

Nutrient and probiotic strategies for sleep

Guest: Dr Stasha Gominak

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[00:00:09] Kirsty Cullen

Hi, I'm Kirsty Cullen, CEO of the Optimum Health Clinic. We are a UK based clinic specializing in fatigue related illness. And today I join you on the Sleep Super Conference to introduce to you Dr Stasha Gominak.

Stasha attended Baylor College of Medicine and completed a neurology residency at Harvard affiliated Massachusetts General Hospital. Following a number of years practicing as a general neurologist, Stasha began to concentrate on treating neurological illness by improving sleep.

She published a pivotal article in 2012 proposing a link between the global struggle with deteriorating sleep health and reduced sun exposure. Then, in a second article, she linked changes in the intestinal microbiome to the epidemic of poor sleep and designed a system called RightSleep with the aim of targeting sleep issues.

Stasha currently focuses on coaching and teaching clinicians from a wide range of health fields, and her key aim is to help those clinicians improve their patients health and wellbeing by improving their sleep. Stasha, welcome.

Stasha Gominak

Thanks for asking me to come. I'm thrilled to be able to share some ideas.

Kirsty Cullen

Superb. So perhaps we could begin by you sharing what led you to specialize in sleep as a field.

Stasha Gominak

My journey started in an unusual way. One of my patients who was suffering from daily headache, and about half of my patient practice was in daily headache at the time, she was kind enough to try the medicines that I had that were supposed to take her headaches away, but they didn't work. And then she insisted on having a sleep study. And her sleep study showed that she had sleep apnea. And she was young, healthy, and didn't have a fat neck. This was in 2005 or 6.

So we were not being alerted to the fact that people who didn't look like fat neck males, which is what we were sold at the time as the people who were at risk, she had sleep apnea that was pretty severe, and I didn't really know anything about it at the time. More importantly, her headaches went

away when she put on a CPAP device, which I thought was really weird. It was just not what I expected. So that opened all sorts of other ways of thinking about what was going on.

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I have a very biochemically based answer for why we have neurologic illness, because that's the way genetics, biochemistry, that's the way we've been trained. And in fact, we really don't know what we're doing with that CPAP device. She did not have drops in oxygen, so the simple answer of, oh, the oxygen is dropping, did not apply to her. So that had to mean that something was happening while she was in the deeper phases of sleep. So the CPAP device allowed her to stay in deep sleep longer.

That led to doing hundreds of sleep studies in daily headache sufferers. So if she could have some success, then I was looking for, well, we have very limited success in people with daily headaches, the same sort of group as those with chronic fatigue, we really don't know why they feel so terrible. We tend to dismiss them. We don't have a good answer. Therefore, we roll our eyes a lot and we feel sorry for them. They really want to get better.

So sleep studies for several years in young, healthy people with daily headache, most of them did not have sleep apnea. So then I'm challenged by the fact that this one person got better with a CPAP device. But most of these people don't have sleep apnea. And at that point, I really don't know what to offer except sleeping pills. And we've all been trained that sleeping pills are bad for you. They cause addiction.

So really what I had to offer were CPAP devices and sleeping pills. And the sleeping pills actually did help to some extent. And I also, in retrospect, realized that many of the medicines we've been using for years for daily headache are really helping because they help the sleep get better. I just hadn't really thought of it that way. So by the time I'm two years into it, I'm really starting to think that, oh, this is really weird. If I ask everybody about their sleep, which I had been avoiding, because as soon as you ask, how's your sleep?

And the person says, it's terrible, and then the next conversation is, would you like a CPAP device or would you like a sleeping pill? Most people don't want to talk about that, so I hadn't even been asking the question. Now, once we move into a phase where I'm doing sleep studies, by the end of the second year, my pulmonologist who's doing the reading of this sleep study, so keep in mind I don't have a sleep fellowship, that naivete on my part actually played a large role, because the other way you could look at that is I really haven't been brainwashed by anyone else.

I'm completely open. My patients are desperate. I'm desperate to help them. By now I'm starting to have a sleep disorder because I'm perimenopausal. So we're all desperate, curious, reading things, and we don't get very satisfying answers. We have things like, well just lie down, go to sleep. And many of my clients who are young, healthy females with a couple of kids wouldn't think it's weird that they can't sleep and they're tired all the time. Because as soon as they say I have a toddler and a four year old and they say I'm really tired and I can't sleep normally, their physician looks at them funny. Like, well what do you expect?

If you go a little further and then you do their sleep study, you realize that their actual sleep function is not normal. Most of the sleep study showed that this particular population, which I now see as an early population, 20 years later, they may well have advancing disease and then actually proceed to have sleep apnea. But they're in an early stage and what they showed was less rapid eye movement sleep, no rapid eye movement sleep, or rapid eye movement sleep that was interrupted with apnea.

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And all three of those abnormalities are reported on the front page as normal. No significant apnea. They don't say that they're normal per se because they're really not normal. They just don't refer to the fact that there's no REM sleep or there's reduced REM sleep or the half an hour of rapid eye movement sleep that should really be 2 hours is interrupted every 5 minutes by stopping breathing.

And then the next question that I put to my pulmonologist was well, why would they only have apnea in rapid eye movement sleep? And he said, well, that's when we get the most paralyzed of all. And I said, wow, that's really creepy. We got paralyzed. Really? That's really creepy. Wow. The neurologist probably reported that. How come I don't know that? And how can you engineer a system that paralyzes this tube that we're breathing through?

How do I wake up again? Why didn't I die already? What does this imply? And because there's no one really writing about this subgroup, why would just REM sleep be affected? Why are so many of these women waking up at 03:00 A.M.? Like two out of five tell me exactly the same thing. I'm so tired, I have three kids, I fall asleep, and I wake up at 03:00 A.M. And I can't go back to sleep again. And this is an otherwise normal 32 year old who had normal sleep until during the pregnancy with the second kid.

So there seems to be a progression. Each kid increases the risk of the sleep worsening. So it shouldn't be that having children affects your health. I mean, that's not the way it was originally designed. Now that's the way people are seeing it now. But that doesn't make sense. So something that's happening in what would be considered a normal life of having two or three kids is undermining the health and more importantly, the sleep of these women.

And it's not just that I don't sleep well. They also say I can't remember anything, I'm in a terrible mood. And that means I start to look at my 75 year olds who come in for memory complaints in a different way. What if they don't have any REM sleep? What if we know rapid eye movement sleep is somehow linked to making permanent memories? If these 32 to 42 year olds can have memory problems because they're not sleeping, that could be the case for my elderly patients too. Why do we just jump to the assumption that they have Alzheimer's when I don't have a good treatment for that?

So at that point, it really changed my whole viewpoint and one, I'm obsessing over how do we get paralyzed? Where does this happen? At the time, we had been trained to look at the throat. The throat was the main problem. And I really didn't think the throat was in my, it wasn't really in my practice to think about the throat. And as soon as you start to think about how we get paralyzed, that's the brain. That's my job.

So I started to read articles about what part of the brain allows us to get paralyzed, how does it work? Is anybody writing about this? And there's an interesting point that in one of the older, really important textbooks about biochemistry and neurobiology has a chapter in the year 2000 that the author is showing you the anatomy of the brain stem and says very likely malfunction of these particular cells could cause sleep apnea and periodic limb movements of sleep.

So in the year 2000, I didn't read it at the time, but someone had this idea, I wasn't really the only one. So I'm focusing on these cells and in the meantime, I'm starting to ask everyone in my practice what their sleep is like. I'm doing a huge number of sleep studies and trying to help people sleep better. And at that point other things happen. So I'm going to take a break and let you ask any other questions about that.

[00:10:55] Kirsty Cullen

So, I mean, clearly those patients changed your perception, didn't they? Which is fascinating. And then of course, your studies went further than that because you published this groundbreaking paper in 2012. And that was fascinating because it linked, for the first time, in my awareness certainly, abnormal sleep patterns to a widespread epidemic of vitamin D deficiency. Can you tell us more about the findings of that paper and how that mechanism sits?

Stasha Gominak

It's thrilling to me to have someone who wants to listen to this because medicine right now is really trying to pressure physicians not to be interested in vitamin D, not to ask their patients about it, not to give it. That's a really wrong move. So it happened by accident. So what I just told you was the preparation to getting to a point of being so curious and desperate that we're really willing to look in other places.

So what happened to me was in about 2006, no, 2009, one of my 18 year old patients had a sleep study that showed no deep sleep. So in a general sense, we have light sleep where we're moving around, we're changing position, and then we do blocks of deep sleep while we're paralyzed. And in the front half of the night, between around ten and two, we do what's called slow wave sleep, or deep sleep if you're tracking it on a tracker.

In the second half of the night, usually between about 02:00 A.M. and 06:00 A.M., we're doing rapid eye movement sleep. Those are both deep sleep and we're paralyzed. And we think that they have different responsibilities, but it's been very difficult to clarify what they're doing. And let me just parenthetically say we are in a new phase of sleep study because these sleep trackers allow literally millions of laypeople to do things at their home.

What we've had before was, I'm an expert, I tell you X, Y, and Z are supposed to help you sleep, and you had no way of making a documented collection of data to show that I did what this person said and it made it worse. I did what this person said and it didn't make any difference. And I did this other wacky thing and my deep sleep went to 2 hours from 1. We are actually at a frontier where normal people are studying themselves, and there will be, and there is currently a collection of data about this that will allow us to see sleep, I think, in the way that I'm seeing it, which is really through the eyes of someone who doesn't sleep normally.

Okay, so backing up. I have this 18 year old, she's just had a sleep study. She saw me for daily headache. Her sleep study shows no deep sleep. She wakes up to light sleep, not to consciousness. As far as she's concerned, she sleeps for 10 hours, no problem. So she can't really come in and say, there's something wrong with my sleep. All she can say is, I'm fatigued, I feel terrible, I'm not rested. Her sleep study shows she has no deep sleep.

The first important point there is everyone who comes to you because of fatigue, they're not making that up. They don't want to come spend their time bugging somebody. They want to have a normal life and not go to the doctor. That means we can document that they don't have the restorative phases of their sleep. Now the next question is, why? Okay, so she has no deep sleep. And I'm looking at her going, wow, this is really terrible, because she's going to be, in another ten years, she's going to be a mess. She already feels terrible.

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So at that point she asks me what we can do about her fatigue. And I don't know. And I say, well, let's do thyroid and B12. And her B12 is very low. It's low enough that it comes out in red and it says low. I have no experience with B12, which is a pity. We're taught to check B12 in very demented elderly people. I've also never checked a B12 in a daily headache patient. But I walk up to Google and I say, I type it in and it's, what are the symptoms of B12 deficiency? It says chronic fatigue and daily headache.

And I'm like, I've never checked a B12 in my headache patients. I've been doing this for 30 years. Well, it's not written that way in the neurology literature. In the neurology literature, it's listed in our B12 deficiency. But the headache moguls who have explained how we get headaches do not list doing vitamin deficiencies because we physicians have been trained that vitamins are for lesser humans like dietitians and nutritionists, which is absurd.

So I do a B12 level. It's low. I send her off her B12 shots and I start looking for the B12 in every single one of these patients who has an abnormal sleep study. And soon after I started drawing bloods, one of my patients mentioned that vitamin D was done by her doctor and she gave her vitamin D because it was low and her wrist pain went away.

There's another second piece, which is that many of these young women have pain complaints that don't make sense to me. Why do they have knee pain? They're only 32. You shouldn't have knee pain from just normal life. What we aren't doing with the sleeping pills and the CPAP is addressing those leg movements that show up on the sleep study. And nobody's really explained those.

So there are these funny leg movements that we call periodic limb movements of sleep. And we report that. But if you then back up a bit and say, well, these cells that paralyze us, they control how paralyzed we get. That means if you get too paralyzed, you stop breathing. If you're not paralyzed enough, then you're still moving at a time when you're supposed to be stopping the movement of your moving parts so that they can get repaired every night.

So in the background, there's this question in my mind about, gee, if we could get those leg movements to go away, so not only is it apnea, it's being able to be perfectly paralyzed, the concept is I should be able to be perfectly paralyzed by these cells because they were designed to fire at a certain rate. So when we're paralyzing our body, we're using electricity, we're not using it the way it travels in the wires in the wall.

Instead, when I keep my arm paralyzed, I'm sending a certain rate of up signal and a certain rate of down signal, and I'm matching those two. That means these cells that are firing in the brain stem, there's this little stripe of cells called the Nucleus Reticularis Pontis Oralis Caudalis, nobody's interested in this. There are a few people writing about it, but it's nerdy stuff.

And you can change the firing rate of those cells by dropping different chemicals on there. There's a whole series of articles by this Swedish guy who I would love to talk to some time. Because it's really nerdy stuff, like why would he publish this? But I'm reading it thinking he's actually got a little hair-like electrode in these cells that I'm babbling to my patients about, about you're getting paralyzed.

So, one, I'm thinking about it in this peculiar way, which is a single cell. And because of that, when the B12 deficiency shows up, I'm not thinking of it in a systemic, full human way. I'm thinking of that little

cell. And could it be that that little cell doesn't have what it needs. I don't even know what the B12 is supposed to be doing, but oh, what if this could be a deficiency state?

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So when the gal says to me, my doctor did my vitamin D and it was low and my wrist pain went away when she gave me the vitamin D, I'm really thinking about it more in terms of worn out bones because they're still moving. I really don't have any logical reason to add the D except that I'm drawing blood anyway. So for four months in 2009 in this group of patients who are either on CPAP, on sleeping pills, they've all had a sleep study, most of them have headaches, they all get to check their vitamin D and their B12.

And B12 deficiency is there in maybe a quarter of them. It's not there all the time, but the D is low in everyone. And just by chance, I happen to be drawing it between August and December. And I'm kind of, I'm struck by the fact that I have to write these lab slips every night saying your D is low, take a blah blah blah, take vitamin D, but I still don't know anything about it. And then two days before we're about to leave practice for Christmas break, I've got two guys who come in and tell me exactly the same thing.

You know, I'm wearing my CPAP device, you told me you would take my headaches away. But in fact, you sent me that little note about vitamin D last time I was here. And I bought vitamin D. I started taking it and within about three weeks my sleep got better, my headaches went away. Now, that's only two people. But the weird part about that is everybody who's got a sleep disorder documented by sleep study, supervised sleep study, has got a vitamin D that's low. So I know everybody's D is low.

And I think this is peculiar. Why would vitamin D have anything to do with it, it's a bone vitamin? And I do a search over Christmas break that is the first set of search terms is vitamin D and sleep. And nothing comes up. So nobody's written about it yet. But the next one is vitamin D in the brain. And I stumble into this literature by a guy named Walter Stumpf who started to write about D in 1979 in the major vitamin D lab, in Hector DeLuca's lab, and was making the point from the very beginning that this is a hormone that interacts with all the other hormone systems of the brain.

So since 1979, medicine has known that this should be always treated like every other hormone. That means if I say Kirsty, you know, you tell me your hair's falling out and you feel nervous and you lost weight and your skin is weird. That sounds like a thyroid problem. Kirsty, why don't you just go down to the pharmacy and buy yourself some thyroid hormone, and I'll see you back in a year. I know you'll be fine, okay? Laypeople who haven't gone to medical school know that that's weird.

They go, wait a minute. Aren't you supposed to test my level? And then, I don't know, my aunt got all screwed up because her thyroid was too low, and that was too high. The concept that all hormones stay in a tight, little narrow homeostatic band is there since the 1930s, since we started the study of endocrinology. Walter Stumpf was a neurologist, but he was also an endocrine hormone specialist. He started with studying where are the estrogen receptors?

So within the early 80s, by 1983 or 84, he had put together a framework, a belief system to explain where vitamin D receptors are in humans. Keep in mind that vitamin D appears to have shown up on the planet first with yeast. So first come bacteria, and then a few other things and lichen. And then comes fungi or mold or yeast. They act as a sensition, but they aren't two sexes. There's one single sex and they bud. They make vitamin D2. The next thing that happens is a different chemical. D2 is made by the sun. D3 is also made by the sun.

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But as soon as flowering plants come on the planet, well, that really implies that there are two sexes now. That even as you start in plants, flowering plants have a sex organ. They have to find the male and the female. And now they're using a different chemical that is related to the temperature, whether or not there's insects, because it's related to how much sun there is that allows these plants to coordinate their reproduction with the seasons.

I want you to think of it that way, because this idea that this is a vitamin, a bone vitamin, is crazy. It doesn't have any real basis. And medicine has played a large role in brainwashing medicine and the lay public about this chemical. So, one, Walter dispels that myth. It's not a vitamin. It's never been in the food. It's not a nutrient. It's crazy to call it a nutrient, because if I were to eat salmon, and that salmon happens to have salmon estrogen in the meat, which it does because it uses its own estrogen, if I eat that salmon, that estrogen in the salmon is not my estrogen supply.

It's true I just ate it, but it's really not designed to be my estrogen supply. My estrogen is made by me. My vitamin D is made by me on my skin in response to sun exposure. As with every single insect, bird, mammal, fish, so every single animal takes D3. Sadly, in the United States, the prescription is still D2, which is bizarre because it is not what we make or use. And it is very different from D3. And it is actually not healthy for humans or any other animal for that matter, to take D2 in that supplement.

So, one, Walter already put together a way to look at this chemical. So I'm reading his literature. I started with his literature instead of being taught that it was a vitamin, and vitamins are for people who are, I don't understand why we made that distinction in the first place.

There's another really important point there, which is Walter is writing, the things he's writing about, which are D is going to be related to infertility, D is going to be related to not being able to fight infection, D is going to be related to postpartum depression, D is going to be related to seasonal affective disorder. He's got all these articles which make it clear that there are things that are going to be related to mood, reproduction, and our metabolism.

And he doesn't really say sleep because no one's paying attention to sleep. But he makes the clear point that animals that hibernate, D is what does that. How would the body know what time it is to go into the little den to have your cubs? The bear doesn't look at its own. It just feels like doing that. We are all run by these hormones linked to neurotransmitters. He makes all these points before there's a D deficiency epidemic.

So he makes these points in anticipation. And at the time, sunscreen is just starting to be used. So I know the timing of that because I didn't use sunscreen when I was in medical school. So if you start with the early 80s, even though he's clarified what this should be seen as, we don't have any place to use it yet because the epidemics of fibromyalgia, chronic fatigue, irritable bowel, terrible depression, and the increasing huge epidemic of depression and suicide in teenagers and all the diseases that have moved from elderly into young people, he was anticipating those.

He was also really sure that he knew what he was talking about. And according to other vitamin D experts, he was very arrogant because he missed the point that if he wants to entice the rest of his colleagues into this belief system, you have to learn about how to do that. Humans are very focused on status because we're primates. That means he missed this class in his training and he turned off his other colleagues. So he was not able to get them to see this in the same way that he was.

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To me, it was quite obvious because no one else had tried to give me another way to look at it. And then I'm looking at sleep and thinking, well, duh. Hibernation is sleep, so this would make perfect sense. So I actually see this, these set of articles. I read a bunch of articles and I think this guy has actually published an article showing that there are vitamin D receptors in the Nucleus Pontis Reticularis Oralis Caudalis, like, who even knows about that nucleus?

He has a report showing vitamin D talks to these cells. So I call him up and I say, hey, you don't know me, but you've written all this stuff about vitamin D. I don't find anything coming up about vitamin D and sleep. I've just had this really interesting clinical observation. I'm very interested in sleep. You have the actual primary nucleus that paralyzes us has vitamin D receptors in it. And he says, you're right, nobody's written about that, but it makes perfect sense.

So he and I got together and published an article describing that, and that was in 2012. It's ten years later. Medicine is still fighting over the fact that vitamin D shouldn't be thought of as being important. That's a pity, because now the lay public has been instructed to take vitamin D since COVID came. And there are really bad things that come when you take vitamin D and you do not correct the microbiome. That's what we're going to talk about next.

Kirsty Cullen

Absolutely. And another point I wanted to make there Sasha was that the findings of your paper established an optimum level of serum vitamin D at between 60 and 80. How does that sit, given that desperate need for a paradigm shift? How does that sit with official recommendations for vitamin D levels in adults? And can you share your thoughts around safe vitamin D supplementation?

Stasha Gominak

That's a really good question. First off, you would think that there would be experts, okay, that they just know stuff. How do they know stuff? Well, we just make it up, you know. I'm sorry. The recommendations are really pretty made up. Okay. Now, because the recommendations were so focused on dose, but I had one author that was writing online who's actually a psychiatrist, he's retired now, he had a site called the Vitamin D Council, that was an effort to re educate us, to say, it's the level, it is not the dose. You must control the level.

So I at least had that instruction coming off the internet. James Cannell is his name. As far as I know, he's still living. He's not recognized as an expert per se. So I am doing this as a novice. I'm reading the levels, I'm doing blood levels, then I'm giving doses, and then I'm staggering through, well, what does this all mean? I just gave what the recommended dose was, which was 1000 IUs, and the level didn't go up, it went down. Where are these recommendations coming from? This part is extremely confusing. So, one, a level must be done.

Two, each person has their own unique state of vitamin D deficiency. And it depends a lot on how old you are, how much sun you have, where you live on the planet, what color is your skin, how much sunblock do you have built into your skin? So learning that took several years. And there's a lot of misinformation. There are many, many people out there saying, just take this amount. That's really dangerous. I gave you that example of just here, take some thyroid hormone.

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We put testosterone under lock and key in our doctor's office because we know it's dangerous. So was vitamin D, but it's there on the shelf. Now, what actually happened to me was, because I was such a novice, I wasn't frightened by this. And we started to just go up on the level. If it's 20 and that's low, and mine is 35 and I don't sleep well, my question was, is there a vitamin D level where I and my patients will all say, you know what, I'm sleeping better?

And that's exactly what I asked. It wasn't a prospective study exactly, because I'm not a scientist. But as soon as it crossed 60, my patients started to come back and say, you know, I'm sleeping better. And it was very consistent. It's been consistent at 60 for the last 12 years now. Now, here's the weird part. And in the UK the levels are done in a different way. So if you want to duplicate that, it's actually 150 to 200, that's in nanomoles per liter. So you have to watch for the units in all British Commonwealth countries. So Australia, Canada, et cetera, have this change in units.

Now, having set it 60 to 80, the upper limit is established by the fact that there were studies back in the 50s and 60s using lifeguards, studying their vitamin D levels and seeing what maximal sun exposure would do to their vitamin D levels. And the maximum they ever got to was 80. And that's not using any sort of supplement.

Now I missed that in the first go-round through James Cannell's website and ran my D level, and many people's vitamin D levels up into the hundreds, because other people say, oh, there's no toxicity. Half the people say, oh, it's toxic, half the people say no toxicity. Well, I ran mine up to 90 and I started to feel terrible. Very bad pain, I can't really sleep. And so, one, you have to ask when someone's writing about vitamin D, what is the lens they're looking through?

Are they interested in skin? Are they interested in bone? Are they interested in the GI tract? What's the question they're asking? Because this actually is a hormone that affects hundreds of organs in our body. It is designed to do all sorts of things. And it's not that it's the most important hormone, it just has been ignored. We put it in a vitamin category and we've ignored it in a way that you wouldn't ever think of ignoring oxytocin or any other estrogen, thyroid.

So it's been ignored. The basic science is mind boggling. It is so compelling. Then we get to the next issue, which is the basic science is compelling. How do I, as a clinician, use this chemical safely? How does the lay public use it safely? That is very difficult. In the US, we actually have a way to do our own vitamin D levels for cheap. \$39. And in the UK, you happen to have a website that will allow you to order a mail in piece of filter paper where you drop a drop of blood on it and they take a little two millimeter pump punch out of that blood.

And it's important that you do it correctly. But the levels that they're testing are the accurate ones in Birmingham, England. Okay, so you guys have a way to do that for pretty cheap. That means the lay public in those two places, and very few others, are able to test their own vitamin D levels and manage their own dosing to keep their D level in a place that's safe. Okay.

Having said all that, it's still pretty difficult because there are always two sources. There's the sun and then there's the pill and just parenthetically, also, I don't think that the pill that we're taking duplicates what happens when we're in the sun. There is a really important piece of literature by a guy named Slovisky who is doing amazing work that shows that there is a rainbow of types of D that are made on the skin when we are exposed to the sun.

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Those different types, and there may be 20 different types, all do different things that have to do with healing your skin, decreasing fibrosis, making sure your skin doesn't age, backing up the process that would make skin cancer. So he's got an amazing literature that suggests that we were actually designed, duh, to live outside. When you think of us from an evolutionary standpoint, we started to live indoors really only in the last 200 years.

None of the other animals, except our pets that we feel sorry for, and we put them in the house, live indoors. We've all lived outside. That means our biology has not changed over the same period of time that computers showed up. So I hope I answered your question. This is obviously a very emotional point for me because there is so much misinformation and there's so much disagreement among the experts.

I mean, there's a meeting called the vitamin D workshop that meets once a year and anybody that's doing any sort of research of any kind of vitamin D can come there and talk to each other. And it is a very controversial area of medicine.

Kirsty Cullen

Yes, it certainly is. And I know in clinic we absolutely insist that our clients are regularly testing their vitamin D levels so that we would never supplement without knowing what a vitamin D level looks like because it's really, really important to manage that level.

But it also begs the question, Stasha, so if there is that link between sleep quality and vitamin D deficiency or sufficiency, does that follow then that there are seasonal variations in sleep quality?

Stasha Gominak

Okay, so first comment, 60 to 80 is a very specific question. Here are a bunch of people who have sleep disorders, documented sleep disorders. They want to know if there's a level that'll make their sleep better. That then prompts you to think, do they have to be profoundly deficient over a long period of time before their sleep fails? My answer to that is, yes. You can be goofed up. Your vitamin D was supposed to go up and down.

It just wasn't supposed to stay below 30. And this is me making it up in my head because I don't really know the answer. Nobody's thought about it. That means that that particular question is answered by 60 to 80. Now, does that mean I should give my child who doesn't have a sleep disorder, vitamin D and get their D level to 60? No, that's not what it means because it's my suspicion that we have to go to 60 because our deficiency has been so profound over such a long period of time that we may have to actually go above.

Okay, now the next question would be what's the right, the ideal level? Well, that's a little bit difficult to understand because as you mentioned, D is actually designed to fluctuate and have a winter D state and a summer D state. And I'll explain what that is in a minute. But that means the only place you can really look to say what's the ideal is at the equator where there aren't seasons and there are studies done on hunter gatherers who do not have houses.

They don't even live in a hut. They wander around in Africa and they sleep under a bush. And their D levels are in the 40s. Their mean D levels are in the 40s. The thing that most humans want, once they have everything they need and they have the internet, is to say, well, I don't want to just have what I

need. I want to be at the ideal level. I want to be at my highest peak performance. So then what you'd want to ask within that tribe is who's your best performer within this tribe?

[00:39:42]

Okay, you've given me a mean level in the 40s. What if the healthiest person's level is 55, I want to head there. Those questions have really not been answered yet. So what you'll see is different experts have different ranges that they suggest. It is my observation and sort of deductive reasoning that we were set up to have a D that probably went into the 60s and no higher than the 80s in the fall.

And this is in a rural population that's still living outdoors, not with air conditioned tractors, farming by hand behind your animal, no sunscreen, maybe a hat. So it goes up to 80 in the fall and then by April it's down in the 40s. So it fluctuates. Now, what are the things that we see in a summer D state? What do we see in the winter D state? We know that it has direct effects on metabolism.

And the part we're going to go into next is D actually is a major player to which bacteria live inside you. And that's one of the ways it has a direct and really profound effect on the metabolism. That means when your bugs are the bugs that don't need D, so when D goes down, you don't have enough D to share with the internal bugs, be constantly supplying them, and the bugs that show up make us want to eat more and it encourages us to eat high fat, high calorie foods that allows the bear to put on weight to go through the winter.

Like you would never shame a fat bear in November. You would think, oh, that bear is going to survive the winter. What if our population has become obese and when you look at the timing of that, it really started in the 80s, it's not that they're bad people. They eat huge amounts of food and are still hungry. That used to have a huge survival advantage. So, one, D affects the metabolism with an intermediary, which is the microbiome.

That then makes for when I eat calories in this winter low D state, they are put into fat. So I don't even have a choice in the matter. It doesn't go into building muscle and making me strong or repairing me. It goes into we're in the sustain, we're not growth promoting, we're waiting, we're hibernating. So metabolism, fertility, you don't want to have your babies when there's no food. Each species gestates for different periods of time.

So for the bears, they mate in the summer. So the mama bear has her cubs in the den while the snow is on the ground, so that there aren't predators eating her cubs. So that's perfectly timed. For humans, we gestate for nine months. So it looks to me like our fertility goes up when we get into a D of 60. We mate, nine months later, so that's October, 9 months later it's June, and the baby comes out perfectly set up to be out in the sun, so that baby can build D.

So that means each species is a little different in how it's linked. And then the third is sleep. So you picture what it would be like to be hibernating. And in fact, in humans populations, if you had no food in the winter and you've got your ten kids and three wives and you're sitting in that little teepee and you've got dried meat and that's it, if you can make it through four months of snow on the ground and no way to hunt, you better be sleeping. You're not building muscle.

So the alternative picture is the summer picture, which is we sleep less, we do all the same deep sleep, but in 8 hours. So we sleep less time, we're more fertile, and we build muscle. So one of the things that most of my clients notice is when you get your microbiome back and you get your D right,

all the training you did before that didn't help you lose weight and build muscle and build endurance has a really different effect.

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So this has been in the background all along, improving our survival, but we didn't see it through that lens. So, one, expect to see other experts giving you recommendations on other levels. Two, always listen to your own body. I mean, you have to make a record of where do I seem to sleep best, where do I feel best, where's my D level when I feel the best?

The other thing that no one pays attention to is if you start taking 2000 a day, IUs per day, and you take that for ten years and you don't do your D levels and you're not paying attention, things are going on over that ten year span. And a lot of the people that I wind up seeing now have a D of 60. They look at my stuff and they say, I've been taking D for ten years, my D is 60 and I'm a wreck. Well, there are other things that go on.

Once your D gets to 60 and you start to sleep better, if you have not brought back the normal microbiome, your D level is encouraging your body to sleep and make repairs, but it doesn't have the building blocks, the B vitamins and other minerals that are supposed to be absorbed through the microbiome. So bad things result. Did I answer your question?

Kirsty Cullen

You certainly did. And I mean, this leads us beautifully, Stasha, into the next question that I really wanted to pose. And just to set the scene, 2016, you of course, publish another paper. And this is following the discovery that the sleep improvements that you gained by optimizing vitamin D start to recede after two years.

So you then started to look at how changes in the intestinal microbiome and vitamin B5 status might impact on sleep and how that's all linked back to vitamin D. Could you explain a little bit about that for us?

Stasha Gominak

Yes, and I have a whole website dedicated to this because as we get into this, this is very complicated and it's dangerous stuff. These vitamins that we talk about like they're not important, they can really change your life for the better or for the worse. So we're doing vitamin D. I think I've got the whole thing figured out. As most physicians, I'm thinking, oh, we found the key. And it's like one thing. No, it's never one thing. I mean, one thing is always connected to 100 other things.

So after two years, our sleep starts to deteriorate. We start to get pain. I have this peculiar buttock pain where I can't sit down at the end of the day and I bring that up in these even though most people don't want to talk about their butt because it's so peculiar. I didn't fall down. There's no bruising. I can still run. I'm running three times a week. It doesn't make any sense from my physical experience with my body up till that time. I've been sitting on that butt for 50 years. Like, why does it hurt?

So, one, it's so weird that I'm thinking maybe this has to do with the vitamin D. My D level is still 65. My patients are coming back with similar complaints. You know, I came to see you because of my daily headache. Now all my joints hurt. Could this have to do with it? And I don't know. We're out on the edge. We're out on a frontier. And it's developing in a group of people that have nothing in common with one another except that they've all been doing vitamin D with me for two years.

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And then a couple other gals come in with burning in their hands and feet, which is really creepy because my subspecialty is neuropathy. Burning in the hands and feet, both at the same time is extremely rare. I've probably had only two patients who have had that the whole time. And usually that responds to B12, but they were already on B12. That means I can't really whip that out. And I'm beginning to wonder. I've seen that respond to B12, but it has a B vitamin ring to it, this burning in the hands and feet.

So again, desperate, we don't know what we're doing, and we can't find articles about it. And then a woman brings in a book about Pantothenic acid. Pantothenic acid is B5. The current dogma is there is no Pantothenic acid deficiency because it's every food. That's what it says in all the books. She brought this article to me. I don't read it, of course, because vitamins are not important to me. And then she comes back and I'm forced to read it.

And the reason why she brought it and there are references in this book is because the gal who's writing, it says, I'm giving this 400 milligrams of Pantothenic acid to all these people with rheumatoid arthritis. And not only does their pain get better, but their sleep gets better. So she brings it to me because she knows I'm crazy about sleep. I go to the references, and the references are from the 1950s. They have not been repeated. They were done in convicts before it became illegal to do these kinds of experiments in convicts.

And they force fed with this artificial diet, a blocker of Pantothenic acid. And within two weeks, they produced these weird symptoms. Walked like a puppet, a puppet-like gait, which as soon as they described that, I thought, I have a couple of people with that. It's not Parkinson's. It's something else. A puppet-like gait, burning in the hands and feet, belly complaints, and they can't sleep. So it's a very small group. It's the only reference of blocking B5.

I have no basis for thinking that these people have B vitamin deficiencies. They are all on the same diet. They didn't change their diet. We're not starving. As far as I know they're not eating a purely carbohydrate diet. So why would they develop a B vitamin deficiency? I've been following these same people all along. It looks to me like what I've done is we've promoted their ability to sleep better.

And because I want sleep to produce repair, I don't care about being unconscious, I want to repair. The concept in the background is, oh, perhaps we've increased the need. Or we've used up the stores of the B vitamin and they're manifesting two years after we started with the D. This is completely me fantasizing in my brain. Now, the hard part is I give 400 milligrams because that's what the book says and that's what everybody else says, and that's what's on the shelf in the health food store. I don't give it to my patients. I give them a recommendation.

And as I went into the health food store to buy the 400 milligrams of Pantothenic acid, what I remember from medical school is if you give one B, you should give all of them. And I don't really know even how many there are. I'm completely, again, naive. I think, oh, I better start reading about this. But it turns out that there are eight things we call B, which is kind of peculiar. There's A, and then there's eight things called B, and then there's C, D. Like, why would there be eight things?

So I give this recommendation of taking B 100, which means every single one of the eight B's 100 milligrams or micrograms of each. So that's by accident, the 400 milligrams, by accident, I go home

and I take it. I'm enthused about the possibility of making the pain better and the sleep better. So I give a recommendation to about 40 people over a week, and then I take it. And by the end of the week, I realize that my sleep disorder, my restless syndrome, has tripled.

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So I think, oh, no, this is terrible. This is like all this D stuff where everybody gives you these recommendations based on nothing, and oh, there must be a dose response with this stuff, because I stopped the 400 milligrams of Pantothenic acid, I stay on B 100 and my pain goes away in a day. My sleep gets immediately better, which is really bizarre. Right off the bat, this is acting just like a drug.

Like, you move from 500 or 600 milligrams to 100 and all of a sudden you feel completely different. That's not the way I picture vitamins. We were taught that the B vitamins don't have stores. You pee out the excess. That turns out to be completely made up and not true, especially for B5. So what happens next is all these people come back having done what I told them, and most of them are pissed off at me. And they say, hey, this Pantothenic acid, it nearly killed me. I was so revved up, I couldn't sleep at all. I only took it for two days and some of them just stopped the whole thing.

But some of them stayed on B 100 and said it was amazing. This 400, this just made me feel awful. But this B 100, I slept great and my pain went away in a day. And I was like, that's what happened to me. What do you think is happening? Because I have no training in vitamins, it still doesn't make any sense to me that it should go away that fast.

Now, in the background, that means, one, what is unique about my people? They all have D levels that are really good. I make an assumption that this woman who's recommending 400 milligrams and giving it to the rheumatoid arthritis patients, what she doesn't know is they've had a low D for 20 years. That's how they arrived at having rheumatoid arthritis. So what's different about my clients is they have a D level that's really good. And now we've added these other Bs, there's a synergy.

Because definitely when you get the dose right, if it's perfect, your sleep gets perfect. Like, wow, in a day. That's weird. What does that mean? So there were these clinical events that were so dramatic that people said the same thing. Here are 30 people that don't know each other, say, revved up, anxious, couldn't sleep, agitated. And I'm like, wow, this is like giving amphetamines. Vitamins aren't supposed to do that. That means that this vitamin is going up into the brain and it's making a chemical that's making us agitated.

What could be doing that? So I stumbled around for several months after that. I have a package now. It's taken me ten years to put together, but at the time I was completely like, this is really cool, but it doesn't make any sense to me. And it's pretty scary because it takes pain away, but it can also cause pain. And why is the D causing pain? And why do they have these B vitamin deficiencies?

So, in the background, one, these are a bunch of unrelated people who have not changed their diet. So the idea that in the early 80s, we said if you have a good diet, you don't need to take vitamins, I think that was probably true. That was true of a population that did not have a D deficiency and had not lost their microbiome. So the second step is I start to read articles about Bs. It turns out that in the time frame of when I'm reading this, which is about 2013 or so, the articles that are being written about the B vitamins and their absorption are saying, every one of the B vitamins has a poop bacteria source and a food source.

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So they're going back on what they said, which is that all the vitamins come from the food. And I'm like, well, wait a minute. If they come from the poop, maybe that's why they're 8, maybe the bacteria, oh, here it gives references showing that this kind of bacteria makes riboflavin. Wait a minute. What they're really suggesting here is that the right microbiome that has these four specific phyla at the time that I'm reading these B articles, my husband hands me the Economist Journal, which is not about vitamins.

He hands me the Economist Journal and says, no, I did not know that the B vitamins are made by the poop bacteria. But here, you're going to want to read this article because it's a review of all the things that the GI specialists have just published in the last five years, saying that there are these four specific phyla of bacteria that establish themselves in the GI tract of outside living humans based on, it turns out, the D that's supplied by the mom's breast milk. So the D is obviously a growth factor that these four phyla need.

If your mom does not have enough D to give you D in her breast milk, then the bacteria that are selected for are the ones that don't need D. That means you have a different microbiome. Okay, we've been told that we lost our microbiome because of antibiotics, but in actual fact, the microbiome makes antibiotics. Remember that we did not make them up. We stole them from bacteria.

Pasteur is growing the bacteria in a petri dish. Somebody notices that there's a clear zone around this little yellow lump of bacteria and thinks, oh, I wonder if they're secreting a chemical that kills their competitors. Well, yeah, and they called it antibiotic, anti life. That means our natural phyla of bacteria, when they live in there, they compete with these other invaders, and they are why we can actually live on this planet before antibiotics are created by humans.

It's not like humans just started 100 years ago when physicians started to use antibiotics. So, one, it's not that antibiotics are bad or good, it's that the phyla have already been making them. They make antivirals. They make anti fungals. Now, that means you don't have to worry about taking antibiotics, but you do want to have those four phyla, because those four phyla really have evolved, those bacteria started billions of years ago.

Those bacteria actually did things like secreted sulfuric acid that dissolved the rock, that made the iron, or the nickel in the rock available for the biology that came after. The living beings came after the bacteria. And it's the bacteria that may actually present these minerals in a specific way that allows the animals to absorb it. Similarly, these four phyla bacteria have been hanging on this planet for billions of years, trading these growth factors that we called vitamins.

So it turns out that the eight Bs were actually all described as bacterial growth factors in the 20s and 30s when we were first looking at this, they were published as bacterial growth factors. Then somebody got smart and said, I wonder if humans need those too. The biochemical pathways that bacteria use are the same as the ones we use. We have other ones that we've added to it.

So then the idea is, oh, I have no idea what dose of Pantothenic acid to give, and I've just screwed up a whole bunch of people. How on earth am I supposed to know the right dose of eight things? And if you go in and you look at the B complexes, it's overwhelming. Everybody has a different idea of the dose of that. Just like for D. By accident, I picked up B 100, and it was perfect for me and several other people.

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But you have to keep in mind that we had actually drained our stores leading up to that because we had the wrong microbiome and we had started to manifest symptoms of B vitamin deficiency. So there are articles that suggest that B5, B6, B1, and vitamin C all have body stores. We don't know where they're stored, but you become deficient over time. Now, you can speed that deficiency state by making more repairs, because that's what D, as you get the D better, the D is promoting trophic or growth or repair.

So the second piece is, in order to get your microbiome to revert back to normal, all you really need to do is to duplicate what the bugs had in the first place, which is a good D supply. And then all the foursome are down there. They're just a few of them, they aren't the predominant bacteria. If you provide the B vitamin soup that they used to make themselves, because they would secrete these Bs into their environment and then, oh, this guy would take up the riboflavin that this one made and this guy would make thiamine.

So they make this B vitamin soup. So three months of a D over 40, it doesn't even have to be perfect, doesn't have to be 60. Three months of a D over 40 plus B50, and I ended up lowering that because most people who start this RightSleep program are not as deficient as we were, brings back the microbiome. And I know that not because I did poop samples, but because the next question would be if I take B 100 and I'm hypothesizing that the bugs need this, but I'm right, and they grow back because now they have D and they have the Bs, and they have their buddies next to them and they're trading Bs, all of a sudden, I've got the supply that the bugs make, and I've got the B 100 I've been taking.

I just experienced what it was like to have too much B5. And all these people had yelled at me, I will never forget that. It was horrible. That means I thought, you know, when the natural supply comes back, that means our biology was formed around the concept of eight different growth factors being supplied in a certain dose, in a certain ratio. That's a complex equation. Really what I want is to get the bugs back. Then I don't have to worry about it anymore. Then I can be sure that they're going to get what their biology was meant to have.

So I start to tell my patients, look, if your pain complaints and your sleep problems come back, you better stop this B 100. And it turns out it takes about three months. I took it until four and a half months, and by the end I was miserable. I was all stiff. I couldn't get out of bed. So there are some very big points there that are challenging our concepts behind the vitamins in such a big way that it's really difficult to get your head around the whole thing.

I have a website because this is so complex that it really takes a long time to get all the points dissolved in your brain. I have a workbook that actually gives you a path to follow that is very okay, now do this, now do this, now do this. Okay. It is not the why. It is the how to follow this. The why is quite deep. So this might be the first of these interviews that you watch, but there are some challenging ideas here.

For instance, probiotics, just dumping the bacteria down in your belly, it doesn't make any difference. If you don't have the growth factors there, they won't stay. You'll just poop them out. The second issue is if you've been deficient for a long time, if your microbiome has been abnormal for 30 years, and the microbiome is probably also responsible for many of the minerals that we need in small doses,

copper, zinc, iodine, iron, things that are not just growth factors but are pivotal cofactors for various neurotransmitters.

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I now think that iron deficiency is one of the things that is very common in the same population. We focus on iron being about building your blood. So when somebody takes iron, they say, oh, I had so much more energy. No one has really thought about iron having something to do with sleep. It turns out iron is a cofactor for making acetylcholine, which is really about what this RightSleep program is about. And it's necessary for dopamine, serotonin, norepinephrine and epinephrine.

That means both the sympathetic and the parasympathetic side of the autonomic nervous system are heavily linked to having enough iron in the brain. And we don't really have a way to ask if the brain is iron deficient. So in the background, having your own microbiome back, there's a whole other field of endocannabinoids that come. The building blocks for the endocannabinoid system, for our nervous system come from the bugs as well. So probably step one is getting the microbiome back.

The next issue is you must be patient. You must constantly be focusing on, is my sleep better? And what am I doing to make it better? Am I adding these other things? And noticing, as we said at the very beginning, we now have these trackers. I have some clients now that have gone through the RightSleep program and gotten 80% of where they want to be, and they add iron and everything changes. It's so amazing. And their deep sleep doubles on the first day. It's like, whoa, I never really thought of iron having anything to do with sleep. So it's complex.

Kirsty Cullen

I was literally just going to say that. So, I mean, there are three things that I take from that. The complexity of the situation, the power of nutrients, and probably because of that, the importance of working with a practitioner who can try and disseminate all of that and guide in a really intelligent, but also a really safe way, I think.

Stasha, can you tell us finally, just a little bit more about your RightSleep program?

Stasha Gominak

It sounds if you've just listened to only this like I'm giving you a vitamin recipe. And the reason why I want to discourage you from thinking of it that way is, one, it turns out that even if we've all failed because of the same epidemic of going indoors and not having sun exposure and it's going to be much more than just D, there are all these other wavelengths of light that do all these other things to us biochemically. So going outdoors is number one. You need to go outdoors more.

Even though we've failed, we all fail in our own unique way. So when you stop sleeping normally, then you stop repairing and you start manifesting your own unique genetic weaknesses, okay? Even though you have a fatigue clinic, there are subsets of that. Some have autoimmune disease, some do not. Some have diabetes, some do not. We have our own genetic background, and that means if we can't repair that genetic weakness, then we manifest those diseases.

One of the things that struck me was that when I first started putting CPAP masks on people, everything got better. Their cholesterol went down, their hypertension went away. They came off two of their blood pressure medicines. Then three years into it, they're still wearing a CPAP mask, and it's

all failing again. That was the first place where I was like, this is a bandaid, the CPAP mask. It's really not addressing this permanently.

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So the first place to look is, I have failed in my unique way. I'm going to follow the RightSleep program, which suggests that I should measure my D. I should take this B50. It involves a multivitamin, and you have to look at your B12 level. So I have very specific things I want you to measure and look at. That does not imply that these are the only important things in your life. In fact, I really think it's helpful to have a naturopath or a functional medicine person who's trained in other things like mineral deficiencies and things that I'm not knowledgeable in, because each one of us have different things like that that have gone bad, and it depends on how long you've been sick.

One, the RightSleep program is a little wedge of the pie. The other really important part is these vitamins don't ever cure anything. One of the most important things that I discovered at the beginning was if you don't sleep for whatever reason, and I give you vitamins, nothing happens. These vitamins are the building blocks for repairs, but the repairs are linked to a specific phase of sleep.

That means all these repair phases that we're looking at in the Petri dish, we're ignoring the fact that that's a great biochemical pathway, but the brain or the body only does it at this specific time because repairs are like growth. If you grow a third arm out of your chest, that's not good. You really want to wake up and look exactly the same as you did before. We have the potential to grow nine arms. You know, reptiles can grow their arms back. That means the potential is there.

You don't want an arm to take over your body. That's really about cancer. My liver is growing so big, it takes over my body. That means when you are repairing, there is a tight supervision of that. That means the brain is concentrating completely not on using your liver to do stuff, but in repairing your liver. And we have lots of evidence that every single cell, fat cells that we think like, oh, they're worthless. No, they do really interesting things.

They secrete different things at night. You take them out of the body and you watch what they do for 24 hours. They still have a 24 hour clock. They secrete different things at night than they do during the day. That also means they're listening for different messages during the night. They may interpret a message that's at a certain pulsatile rate or a continuous rate during the night as a different message than during the day.

That means if I get vitamins and the person isn't sleeping, nothing happens. They must sleep in order to make the repairs. That then means there are some other ways of thinking about this which are not as simple as, well, you're just doing it wrong. If you can't sleep, just lie down. No, they need help. That means the sleeping pills are not a bad thing. They're just not the cure. So if you have someone to help you so that you're giving vitamins and you can't sleep despite doing this, then you need a sleeping pill, or you need a CPAP mask, or you need somebody to look at your oral airway and make sure that your tongue isn't falling back in your throat.

You need to really evaluate the anatomic causes for waking up, as well as the physiologic causes. And ultimately, the only way you get people to repair their own sleep switches is by sleeping. That is a really different way to look at it. One of the big differences when I'm watching the other sleep experts, and they're not wrong, they're just saying things that are about people with normal biochemistry.

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Oh, just lie down at the same time every day and get up at the same time and exercise and well, what if you've done all that and nothing has resulted? What if you're extraordinarily fatigued and you sleep 10 hours a night? That means there's something else wrong and we should at least open our minds to the possibility that we might be able to help that person by thinking of it as a deficiency state and then adding stuff back and see what happens. That's the only way you're going to know it.

One of the things you should notice right away is setting this up, setting this whole set of ideas up as a prospective clinical trial where we're going to actually manage, they don't even have good prospective clinical trials now for D, all the clinical trials, all those seven trials that have been reported out of the Vital study are all done with a fixed dose. And 6% of the people who took part in that study actually had two vitamin D levels a year apart, but they said they reported it as five years of the study, 25,000 people.

So they're so confused about how to do prospective trials in D alone, that when you throw in the variable of, I'm going to bring back the microbiome, I'm going to take B50, I'm going to take a multivitamin, there's no way that you can do this in the way that medicine has decided, arbitrarily, that the real answer only comes from prospective controlled trials. Those trials are about the drug industry, because that's the only way you can say, I'm going to make a new chemical, I'm going to give it to a human, I'm going to give these people, not give this drug.

So this is not what caregiving is about. Prospective clinical trials is not being a caregiver. Being a caregiver is sitting with a single human and trying things. That's always what it's been like. So medicine has embraced this idea that's also laced into their own arrogance about, oh, it's what Stasha is saying based in controlled clinical trials. No, because you're never going to be able to set up a controlled trial that's this complex.

The other way to look at it is evolutionarily. Are we the same animals as squirrels and raccoons and snakes and every other animal? When you look at their biochemical pathways, are they the same? Do we share the same biochemical pathways as bacteria? Yes. That means every single one of these things that we talk about with another human in a room are based in a general belief system, really, about what's right.

In my belief system, you don't go to the doctor because you're not sick. So my idea would be, you know, there have been people out there, and there is a whole set of people that are studying longevity. The people who don't get sick, who don't go to the doctor, they're not even addressed. We don't talk about them. And they're the people, in my view, who are sleeping normally and repairing their body so they go, well, why would I want to go to the doctor? You tell me I need to go to the doctor? I feel fine. So it's looking at it through a different lens.

Kirsty Cullen

This has been fascinating, and as you said, there's a wealth of information that sits behind this, which is very complex. So if we want to direct people to learn more about your studies and your work, where can we send them to?

[01:14:24] Stasha Gominak

Thank you for asking, drgominak.com. No dot after the doctor, drgominak.com. And if you just put in something that's kind of like Gominak and vitamin D, my website will pop up.

Now I'm really trying to get more support for the people who want to follow these ideas, and it's been difficult for me. I'm old. I retired from medicine. I did not train on having an online business, and now it's quite obvious to me that people want to be supported as well. I do individual coaching, but I also have this workbook that's your personal assistant, and it's got a journal involved because you have to write this stuff down so you can go back and say, oh, I was doing this then, and that's when so and so came to visit. And this is what happened to me.

So there's an actual workbook. But there's also a question and answers session once a month. And we have a private Facebook group. And I'm starting to do courses that are cheaper, that are designed for lay people that go into this more in depth. That gives people the chance to ask questions about details about it.

And also to ask for references. Because what I find is the more people that I talk with, the more I get more information, this iron bit that I just got on a rant about, that happened in one of my clients where it just made a total difference in what her Oura ring was recording, and she felt totally different. And I go back to the biochemical pathway, and here's this iron attached regulatory enzyme.

So the more that we talk to each other and become a community, the more we trade ideas and the more I learn and everyone learns. So that's one of the things that we've done. So it's now a RightSleep program where if you sign up, you actually also have access to videos about children, fertility, pregnancy and all the question and answer sessions. So it gives you a place to learn more and to actually talk to other people who are interested in the same belief system.

Kirsty Cullen

I mean, I couldn't agree more. We're constantly learning from our clients, and it's kind of what enriches our clinical practice and our knowledge on a daily basis. So those sound like amazing resources. So I do hope that people will come and have a look following this talk. Thank you so much for your time and your experience and your wisdom today. It's much appreciated.

Stasha Gominak

Thank you so much for asking. I'm thrilled to share these ideas.