talk about talk about that about how that works, how we can support it.

Yeah. Like how we can support it after we're aware that this has some sort of ties to perhaps the symptoms that we are experiencing, you know, from the brain fog.

Because I think, like once you get a diagnosis with hypothyroidism, everything is put on that diagnosis, everything that's wrong with you. Mood issues, skin issues, constipation.

Well, you know, like, fatigue. Everything is pinned on the function of the thyroid gland. Then you start looking at labs and let's say you optimize those labs, but yet you still don't feel right.

You still don't feel right. Exactly. This could be the huge missing piece. And so the let's let's riff on this for a little while about again, awareness that there there's this missing piece.

What can a layperson do. How do they you know again there's signs and symptoms which you talked about but they seem so ubiquitous.

Fluoride, mouth breathing, and the oral microbiome

So optimizing a pathway especially exactly ubiquitous and ubiquitous, especially for people, like you said, over the age of 40 and 60, I'm like, whoa, this.

I mean, we all need to pay attention because it's just this is a natural progression. I don't care how healthy you are without the saying. What you're saying is that this just naturally starts to decline.

So we have to start being aware of this right now. So, go where you need to go with that, okay. And stress. Stress is huge with thyroid function and the adrenals like when the adrenals are off, your thyroid is off. Yes.

And the adrenals need adequate nitric oxide in order to work. And when there's a nitric oxide deficiency, actually the adrenals aren't functioning right.

And so for that I mean that's that was a mic drop right there for you. Beth, I kit you good. Yeah. But supporting the thyroid and giving somebody, you know thyroid replacement and things like that.

If the adrenals aren't right, right. Somebody is not going to their numbers might be better. You know their labs or blood labs might be better, but they're not going to be feeling any better because it's not getting to where it needs to go.

Right. And so this cortisol from the adrenals actually, interferes with the production of nitric oxide through both pathways. So that's really important like when it interferes with the illness.

So that means when we're stressed we get sick easier interferes with Inos endothelial na. So that's why when we're stressed we have more hypertension more strokes Maremma B-minus and stress changes our microbiomes.

So by supporting that nitrate to nitrate to nitric oxide pathway, either through increased nitric, nitrate veggies like a rula has the highest nitrate of all veggies.

Plus, there's not an issue with, oxalate that you get through a lot of the other high nitrate veggies like spinach, bok choy, butter lettuce, celery, beets, all of those are actually high nitrates, but they do have some oxalate issues to them, you know.

Or you can you can choose, you know, like a nitrate based supplement to help you like studies show it takes 300 to 400mg of nitrate per dose to get the the beneficial physiological actions, like a decrease in your blood pressure or an increase in your exercise endurance.

And that's equal to like five ounces of spinach or seven ounces of beet. The the Dash diet the Dietary Approaches to Stop Hypertension. This diet is used as medicine for cardiovascular disease, and it's got 12 to 1500 milligrams of nitrate per day.

And on average, the US we have, we eat about maybe 100, 150mg of nitrate per day. So we're not getting enough. Wow. And for those who are not aware of oxalates, can you just give an elevator pitch of what those are?

They're really sharp little molecules that get into the cells and cause pain and discomfort. I mean, if you look at them on a, like, magnifying photo of them, I mean, you look at them and you think, oh, my gosh, no wonder that hurts so bad.

Like, people have joint pains, muscle pains, urinary tract pains. And therefore most can't. Can't, they can't release them. So it's just an overload of oxalates.

Nitrate-rich foods and supporting nitric oxide

And I'm sure there's some sort of protective mechanism, but the downstream effects of overproduction of oxalates is a lot of really not fun things like brain fog and joint pain.

Like you're saying you're you're you're junking up gas, not only your your organs, but you're junking up your, your circulation. Those little micro capillaries get these little sharp things and so you're, you're, you've got like ghost capillaries.

So things aren't, aren't feeding to your cells. And it's usually good to work with a practitioner if you have. Yes or sensitive to oxalates and get a good gut gut assessment and see really what's going on and optimize.

But again, I think your, you know, assessment of us only getting 100, 150mg of nitrates in our diet is just sad. It really is a it's a sad and sad diet.

Yeah, very it's made very appropriately. And our body is just starving. It's just starving for these. And I and I will say is that I think sometimes people hear like, oh, I should eat more nitrates.

And then they automatically go for those high in oxalates and then they don't feel well, and then they stop where. So you came right out the gates with go for a rugelach, right.

But that is something that is low in oxalates. So definitely going to put that on my, on my plate in the next couple days. I mean, I do because I have hypothyroidism.

I, definitely will take a supplement as well to help because diets are not perfect. And I travel a lot. So, you know, taking a supplement is is good. I will say this is are there any cofactors that we can take beyond just the nitrate that will help push help.

You know re couple I mean again reducing oxidative stress. Right. That's number one. So that's all of our foundational. Is there anything else that you like to add.

And again support the the nice enzymes support the pathways. Anything like that mineral vitamin etc.. Well the nitrates actually increase your production.

For your tetra Hydra biotin which re couples not oh okay. Plus some vitamin C, vitamin C is the only molecule that can take B H3 back to be H4 can reduce b h3 back to b h4 without enough vitamin C that b three is oxidized to b h2 two, which, couples that not.

Do you have a preferred form of vitamin C? Of course. You know, in the diet, when we're eating some of these really healthy foods, we're going to be getting that vitamin C.

But do you avoid ascorbic acid? You like a roller, amla or. No. Like actually most of the studies are done with ascorbic acid. Okay. You know, I'm not afraid of it.

I'm not afraid. But and again, that that's something that our body does not produce. So people are aware of that after this pandemic of how important some some of these are. Rest we need even more.

Oh I'm sure sure we really gobble through it. I mean, vitamin C is important. So many different pathways. But this. Yep. Keeping that for together in that state is really super important.

So anything else beyond vitamin C that you think of that would be a good vitamin mineral nutrient to can you to amp up if you have hypothyroidism. Well, I like supporting that nitrate to nitrite and nitric oxide pathway.

Okay. I mean, this is the base. You start with this and see what happens, and then after that, then you can go from there. And it also allows you to not have to do so much of everything else.

I love that approach, I really do. I love that approach where you start with that foundation, then you see where there's more. There's genetic weakness or epigenetic weakness, and then you address those things you don't have.

So this is what Doctor Eric. Well, cabbage and I say we don't believe in protocols. We believe in principles. Right. And that's what you're saying is it's not like we'll add this and add this now this and this.

And then since then you have a suitcase full of supplements, right? You really are optimizing your very biochemistry, which like you started off by saying nitric oxide touches everything.

It touches. You know, there's really not a pathway.

Vitamin C, cofactors, and the foundation-first approach

You know, every time you've lectured and I've been there, I don't care what the topic is, you can nail the pathways and how they're connected to everything.

And today with with thyroid dysfunction, you've really helped us understand that some of those symptoms may be coming from, dysfunction of nitric oxide production.

Well, but so this post viral post jab world we're living in. Yes. Okay. Everybody is nitric oxide deficient. The virus and the jab are making the nitric oxide deficiency even worse.

And there's all of these like thyroiditis. All this like thyroid issues after the virus, after the jab. So replenish the nitric oxide to begin with and then we can go from there.

Very good. Yes. We have we've really changed the pacifiers and that, we're looking at even more obstacles to deal

with. And, you know, certainly we could probably talk about nitric oxide in Covid long haul and how that plays a role.

So I'd like to invite you back. I'll be glad to, to discuss that. I think that'd be a really interesting topic. A lot of people are absolutely struggling with that, and there's not really a lot of solid medical answers.

You can walk into your allopathic physician. They don't really have a lot of they don't have anything they write. Oh, darn, this too shall pass. They, you know, we hope, but that's not a good strategy, right?

People are really suffering. Really are. Well, you know, anything, anything that we left off, that anything that we didn't hit on the thyroid and the connection to nitric oxide, I think you did an amazing job of really laying it out, making connections.

But is there anything that you'd like to mention that we left off? Start with the base. Start with the base and then go from there. Right. Very solid.

Well thank you so much for being so generous with your time. That I am excited for part two, but really thankful again for your time today for part one.

Thank you. Oh and one more thing. Where can people find you? I'm on LinkedIn, Facebook, and I run a, a, page on Facebook. The Berkeley Life Professional Forum.

Okay, okay. Where I take all these recent studies and make the nitric oxide connection. And I've got some some thyroid studies there too.

Post-viral nitric oxide deficiency and where to find Beth

But, you know, I've been talking about the nitric oxide connection with this virus and with the spike protein. Now for two and a half years. Okay. I am, definitely on that group and I need to pay better attention to it.

Absolutely. So people can find you there and join their, yeah, on YouTube on the Berkeley Life Professional page on YouTube. Okay. I've got all kinds of webinars like nitric oxide and hormones where I go into kind of the thyroid part too.

Okay. Notebook oxide and sexual health, nitric oxide and immune health. Okay. And those are all free on the, the Berkeley Labs YouTube channel. Perfect.

Okay. Well, thank you again. Thank you for your time. And we will see you again soon. All right. Thanks, Cal.