Uncover Why Nitric Oxide Is Called The "Miracle Molecule" Transcript

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Introduction and Speaker Background

Welcome to the MS and Neuroimmune Summit. I'm so glad to be here with my good friend, Dr. Nicole Beurkens. and Dr. Nicole and I have known each other for several years.

She is a licensed psychologist, a board certified nutrition specialist. She has 25 years of experience with children, children and adults with neurological and mental health conditions.

Beyond her award winning clinical work. She's partnered with companies and brands to reach people around the globe with the innovative research strategies and products to get to the root of their health challenges and to help people again around the globe feel better and have a higher quality of life.

Now, she's proud to be leading the team at Berkeley Life as their CEO to bring the life changing power of nitric oxide to the forefront in medicine, mental health.

In neurologic health. Again, welcome, Nicole. did I miss anything in your bio that we should add? Oh, no, I think that's good enough. My career has had such a winding path, but that sort of summarizes it.

And, I'm so thrilled to be here. it is just always a pleasure when you and I get to spend time together. So thanks for having me. Well, let's start with what is nitric oxide?

It's a great question. And I think, you know, nitric oxide is called the miracle molecule for reasons that we'll get into here. I think it's interesting.

It's sort of been gaining in popularity over the last year, year and a half or so. Now you see everything about nitric oxide out there. And before that people really weren't paying attention to it.

but really nitric oxide is a molecule. It's a gas that the body produces that helps regulate many, many, many processes throughout the body because it is a vasodilator, which means that it regulates the ability of our vasculature, of our blood vessels throughout the body to expand and contract.

And so really nitric oxide is key for allowing everything to flow through our body better. Specifically oxygen nutrients gets everything where it needs to go.

We don't often think about blood flow or our circulatory system or lymph flow as being foundational to everything in health, but they are. When things aren't moving and flowing throughout the body, we've got problems, we get blockages, we get stagnation, and we get issues on an organ, tissue and cellular level.

What Nitric Oxide Is and Why It Matters

And so fundamentally, why nitric oxide is so critical is it allows things to continue to flow through the body, which allows everything to get to where it needs to go, even on a cellular level.

So in a nutshell, that's really what nitric oxide is and why it's so important for us. So is this the laughing gas that dentists use to use? you know, this is a question that comes up often even among providers.

People will say, oh, tell me about your nitrous oxide. No different thing. Thank you for clarifying. I usually do that at the outset. People do confuse it with nitrous oxide, which is laughing gas, which is a similar yet very, very different molecule, nitric oxide.

is the combination of nitrogen and oxygen that is a vasodilator in our body. Okay. You mentioned that our bodies

make nitric oxide. So I hadn't thought that I made gas other than it kind of comes out the lower end.

and we call that flatulence or farts. Now, you tell me that we make nitric oxide a gas. and that's an important gas that does a lot of things in myself.

How does my body make this gas? Is it me? Yeah, there's a couple of pathways, and this is really important. And actually, you know, I should say, too, it's called “The Miracle Molecule” because that is when the Nobel Prize was awarded back in 1998 for the three clinician researchers who discovered the role of nitric oxide gas in cardiovascular health, that's literally what they term that “The Miracle Molecule” And it is this gas that the body produces through two different pathways.

And, you know, without, hearkening back to people's biology days in high school and maybe bringing up any PTSD that people have about that, we'll keep it really simple because it actually is profoundly important for people to understand the two pathways in the body, because you have control over one of them, and that's really critical as we talk about solutions here.

So the two ways the body makes nitric oxide. The first is through what we call the L-arginine pathway. L-arginine is an amino acid. amino acids are the building blocks of protein.

So we take in L-arginine through eating protein rich foods. Our meats, our seafoods are, you know, those types of things. the body also makes a little bit of L-arginine, but primarily we get it through our diet in the form of protein.

when we take in L-arginine, there is a process that happens in the endothelial cells that line our blood vessels. So our blood vessels throughout the body are lined.

There's this endothelial tissue, endothelial cells. And they have an enzyme called nitric oxide synthase OS or in this case E and OS endothelial nitric oxide synthase.

And so it's this process where we take in L-arginine through the diet and this enzyme in our endothelial cells, through a, many different components to this process, turns the L-arginine into, nitric oxide gas in the endothelial cells.

So that's the first way. And people might think, well, that's great. We have a way to do that. So why would there be a second way? Well, I think as you and I both know, the body is so, so wise and really has backup systems for anything that's critically important for our survival and for our health and well-being.

So our body has a second way that we can make nitric oxide. And that's through something called the nitrate pathway. Nitrates are in foods that we eat.

Also plant based foods primarily, beets, arugula, bok choy, celery, spinach are nitrate rich foods. And we consume these nitrates in our food and the bacteria in our oral cavity in our mouth.

When we have a healthy oral microbiome, the microbes in our mouth convert those nitrates in our produce into something called nitrates.

How the Body Produces Nitric Oxide

That nitrate then gets swallowed in our saliva and in the acidic environment of our stomach, gets converted into nitric oxide gas. So that's a second pathway.

And the reason it's really important that we have that second pathway, that nitrate pathway is because that first pathway using L-arginine breaks down over time as we age.

In fact, by the time we're 40 years old, we've lost approximately 50% of our capacity to produce nitric oxide through that L-arginine pathway. And that's because as we age, those enzymes get uncoupled.

Endothelial health degrades. We're living in a toxic world. All kinds of stressors caused that process to break down, so that by the time we're about 70 years old, we only have 10% of our capacity to produce nitric oxide through that L-arginine pathway.

And that is really important for people to understand, because it means we need to be focused on and leveraging that second pathway, that nitrate pathway, that option stays intact and operational throughout the entire lifespan, whether we're two years old or 100 years old, our body can produce nitric oxide through that nitrate pathway when we give the body what it needs to do that.

So this is why it's important to understand those two pads, and that as we age, as we get into our 30s, 40s and beyond, we need to take action on making sure that our body has what it needs for that nitrate pathway to work.

So our nitric oxide levels stay up throughout our lifespan. Now, as I'm listening to you and I'm thinking about The Wahls Diet where we Steph's stressed three cups of greens every day.

And I talk about deeply colored vegetables like beets, carrots, berries, that, why don't you put that diet recommendation through your lens? And what does that do for nitric oxide?

Yeah. You and I have talked about this because it I really believe that part of what's happening of why The Wahls Diet and Wahls Protocols so successful for people is it's a nitrate rich diet.

So when you're eating all of those dark leafy greens, all of those colorful, vegetables, you're taking in a lot of nitrates in your diet, and that's the building block that the body needs.

Then to go through that nitrate, nitrate, nitric oxide pathway. What happens for most people as they age is that first pathway starts to break down their endothelial cells are not making as much nitric oxide from L-arginine, and they're also not getting enough nitrates in their diet or supplementation.

So now they have neither pathway working effectively. And where we see this play out is the research shows that virtually every symptom or condition we associate with aging or old age high is back to reduced nitric oxide levels in the body.

And so when we're thinking about things like, not even diseases of old age necessarily, but neuro inflammatory diseases, things that are happening to people chronic illness wise, that younger and younger ages.

That's all part of that first pathway breaking down as well. The more stressors, the more chronic illness we have earlier in life, the more that first pathway breaks down.

And if we're not providing the building blocks for that nitrate to nitric oxide process to occur, we're nitric oxide deficient. And that then has a host of implications and negative effects on health in general, and then on worsening the kinds of symptoms that people are dealing with.

So to me, the diet that people are consuming through the protocol that you teach and use in research is so beneficial, in part because it is providing the building blocks to support healthy nitric oxide levels, which then, as we'll talk about, go on to support regulation of inflammation and all these other things.

But fundamentally, the diet that you're recommending and using is a nitrate rich diet, as is most, as are most of the diets that are recommended. If we think about the Mediterranean diet, if we think about the Dash diet, any of the well researched, utilized diets all have something in common, and the thing they have in common is recommending an abundance of nitrate rich produce, because that's how critical that piece is to supporting nitric oxide production, which then supports all of health and wellness.

Now everyone is listening. another point I'd like to talk about is in our clinics, when I was running the clinics at the Therapeutic Lifestyle Clinic at the VA, we typically would see people using in front of our eyes, so we'd follow them closely for six months.

And during that six month period, it was pretty common to feel like people were rolling back five years, seven years, and people would tell us when they saw family members, family members would say like, oh my God, mom, dad, you look five years younger, ten years younger.

Some, some people said when their kids, when they flew to visit their kids for the first time because they were finally feeling all of the travel, their children didn't recognize them at the airport because they were looking healthy.

Diet, Aging, and Nitric Oxide Support

and, would you say that you seen if you said in effect, that is very typical as people implement, the diet that I teach. do you think the nitric oxide is part of that?

You think, in effect? Absolutely. The research backs that up. Absolutely. It is, in fact, one of the first things that people report when they start taking, in our case, the the nitrate, the dietary nitrate supplement formula, which is basically diet in a capsule.

It's what you're promoting and doing with people eating an abundance of nitrate rich foods in a supplement form. What far and away the number one thing people report one week in two weeks and it's, oh my gosh, I feel like I'm young again.

My energy level is back, like when I was younger. And so people do even notice that for themselves. But the research supports that for several reasons.

Number one, just on a fundamental level, if we think about improved nitric oxide levels, which, by the way, don't take a long time to do with you, if you're consuming nitrates through supplementation or diet, your body then is able to go through that process quickly of producing more nitric oxide.

That doesn't take days, weeks, months. That's literally happening on a 24 hour basis. So if you're taking those nitrates in and your body's producing more nitric oxide, you're getting that vaso dilation effect right away.

You're getting better regulation of blood flow of lymph flow, which means right out of the gate, you're getting more oxygen and more nutrients to your tissues in your cells.

So if we just even think about it from that perspective, without getting into the details about how it impacts mitochondrial function and how it supports inflammation reduction and how it, you know, supports cerebral perfusion, if we just think fundamentally, it makes sense that if you're getting more oxygen and more nutrients into the tissues and cells where it needs to go, you're going to feel younger, look younger at younger.

in your experience, how quickly if people were taking the nitrate supplements that Berkeley Life has, how quickly would they begin to feel better? Do they notice something, in a week or two?

Or is this like, three months? Yeah. Typically people will notice and energy increased and just stay. Wow. I feel better or younger within a week, two weeks max.

It's very calm. And I can say just anecdotally, I don't know what you noticed, but for me, I noticed within the first week like, oh, wow, my energy is better than it's been in a while.

I will say that with patients that I work with and now with, you know, talking to a wide variety of health care practitioners who have their patients on these products, that sense of improved energy is usually pretty quick.

Now it continues to improve over time, but people do tend to notice a difference within the first week to two weeks of of taking the product. Now another factor, in terms of improving nitric oxide, I have to, you know, have the arginine when I'm young, the nitrates when I'm a little bit more mature.

you mentioned the mouth, the bacteria in the mouth. and we know we've changed, our oral practices a lot. You

know, we use toothpaste, mouthwashes. we floss.

but what does, we consume a lot of processed foods. we might drink a lot of alcohol. what do those factors do to the oral microbiome? So it's a great question.

And it's really important when we talk about nitric oxide because taking in the nitrates is step one. But having an oral microbiome that can convert those nitrates into nitrate is critical.

Step number two. And you know we often talk about the gut microbiome. Everybody is talking about the gut microbiome that community of microorganisms in the gut.

But what is less talked about is the oral microbiome community of microbes in the mouth. In fact, we have microbiomes in all parts of our body, on us, in us, all of our organ systems.

But the oral microbiome critically important. It's actually the start of the gut microbiome, which is why I always find it interesting. Everybody talks about I need to heal my gut, heal my gut, heal my gut, and nobody's paying attention to the start of their gut microbiome, which is actually their saliva and what's happening in their mouths.

Right? We swallow about a liter of saliva a day. Well, hello, whatever's going on in here from a microbiome standpoint is profoundly impacting your gut.

And so from the standpoint of nitric oxide, when we have dysbiosis or imbalance in that community of microorganisms in the mouth, what we find is nitric oxide levels go down because there's about ten specific, types of bacteria that have been found so far in the research that are necessary to convert those nitrates into nitrite.

Energy, Aging, and Oral Microbiome Effects

And so when we use things like antibacterial mouthwashes, toothpastes with chemicals in them, oral products that have, you know, dyes and artificial ingredients and, and all of those types of things or even and this may surprise some people, even using quote unquote, natural or essential oil or antimicrobials on a daily basis in the mouth.

What's happening there is we're wiping out not only the problematic bacteria, but also the beneficial microbes. And when we do that, then we run the risk of not having those specific bacteria that are needed to convert those nitrates into nitric oxide.

So it's really important for people who are looking to support and improve their nitric oxide production throughout the lifespan that we're staying away from mouthwashes with chemicals, certainly anything that's an anti-microbial mouthwash that we're paying attention to, the oral products that we're using.

To your point, also that we're paying attention to what's in the food we're eating, that all impacts the oral microbiome. We know from the research that it's most profound.

And, the problems are most profound for anti-microbial mouthwashes, toothpastes, those types of things. But eating a lot of sugar, eating a lot of processed foods with chemicals, all of that impacts that oral microbiome.

So we want to stay away from those kinds of products. We want to be mindful of what we're putting in our mouth, what we're exposing our oral cavity to so that we can keep that conversion rate high so that when we're eating those nitrates in the form of nitrate rich foods, when we're taking our nitrate supplements, that those nitrates are actually getting converted.

So it's a very popular to have, mineralized in toothpaste. And I see a lot of these will have an essential oil in the toothpaste. and I think you just now seeing, look for a mineral toothpaste that does not have the essential oil in it.

I think it's something that people need to be aware of. We obviously need more data on it, but what we know is that even, you know, chronic use of essential oil, which are, you know, natural products, if they're indiscriminately

wiping out those microbes and you're using them on a daily basis, that can be problematic.

And so we want to be mindful of that. There are some great products out there that are, hydroxyapatite remin, all arising kinds of toothpaste that don't have, any type of anti-microbial ingredient, including essential oils.

So certainly I want to be clear also, there are times and places for needing and using antimicrobials in the body, including in the mouth. What we're talking about here, though, is chronic daily use that we know that that then creates, an imbalance in the mouth.

That's a problem. Now, I think Berkeley Life has a gum that can help people get things going. You want to tell us a little bit about that gum? Yeah, the gum is really exciting to me.

I'm really proud of this because it's addressing something that we really haven't had a great way to address. You know, we have our, basically diet in a capsule, nitrate, capsules that people can take every day.

But there hasn't been a piece. Aside from telling people to avoid the mouthwashes, avoid the chemical toothpaste. We haven't had a great solution for.

How do you actually quickly rebalance that oral microbiome to allow that conversion? This chewing gum is really cool because it doesn't have any bad ingredients in it.

We don't have like added sugars. There's no chemicals in it. It's important that it's in a gum now because we use prebiotic nitrate. So prebiotics are the food that those beneficial bacteria feed off of.

And it turns out that nitrate is also a potent prebiotic. And so when we put it in a gum form where you're chewing it in your mouth for 5 to 10 minutes, once to twice a day, it's bathing all of those microbes in your oral cavity in those prebiotics.

And it's allowing those beneficial microbes to feed off of it. And then to, bring better balance to the mouth. So what we see is even four days in to chewing the gum daily, we see the balance of microbes in the mouth shift so that we're able to, convert the nitrate to the nitrate.

But we're also increasing the pH in the mouth with this gum, which is really important for anybody concerned about oral health. Inflammation in the mouth, cavities.

The more acidic the environment, the more problems we have. So this gum is giving the beneficial bacteria, the, the prebiotic nitrate food that they need to function well.

So we get great nitric oxide, conversion. It's also just helping with your oral health and inflammation levels in general. Is there a way for the, consumer, to test, am I a good nitric oxide producer or not?

Yeah. And this also really, really excites me. because there's so few things in medicine and nutrition that we have a simple, quick test for. Right. And, nitric oxide is one of those things that, that we can quickly test for.

We have, a patented 10s saliva test strip and people can do this in their own home. And you can see where your nitric oxide level is. You just put some saliva.

Yeah, I tested myself last night and I was very pleased to see that, that I'm good at producing. Well, so that's right. We've been working on keeping yours nice and high.

so you just stick that pad on your tongue for five seconds, get it nice and wet, hold it together, and then in five more seconds, you can use a little chart that comes with the test strips.

They come in a tube like this and you can see. Are you depleted? Are you suboptimal? Are you at the target level. And that helps inform what you need to do.

We're all about empowering people to have the knowledge and the tools to make changes in their own, health and well-being.

Oral Care, Gum, and Nitric Oxide Testing

And this is a way to empower people. If you see, oh, I'm low or I'm deficient, that helps. You know, I need to take action on this. I need to eat more nitrates.

I maybe need to change my oral care products. I need to take a supplement to get more nitrates in there. It allows you to see. And then you can also test to see that the supplements working.

So for example, it's very common. People will test very very low initially. They'll take two of the capsules of our supplement. 90 minutes later they test again and they see that their level has improved.

And that shows you okay I'm able to convert these nitrates. My body is now producing better levels of nitric oxide. And you can just periodically test over time to make sure that those are staying up.

I do want to make a comment here about how this can be empowering for people eating a nitrate rich diet, which I know many in your community are doing.

They're following your protocol. One of the challenges with food across the board is what is actually the content of different nutrients and things in it, right?

Depending on how it's been grown and how it's, you know, what the soil is, the air, what we find in the research with nitrates is that depending on where these nitrate rich foods are grown, you can get wide variance in the amount of nitrates.

So I've had people who eat primarily a plant based diet come to me and go, oh, I know my test strips are going to be off the charts. Mine's going to be great because I eat a ton of these nitrate rich foods, and they're very surprised to find that maybe their level is at the threshold or maybe even low.

And that's not their fault. They're eating all of the right things. The problem is the data shows that, for example, beets or celery grown in Florida versus Oregon versus New York versus Texas can have a huge range of nitrates in them.

So to me, that's where the precision of a supplement can come into play, particularly if you have an illness or a situation that you really are needing to make sure that you have sufficient nitrates so that your nitric oxide levels stay high.

Having the guarantee then that those capsules are providing you with a therapeutic daily dose of nitrates. Yes, still eat all the nitrate rich foods. for all of the reasons that you teach about and that are important, the supplements are not a substitute for eating that kind of diet, but it gives you that added insurance of knowing that even if there's variance in the nitrate content of the food that you're eating, you know that you're getting enough nitrates in the supplement that you're taking.

I do want to throw a caution out when you get your hold up your container again. so be sure and read the strip, because when it says saliva. Yeah. So make sure you're putting the saliva end on your tongue.

Yeah, I was a little too enthusiastic and I didn't. I put the wrong end the first time I did that. So. And you were like, boy, I have none. What's going on?

So it's like, okay, I have to read the directions. You know, sometimes I get overly zealous. I don't spend as much time reading the directions as I should.

so we fix your diet, be sure that you're eating plenty of nitrate rich food. I want to be sure you have plenty of protein.

I think checking, your nitric oxide status will give you some clue.

Do you have the right bacteria of. If you're missing the bacteria, the gum can be super helpful. And then I think it's time to listen. what Dr. Nicole said is think about your oral care products.

I know I had this conversation with members of my family to stop using their foaming toothpaste and to stop using, the mouthwash, because I think that was harming, their oral microbiome.

and I had, members, in my family that their blood pressures were creeping up and said, I, I think we have to fix your oral microbiome. I heard it, taking antihypertensive. so.

Yeah, I mean, I think people don't think about, you know, we've known for a long time the connection between oral health and things like cardiovascular disease.

But nitric oxide is what connects those dots, right? The reason those things are connected is because if you have problems in the mouth, you're not having enough nitric oxide.

And then that causes things like high blood pressure, hypertension, cardiovascular disease. So the nitric oxide is really the connector of those dots there for people.

And we know that people who have high blood pressure have a more aggressive disease course if you have multiple sclerosis in terms and conditions. So if you if your physicians are watching your blood pressure or if you're on blood pressure medication, I urge you to look at the nitric oxide story, and what's going on in your mouth, and address the nitric oxide because quite possibly the blood pressure will improve.

And quite possibly the medication that you're on, could be reduced and even possibly eventually no longer needed. Of course, you want to talk to your prescriber, not do anything abruptly, and do this very carefully and thoughtfully.

Key Takeaways and Where to Learn More

I think that would be, super, super important. so what is the key message you want people to take from our, interview here? Dr. Nicole. I think it's really to understand how profoundly important nitric oxide is as a foundation for our health and wellness in general.

but especially if you're, struggling with or trying to manage or improve some sort of neuro immune or any type of chronic health condition. Nitric oxide is foundational for regulating immune system function, for reducing inflammation, for having a healthy gut, for supporting that blood flow and getting all the, other therapies and diets and nutrients and everything you're doing, getting it to where it needs to go.

So just really the take home is nitric oxide levels, monitoring them, understanding where you're at and maintaining strong nitric oxide levels is just key and foundational to everything else that you're doing on your health journey.

And it's a simple thing to do really. Okay, so where do people go to learn more about nitric oxide in, Berkeley Life? Yeah. So we've created this great little guide for, all of your community here on nitric oxide for MS and the Neuroimmune patient.

So that will give lots more information. And I know that they can get that, where you have all the resources, for the event and then for people who want to come to the website, it's just berkeleylife.com.

And if you want more information pertinent to what we've talked about here and really, more of these kinds of connections, you can go to berkeleylife.com/DrTalks DrTalks and you'll get even more information.

and some special offers there as well. So let's have you spell up Berkeley Life. Yeah. Is there a couple of ways to spell Berkeley. Good point. So B E R K E L E Y L I F E Okay berkeleylife.com.

do you guys have social media as well or is it just go to the website. Yeah. You can go to the website and you can find that it's, at Berkeley Life and oh is on, Instagram and Facebook and all the places.

We also have, our YouTube channel has a lot of great informative, videos and things that are very relevant to, to individuals throughout the lifespan.

You don't need to be a doctor to understand them. So I would encourage, you know, people can go there to get more information as well. this has been wonderful.

Thank you so much for all that you are doing, and I look forward to seeing you at our next conference together. Wonderful. Thank you so much. Take care.