Spermidine UNLOCKED: Reverse Aging, Boost Immunity & Thrive After 40 l Leslie Kenny l Ep #420 Transcript

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Introduction and Sponsor Messages

Hi, welcome back. Natalie Nidham here, your host. After facing infertility, autoimmune disease, and a life-limiting diagnosis, my guest today, Lesley Kenney, began questioning everything from conventional treatment models to how lifestyle, grief, an Oxford-based longevity expert and graduate of UC Berkeley and Harvard, Leslie personally reversed lupus rheumatoid arthritis and infertility, later giving birth naturally at age 43. We explore how silent inflammation accelerates aging, why thyroid health is often the missing link, and the role of a molecule called spermidine in activating autophagy.

It's a deeply personal story woven into some of the most compelling longevity science we've covered on this show. Leslie has an incredibly generous offer for you when you visit OxfordHealthspan.com forward slash Bionat20 and you get to use code BIONAT20 at checkout and save 20% off your order.

This episode is also brought to you by Troscriptions, Bee Minerals, and Nature's Marvels Bioregulators, all with special offers just for you. All you've got to do to get them is check out the show notes below for details.

Now enjoy the Show. Leslie Kenny, welcome back to the shows. It's been far too long since we've gotten to sit across the mic from each other. So nice to see you today.

Oh, it's such a pleasure to be here. Always fun to hang out with you, Nat. Likewise, and we get to do that all over the world, which is really fun. So just to dive right in.

First of all, I want to tell the audience that we've recorded a couple of other interviews and published them to this podcast. We'll put those previous interview links in the show notes.

So you can, so you guys can get some more background on Primadine. I mean, I think this was one of the first podcasts that we, you were on back in, the day when it was called the biohacking superhuman performance podcast.

And at the time, spermadene was just getting known. It was only just, getting noticed. Um, it's been a while, It's, been, a minute since then, and you've come a long way.

Let's dive into this whole, the whole world of biological versus chronological age. And you've often said that you feel that biological age matters more than chronologically.

So what's the moment you realized that your number really didn't match how you were feeling? When I was age 39, I went through my fifth round of IVF using donor eggs, no less.

My doctor told me that instead of having a baby, that I would have rheumatoid arthritis and lupus. What great news! Yeah, what great new. And she gave me options with the rheumatoid arthritis immune suppressants to really stop the progression of the disease destroying my joints and my hands.

A lot of us rheuma arthritis patients will have nodules and some deformities as a result of autoimmune.

Biological Age and Immune Health

um reactions so i was told to take the immune suppressants but when it came to the lupus she told me unfortunately and this is in 2004 she said there's really nothing that you can do because we don't have any drugs to manage it there is no cure and you should expect it to get worse and in fact she taught me that if she were me she

would not do the IVF because even if I was to be successful, I would only have five years left.

And I only was 39, only thinking about having a baby, and suddenly I have to recalibrate and think, okay, don't bring new life into the planet, think about preserving your own.

That's when this idea of biological age really hit me because I was prematurely aging. This is not what life as a 39 year old should be like. I was having to make plans the way that a 65-year-old back in 2004 might have been told to do.

You have five years left, get your affairs in order. Today, I'll be 61 in a few months, and we're all around the same age. I really feel like the second half of life is just better.

So when I did my glycan age test, which is a biological age, and it's based on immunoglobulin, so how your immune system is, how inflammatory it is. And that gave me an age of 21. And for me, whether or not we agree that the biological age tests are here to stay or ready for prime time or no, I'm always interested in how inflammatory my system is, because when it was highly inflamed in 2004 and I was inflammation too early, it meant disease, the onset of disease.

And now the immune system is in order and it's functioning youthfully. If you look at Eric Ferdinand did an interview recently where he was asked which of the organ systems correlates most closely to healthspan, he says it is the Immune System.

I'm very, very interested in doing everything I can to preserve immune function as I get older. Yeah. I mean, listen, from where I am sitting right now, which we're not going to talk about me today, I could not agree with you more.

And I love that you define glycan age as a measure of the immune system. Because I think a lot of people run around talking about glycon age, like, look, Well, not exactly.

It's a very useful, but very specific biological age test. And I could not agree with you more on the immune system because fundamentally, I can't think of a single chronic disease or disease of aging or condition of ageing that is not in some way, shape or form either driven started or affected by the immune system.

And that includes neurodegenerative diseases, cardiovascular disease, cancer for sure. cancer at a hundred percent. Like every single thing that you can think of is fundamentally goes back to the immune system.

And a lot of people will say, but you know, it all starts in the gut and guess what else starts from the guy. Well, a 100% agreement on the 70%. When you think about biological agent practice, you now, how should people really think it a motivational metric, medical tool, Or do you think it's become a bit of a marketing trap?

It can be all of those things. But for me personally, it is motivational. It's like a dashboard on the car. When the light goes on, the little red light, goes and says check oil or check battery life.

I know that I need to take note. At our age, we will all be getting C-reactive protein tests. That's a pretty commonly given inflammatory marker test.

If you're an autoimmune patient, things like cytokines, TNF-alpha, IL-6, these immune markers also will tell you a lot. When I was first diagnosed my markers were terrible and life-threatening and over the years Since I have you know restored my immune system sort of reset it and remove the triggers to it I Have focused on getting those checked every single year.

They're not common biomarkers to check here in the UK where I live, and I send off to the continent to get them checked. But I'm always looking for these markers to nudge me in right direction.

So I don't get despondent. Obviously, if you get a cold or a flu, those markers will go up, but they're just they are good indicator, right? Are you getting, yeah, you know that game Marco Polo and the pool and you hear Marco, go

closer.

That's all of it. It is. We're just kind of trying to go to where we want to catch. No, and that's a beautiful analogy. Hey, folks, I just wanted to throw a little message in here for those of you who are sending me all these incredible questions on social media or through YouTube or even on Spotify, wherever you're listening to the podcast.

I wish I could get back to each one of your personally, but unfortunately, And because I cannot, I created, about a couple of years ago now, a membership community where I get to hang out with people just like you.

I do live weekly Q&As, almost weekly anyway. We also do have podcast guests come in to answer everybody's questions and do presentations, you get to interact live with those podcast guests.

We will sometimes do challenges with some of the partners. Like in 2026, we have a mitochondrial enhancement challenge coming up where we're going to be testing mitochondria function.

we are going be to testing people's deuterium levels. If you haven't heard about deutereum, We've got podcasts coming down the pipes on that. And then people will be invited to follow a personalized protocol and then retest their mitochondria on the other side.

We offer that in the membership community and we do it at incredible discounts that you just can't find anywhere else. So if you're interested in hanging out with me and other like-minded people, which actually happen to include some pretty awesome practitioners and even some previous podcast guests who've come and joined the community, then I invite you to check it out on my website natnidam.

Trauma, Stress, and Autoimmune Decline

com slash the dash longevity dash community or just go to natnadam dot com and look for the longevity community tab at the top of the page. Click on that and see if this is right for you.

I would love to see you there. And we could make 2026 our best year ever together. So once again, that's natnidam.com. Just look for the longevity, community, tab, at, the, top, of, page, now let's get back to the show.

What do you think you were doing in your life right before your health crashed? Like, What did that season really teach you? And I have a feeling that maybe there was some stress involved.

But, you know, do you feel that stress was the accelerant to the aging or was there, when we think back to time before? Yeah. Well, it's very interesting.

So certainly there is a lot of stress. And, I think, a of us with type A personalities and I'd gone to Harvard to do my MBA. I'd worked in banking in Switzerland.

I think that these are things that are naturally stressful. It had my own business that was venture capital funded. These were stressful times. But when I finally got my thyroid, my Hashimoto's diagnosed, the doctor who diagnosed me said, your cortisol levels are so low, it's a wonder you're even able to stand up.

And I would guess that something dramatic happened to you in your teenage years, this has been going on for a long time. I said I can't think of anything, I had a perfectly normal childhood and then I remembered, oh yeah, my dad committed suicide, Oh yeah I found him in the garage, he hung himself.

Oh, yeah, I was in a house fire, you know, like running through the house with the flames behind me. Oh yes, i had a grandparent that was much beloved that died and this all happened within a four month space and I had to move schools, of course.

And if you've ever heard of the the ACE test, which is a childhood trauma test. that on that metric of 10 questions, I score a four. So if you score four and above, you are at a greater likelihood to have some kind of a disease.

And I think that you have two and a half times the incidence of cancer. You have seven times, the incidents of mental health issues. It's really quite interesting.

I'm sure that some of the roots were there. I mean, what you just said is so incredibly powerful, right? Because it speaks to the impact of stress and our previous experiences way back on on our body's ability to keep us safe.

And I interviewed once someone recently, actually, Dr. Amy Apigian, who wrote a book, The Biology of Trauma. What she explains in that book which is, it's the first time I've really heard it articulated that way, is that those early childhood events basically prime your body to set guardrails around what it needs to do to And there's the Body Keeps the Score book, the Biology of Belief, all of these books kind of preceded her work.

But because she's a medical doctor, one of the things she has done is tied back this trauma event to our physiology and biology. And what you're describing which is incredible.

Like in four months, the amount of loss that you experience as a child, The loss of safety that would have experienced would essentially have probably programmed your body to say, Holy jumping, like to keep us safe.

We need to keep these guardrails super tight. So whatever, you know, so whatever then transpired in the years following the autoimmune issues, that kind of stuff, and potentially at another really stressful time when you're trying to conceive a baby, You're being told that you have five years to live, which is Like, who could even imagine such a thing, right, as a 39-year-old?

Exactly. It was pretty inconceivable. And so it would have challenged your body to say, whoa, we're back there again. I think that what it does is it makes your nervous system very trigger sensitive and it just means that the threshold for stress is lower than for other people.

So your resilience bucket is not as big and that leads to chronic that can lead to chronic inflammation, low-grade chronic information, and that inflammation or silent inflammation that prematurely ages us.

And this was something that I read about in a book I relied heavily on at the time. I was trying to heal myself called The Anti-Aging Zone by Dr. Barry Sears.

He argued that those of us with chronic disease were all premature aging. Now, chronic diseases on the rise all over the world. which means that a lot of us are actually aging a LOT faster than we think we are.

And so really the question is what can we do to put the brakes on the speed at which we're aging so that we can delay the onset of the the diseases of aging.

That's the million dollar question, right? You clearly found some answers because you've done a lot of that work and here you are 30 years later, 20 years, later youthful and vibrant.

Being able to conceive and deliver a healthy baby girl at age 43. Having been told that I was infertile, that my eggs were no longer viable, that really makes you rethink yourself.

Whoa, my body's failing me. It's older than I think it is. My eggs are no good. And then to just have it happen out of the blue, you know, once the thyroid got fixed, it happened within weeks.

That is how immediate it was. Yeah, let's talk about that a little bit. I want to know because here you are, You're 39 years old. You've been told all these terrible things.

you've being told to, Let go the idea of becoming a mother. and on top of that, figure out a way to put your affairs in order. So what was the first no you said to conventional advice?

Like when did you say, yeah, no, this isn't happening, you know, and what did You say yes to like, what Was that turning point where because anybody else would have gone home crawled under who do they and just I don't know

what.

As a patient, we have two options. We can either accept the diagnosis we're given or we can protest. I protested because I was so upset about this. Although my doctor continued to say there isn't anything you can do, I just thought it stood to reason that a patient who didn't drink, didn' smoke and wasn't sleep deprived had to be able to do better than a patients that was.

So it seemed to me from a common sense point of view that surely there was something I could do and my whole goal was simply to make myself comparatively better.

Even if that just meant 1% better, it would bring me 1 percent closer to meeting my doctor. My goal was meeting her halfway. And I thought, well, if I meet her half way, then she can meet me halfway and she could cure me.

At this point in time, I'm still thinking she's like the mechanic at the automobile garage. She's going to fix me, and I bring myself in. It's completely passive.

What I didn't reckon with was that in fact, in becoming an active patient, I actually was able to contribute to reversing my diagnosis and staying in remission for over 20 years.

And it wasn't just lifestyle things that I did. I want to make it clear that did rely heavily on science and used a infusion called intravenous immunoglobulin.

or IVIG and it wasn't cheap. It's made up of antibodies donated from thousands of plasma donors and there's always the risk that you could get an infection from any one of them because they might carry a disease that we don't yet know how to identify.

But because I had the five year, you've got five years left to live. I thought if I don t do something in action can be deadly too. So Well, you're weighing risk reward ratio, right?

Exactly. And there had been a small study in Germany with 13 lupus patients in 2000. It was published at the end of 2000 and every single one of these patients had improved.

This was something that my doctor had said was not possible. She told me to expect it to get worse. So when I discovered that that publication, and I discovered it through other patients on the lupus autoimmune boards, I thought, here's the evidence that I need.

There's something to this. If every single one of these patients did better, what's statistical probability of that happening? I know it's a small cohort.

So my doctor declined to prescribe me the IVIG. and I went back to the patient bulletin boards and through other patients, I found a doctor in San Francisco who was willing to take me on and prescribe me two rounds of IVIG to reset my immune system.

And the idea, it's kind of like resetting your laptop after you've got a virus. spinning wheel of death. Yeah. So I thought, okay, let's reset and then let us remove any triggers to this system in the future.

And that meant completely revamping my lifestyle. Diet first and foremost, and I know it's hard for people, but your taste buds change.

Reversing Autoimmunity Through Lifestyle and IVIG

You can adapt to a lot. You know, this is saving a life, right? So, the stakes are high. So when they're that high, you find you are willing to do pretty much anything if you've got a personality like me.

And yeah, all I can say is that if there's anybody out there listening who's been told there is nothing they can do and

that they've a limited amount of time left, I'm living proof of what actually is possible.

don't give up hope. Yeah, no, I really love that. So on the lifestyle side, what did you do? Right? What was the first thing that you felt moved the needle?

Was it changing your diet? was it modifying your stress, your sleep, relationships? And like, well, What did it? Well, it did. I did, where did all of that?

Where did You feel you got the First Traction or the 1st Bit Attraction where you're like? Oh, this is helping. IVIG definitely helped, so I will give credit to science there.

And then the next thing I would say would be diet, because gluten, dairy, and eggs were all problematic for me, yet I love them. I was eating them all the time.

When I had been living in Switzerland, I used to eat a lot of fondue and, of course, nice crusty bread inside the fondu. Growing up, a lot of grilled cheese sandwiches, right?

I mean, I had a kind of junk food childhood, unfortunately. And so all of these things were problematic and I have to remove all them. Now I've been able to reintroduce the eggs, but it was very interesting how my inflammatory markers dropped when I changed my diet.

because those triggers were no longer there. And I am always testing because just because you were allergic before doesn't necessarily mean you always will be allergic.

Conversely, there may be things that you do become allergic to for a while. Not a true allergy, but a sensitivity. Yeah. So that's why I'm always looking at my dashboard to see what I should be doing.

Are you also looking at your zonulin numbers to see? Yes, I look at every single time I test. So every six months. Yeah. Zonuline, for those of you who don't know what it is, is a marker of how leaky your gut is.

Basically, it's about the space between those cells that line the gut that might allow proteins through. That would increase the chances of someone's immune system reacting to a food.

I think this is an important point to underline, especially that you do this. You want to first test what's the integrity of my gut lining, because if you don't do that first, you're going to show up with a lot of food sensitivities that may just be there because you have the wrong protein in the place at the right time.

Yeah, exactly. And it's another reason why spermidine is interesting to me is because it actually tightens up those tight junctions in the gut to make it impermeable.

Yeah. I love that. We're coming to spermidine. Like I'm dying to talk about spermadine, but I just want to take people through this. Well, I'll say one other thing, trauma therapy.

I'm not glad you said that. It was a four-month period to me. I mean, I chuckled earlier when you say your dad died, not because your Dad died. That's horrible.

But only because you had first said, well, there was really nothing. And then I realized, oh, in a 4- month period, i lost my father, lost a grandparent.

You had all these dramatic events. Even over a 5-year period that would have been traumatic. Never mind in 4 months. The amount of reeling you would've been doing would be insane.

I think that you put up a kind of protective shield to just not deal with it. And it took me years to be able to cry about his death because I to survive, the body locks away those emotions.

So the idea of trauma therapy really resonated with me. In my own particular case, I wrote letters to my father. He'd been an alcoholic, I'd done his only caregiver.

I had lived alone with him, so I was the child who was always taking the vodka bottle, emptying it out, adding in water to pretend it was still there, which of course incensed him.

So, you know, writing letters to say the things that we need to, say to the people who are important in our lives, who bear witness to our and just bring closure.

And then I burn those letters. This letter writing practice is a well-known trauma therapy practice. So that was very useful. I did do some mind-body medicine based on the work of Professor Gerald Epstein at Columbia University.

He has a book called Healing Visualizations. Um, I did Mayan uterine massage, which is a physical manipulation of the uterus. And actually it did correct my tipped uteres to the amazement of my IVF doctor who said, who had actually suggested surgery for it.

And I tinctured herbs. Honestly, I looked under every rock for anything I thought might work and was open to it all. But the one thing that I had real difficulty with was the idea of chronically suppressing my immune system with these immune suppressants.

Exactly. And we know that autoimmune patients who do do this are more susceptible to cancer. Why? Because the immune system is there to surveil for cancer and get rid of it in the same way it would surveill for pathogens, virus, bacteria.

So we need our immune system. But back in 2004, the standard of care was to suppress the immune. And I got that in the short term. Let's stop the damage.

Yeah, but as a long term strategy, I was very guided by my by my grandmother and grandfather on my mother's side who had studied medicine in Japan. And I had always been taught that the goal of medicine is not just to suppress symptoms, but to restore the body to balance so that this symptoms resolve naturally.

The body has an innate wisdom of how to do this so long as it is in its balance point. So my overarching goal was always Restore the whole system to balance That means sleep that means emotion.

So the trauma therapy That needs movement And all of these things together Restores the system too balance. That's so powerful and and honestly, it's music to my ears, you know, It's my it ultimately my belief, right?

so in terms of And you've talked about this. I think the most dangerous thing a person can be told, anyone, a man, woman, women in midlife especially, and whether it's about her menopause symptoms or autoimmune disease is, look, there's nothing you can do about it.

This is just the way it is. So how do you balance this radical responsibility with compassion so that it doesn't become self-blame? our bodies are there to protect us.

And if they make a choice that goes against our favor, it is usually done as a stopgap to us from something else that is much worse. So that's how I look at what is happening in the body.

It's up to me to support it so that it doesn't have to make those decisions, those bad choices, right? It sort of the lesser of two evils. The body will always choose the Lesser of The Two.

It is kind of like with with gray hair and adrenaline and stress, and I might have talked to you about this before, but it's so interesting. There is a known pathway to gray her through stress.

So when you're stressed, you raise adrenaline to deal with the stressful event. The adrenaline is there to help pump your muscles so you can run away, fight, flight or flee.

And then the liver releases catalase, glutathione, superoxide dismutase to turn the adrenaline from hydrogen peroxide into harmless water. But if we don't have any of those three antioxidants, it doesn't make that conversion.

And so, it's not great for us to have a lot of adrenaline chronically in the body. It's terrible for the heart. So, the buddy says, okay, let's make the next decision.

And it is not to great to loads of hydrogen peroxide, but we have to do this, so we save the hurt. Yeah. That makes the conversion to hydrogen per oxide.

Then it up to the liver to take over. If the livers can't do it, guess what? We get gray hair. so that's an example of where the bodies making the choice between the lesser of two evils.

And it makes choices like that every day, all day for us.

Thyroid Dysfunction and Hashimoto's Recovery

And the less of a burden we put on our bodies by getting good sleep, good movement, food, relationships, joy, the easier it is for the body to stay in balance and the fewer of those bad choices it has to make.

Yeah. I mean, for sure in the hierarchy of needs, the body's going to pick the heart over how your hair looks. Exactly. Let's move to thyroid because you mentioned thyroid a little bit.

And I know that thyroid was a big deal. It was big piece of your journey. So what role did thyroid autoimmunity and Hashimoto's ultimately play in your recovery story?

Like it wasn't just about the immune system now. Now we're talking about. The function of a very vital organ. Yes, absolutely. It's a good question. So because my symptoms came in my hands and pain in hands, my doctor sent me to a rheumatologist and medical doctors in the current system tend to stay in their own lane.

And so as a result, I was diagnosed with rheuma to logical diseases, lupus and rheutoid arthritis. But nobody thought to look at antibodies to any other parts of my system.

And that would have meant I would need to be sent to an endocrinologist because endocrinologists look at the thyroid. Now, around 10% of patients with lupus are going to have Hashimoto's where the immune system attacks the thyroid and very commonly co-occurs with RA patients as well.

But it didn't get caught. So doing the IVIG, changing my lifestyle did stop the autoimmune attack. But unfortunately, my thyroid had already been compromised.

And I didn' understand this. until I adopted my first daughter and I started looking at the other mothers on the playground and they'd have three kids with them and a dog and then be going to their garden allotment to, you know, till the soil.

And then they were going a scout troop meeting and thought, how are these women able to do this? And I feel like I'm dragging myself out of bed, right?

I was having such a hard time functioning, I felt brain fogged And I only had one kid and I wasn't working. So I went to Dr. Google, I put all my symptoms in.

I know we're told we are not supposed to do this, but honestly, it was helpful. And it just kept coming back. These days with the more advanced AIs it's become much more powerful for sure.

Exactly. At the time it is in its infancy, right? Yeah, yeah. Anyway, even in its infancy, it kept coming back. Hypothyroid, hypothyroids. So I went to the NHS GP who said your bloods are all normal.

I thought I'll go to a private doctor. The private Doctor on Harley Street said, your Bloods Are All Normal. This is an endocrinologist now. I thought, this is just not right.

I know how I feel. And back on the patient bulletin boards, I told my story and thank goodness for these other wonderful, sympathetic patients who said, you're being fobbed off.

This is the terrible standard of care if you're a thyroid patient in Great Britain right now. You have to go see this doctor, Barry Peatfield Durant, who actually looks at clinical symptoms.

So what that means is that in Britain, if want to get diagnosed today with low thyroid function, It can only be done based on a blood test. There are no clinical symptoms such as low blood pressure, cold hands and cold feet, low body temperature, none of this can be considered.

And that frankly enrages me. I mean, and I have met too many women who have gotten pregnant, they get to five months because the baby is dependent on the mother's thyroid hormone for its thyroid.

The women, they sadly miscarry. And if you mis-carried five months because your baby doesn't have enough thyroid, it's a quality control thing because the brain needs thyroid.

The infant brain need thyroid to develop properly. But the trauma to the mother because this is now a vaginal birth. Your milk comes in. It is a heartbreak.

Yeah, it's, very hard to recover from. And I have so much compassion for these women and I'm always going on about how we women have got to advocate for our thyroid health.

You know, we talk about hormone replacement therapy. Well, guess what? Thyroid is a hormone too. And in both men and women, it will go down as we get older.

So in some, among some doctors giving even a subclinical dose of thyroid hormone is part of an anti-aging protocol. Yeah. That's my thyroid story. What biomarkers did you track?

week to week as you're on this journey now, you finally found the guy. You're taking your symptoms seriously. Were there biomarkers you were tracking week-to-week?

They're so easy. Anybody can track these. Yes, I was tracking my My basal body temperature. So that means when you are lying down in bed before you raise the upper half of your body to get out of bed, you take a thermometer that you've got on your nightstand, put it under your tongue and just check to see where you're at.

If you are below the normal body temperature, I want to say it's 37.6 in Celsius, then you should consider the thyroid. You do that over five days, five consecutive days.

And another thing is pulse. So my pulse rate, again, while you're lying down, take your pulse. And what I realized was whenever I went to see doctors, they would say, wow, you've such a low pulse, that's so athletic.

Without ever asking me, did I do any exercise which I did not. Yeah, which, I was not an athlete. In fact, this was a sign that my heart was having a really hard time pumping.

My body had essentially gone into hibernation. because I had so little thyroid hormone. So as I started taking Armour Thyroid, which is desiccated pig's thyroid, and the reason I take that is because it has not just the thyroid hormon known as T4, that's the precursor to T3, the bioavailable hormone, so our cells all have receptors not for T-4 levothyroxine, but for And I don't convert T4 into T3 well.

And a lot of other people don' t. I think a lo of people of Irish heritage or from countries where there were famines, they don t convert so well because for those populations, it was a It was a survival benefit because you could slow down on fewer carbs.

You're metabolically slower. I started on armor thyroid and my doctor taught me how to titrate up until I got to that 37.6 basal body temperature. And then I stopped and he said, in the future, you have to judge this yourself because when it's very warm, You're not going to need as much thyroid hormone.

So always check. And when he gets cold, he may need more. I loved how he empowered me. That's incredible. Right? Because obviously things change between medical visits.

And it was a great gift. There are thousands of thyroid patients in Great Britain who absolutely love this man who sadly was hounded out of practice by the General Medical Council because he continued to prescribe thyroid hormone to people with clinical symptoms, even though their bloods were, quote unquote, normal.

Within the normal range. It is criminal, yeah. We're not going to dwell on that. So can you maybe share with the audience some of the common healthy habits that people think they're practicing that can really backfire for an autoimmune-prone, stressed-out woman?

Are there a couple of Yeah, fasting is one. I think that especially for someone who's hypothyroid, if I fast for too long, and of course, there are many definitions of fasting.

Fasting is just abstaining from eating. And of, course when we sleep overnight, we are effectively fasting, but let's call that an eight hour window. When I meet women who are doing 24 hour fast or three and five or even 10 day fast, this scares me because and the body will tell them because the feedback loop is that their fertility goes down.

Basically, menstruation shuts down If you are hypothyroid, the change in the body is very similar to famine and your body says, wait, food is scarce. I have to down-regulate metabolism.

That means that you will be producing something called reverse T3 or RT3 that sits on the thyroid receptor, blocking actual T-3 from getting to the cell, giving you energy to burn calories and you will gain weight.

And so I've seen couples where they go on these fast. The guys do great. They lose all this weight, the women actually inexplicably gain wait. Well, what is happening is this production of reverse T3.

So I always say, be very careful if you are hypothyroid or even subclinically the hypothyroid because a longer fast is not good for you. And you can fast with a window of 12 hours.

That's perfectly fine. I think that's fine I love that. And I think what you're getting at is any of these hormetic stressors, right? So stressers that are supposed to make us stronger.

Again, it's within the context of a body that is more or less in balance. If your body's at a balance, these hermetic stresses that all the happy influencers on Instagram are telling you are the best thing for you, whether it is cold plunging, fasting, crazy workouts, your body is not in a state right now that it can take advantage of that in positive way.

It's just adding more load to the bucket. Yeah, I feel the same way about cold plunges for women. I'm much, much more cautious about them than a lot of other influencers.

We had a woman here in the UK who did it who sadly died. That's obviously an extreme outlier, but I do think that Women are here to reproduce and that means that we are constantly, our bodies are, constantly scanning the horizon, sensing any kind of threat to a new baby and cold, extreme cold.

That's a threat. Yeah, as any of these stressors. And the food, right? And extreme exercise, too. A hundred percent. Running from a bear. Yeah. So everything in moderation, and if you do the cold plunge and you feel like, oh, this is killing me, well, stop.

100%. All right, let's move into autophagy. Let's start to talk about fixing things, but let us talk this mechanism that the body has to fix, to repair or to get rid of damage.

Autophagy, Spermidine, and Cellular Renewal

And so at one point, did you realize that no, okay. Symptom management is great. Inputs are great, all this thing. When did start looking at cellular renewal?

Like when did your attention go? Okay, I'm going to go even deeper here. It was probably this nature review paper that I'm holding up. I love that you're holding this up if you are watching this on YouTube.

You get to see it. Yeah. And it is a paper co-authored by Professor Katja Simon, an immunologist at the University of Oxford and now also at Charité Hospital in Berlin.

And she was working at the Kennedy Institute for Rheumatology in Oxford and essentially discovered that a very common compound in food called spermidine could activate a cellular renewal process known as autophagy, which was also the subject of the 2016 Nobel Prize in Medicine or Physiology.

And when it did this in the presence of elderly immune cells, it rejuvenated them. That word re-juvination, I don't use lightly. But as you can see from the title, autophagy in renewal, differentiation, and homeostasis of immune cell, that's pretty powerful.

And in another paper, she actually does use the word, rejuvination. This is not something that's supposed to happen. Of course, we all learned about Ponce de Leon and his follies looking for the fountain of youth.

How ironic that it actually exists in all plants. And we actually, when we're young, produce it in our tissues, but our gut when it is in balance can produce too.

Unfortunate thing is that just like with hormones, whether it's estrogen, progesterone, testosterone, or thyroid, our production of spermidine goes down.

So first, it goes in our tissues around age 26, 28. And then if our gut is compromised by ultra processed food, by broad spectrum antibiotics, then we produce less or even none at all of this.

And what's interesting, autophagy, you can activate it by fasting and you an activate by exercising. But guess what? A paper came out last year which said that If you exercise or if you fast and you do not have presence of spermidine in your body you, do NOT get the benefit of cell renewal.

Interesting. That was a paper that came out of Germany and I just thought this is a lot more important than we think and sometimes you know it's kind of like the glasses at the end of your nose we're like where are my glasses It's like it's hiding right underneath us, underneath our eyes.

And it is actually really fascinating. The Japanese have done a lot of research on this, and the Nobel Laureate for his work on autophagy is Japanese.

He's created something called the Japan Autophagi Consortium, which is a governmental industry and academic body because for Japan, which is aging more rapidly than any other nation on the planet, they see this as a way to keep their population healthy.

Why do you think that is? Why do you think they're doing this? No, why are they aging faster than anybody else on the planet? Well, not when I say not anybody.

I know. Why don't you? Why? Do you. Think accelerated aging might be an issue in Japan? That's a question. So accelerated ageing, it's chronological aging.

It's more that that they don' have enough babies. Oh, they have an aging population. Okay. Population. Not that. They have accelerated. Aging. As a matter of fact, They.

Have decelerated. That surprised me. Yeah, I would have thought they were aging No, they are aging more slowly. So any of us in the West who think, oh yeah, our countries are going to age like Japan, you better think twice because only 4% of the Japanese population has obesity.

Whereas in America, it's 42% right now in Great Britain. It's less than that, but it can't be too far behind. Which means that, again, as I said at the beginning of this interview, any of us with chronic diseases, and I will put obesity in there, we are aging faster than we think.

And so the Japanese are actually aging more slowly, but they have a larger cohort of people, this 30% that are over age 65. They don't have enough young people to support taking care of all these older people.

So what they need is they as long as possible. And they see autophagy as a way to do this. Because if it's not just in the immune system that you can have cell renewal, you have it in your skin, your hair follicles, I know your gut, heart, brain.

The heart is a very big one. Um, and I don't know if, if or when I should go into the cardiomyocytes that govern how our heartbeat starts, but you know, this is a pool of cells that we really want to keep young.

And one of the ways we can maintain them is with autophagy. So, okay. One very quickly. Can you define a top for if somebody's sitting and listening to this podcast right now and has never heard of autopsy and there's no clue what it is in.

as few, a little time as possible. Can we just give them a very short description of what is autophagy, which is one of the principal hallmarks of aging, just to be clear.

Exactly. Marie Kondo for your cells. It's housekeeping in your cell. Gets rid of old mitochondria, old organelles, all proteins, and it recycles where it can.

Yeah. Beautiful. And autophagy, autofaggy, self-feeding. So basically it's the cell looking inside. This is the work we should all be doing for ourselves.

Looking inside, going, what do I need to get rid of? I love the Marie Kondo reference here. Like, why do i need get to rid off? What sparks joy and what doesn't spark joy?

Exactly. I Love it. What are the biggest myths that you're hearing about autotophage in the longevity space that would just like to just squash right now?

Is there anything out there? Well, I think the biggest one is really around fasting, you know, heavy duty fasting in particular for women. I see it work well for men, these long fast, i don't see working as well.

For women, again, because of the nuances around women's bodies and this, this higher, more elevated sensing of famine, you know, stressors, basically.

Do you think that's different for pre and post menopausal women? Because I feel like in a reproductive years, a woman's going to be much more sensitive to this post-menopause, maybe we can play with things a little bit differently.

You're right, except that our thyroid hormones decline. Right. And that is the, if you are hypothyroid or you were subclinically hypathyroid, I'm cautious.

But you can experiment and you push the boat out from shore a little bit further, start with 12 hours, try 14, see how you feel. You will get a feedback loop.

And if you you more fatigued after going on a, eating in just a four hour window, then that's not what should happen. you should not feel more fatigue.

Maybe you need to widen your eating window to six or eight hours. Okay, so if autophagy is a cleanup crew, what happens when it's chronically understaffed?

Then the garbage piles up, right? You have too much rubbish, and we all know what it is like when the kitchen isn't clean, the pots are dirty, your fridge is mess, you can't function.

So dysfunctional autofagies, as you said, is one of the 12 hallmarks of aging, but mitochondrial dysfunction can come together with that. as the battery packs of the cell.

And one of great things about compounds like spermidine is that it actually activates another cellular process called mitophagy, which just means sparking new mitochondria.

Yeah. I love it. Um, all right. So the biggest lifestyle, autophagy killers, you see, is it poor sleep, overeating, just over, not even nourishment, over eating.

We're so, we're, so accustomed to having snacks today. When I was growing up as a kid, I never got a snack. at 10 o'clock in the morning, right? We just, we went to school and it was lunch at 12 and you didn't eat anything.

I mean, when my kids were at school, it's like, oh, they have to have their 10 O'Clock snack. And, and now we, you know, eat from, from morning all the way until before we go to bed, maybe at 11 because we're eating while we were watching TV.

Not saying you and I are doing this, but I'm saying that this is unfortunately, not uncommon practice in some countries that have a lot of ultra processed foods and a lots of ads and instant gratification.

And when you overeat like that, you don't give your digestive system but also the entire cellular system an opportunity to just clean things up because you're just pushing things into the factory nonstop, right?

Yeah, yeah, you literally can't clean up. You can clean. Yeah. Exactly. Okay, so you talked about how you first encountered spermidine, and you came across this paper, which I would love it if we could get the link to that paper because of course in the show notes for the audience.

What made you think because you know, we're filled the world is filled with these trends in supplements. Oh, this is the big supplement right now. That's the biggest supplement.

I can say five years down the road now for me, spermidine has remained. But what made you analytically, in analytical Leslie, look at spermidine and say, yeah, the same a trend.

This is a thing. The immune system obviously was a big one for me personally, because like Eric Verdin at the Buck Institute in Nevada, California, who said the immune is the big player in aging, I knew that this was the case.

And if I could simply rejuvenate my immune, system I had a good chance of avoiding things like cancer, but also COVID. So my introduction to spermidine was in 2019. And I decided to go live with this during COVID, and I really wasn't sure if it was a good idea, but Professor Katja Simon, the immunologist, said, Leslie, you have to do this because we have nothing right now to fight COVID and this might help.

you have to get it out. Possibly because I was a Swati student and listened to my teachers, I thought, okay, i'd better do this. I did. And I also could see that polyamines, swirmidine is part of a class of compounds called polyamin.

There were over 13,000 papers on polyamine. Wow. People had studied them for decades, but they didn't understand autophagy. They didn' make the connection between spermidine sparking the cell renewal.

And so that was one thing. But the other thing that got me very interested was that spermidine does not activate autofagie by inhibiting mTOR. So, for those who don't know, I like to think of mTOR as the gate or the door, the tor,

to muscle.

So m. And if you are, let's say you're taking metformin, you going to be inhibiting mtor. That's why bodybuilders say, I won't take it on the days that I lift because it inhibits muscle growth. Or even, you know, there are friends of ours that we have in common, and you and me, Matt, who said, no, when I took it, I lost my muscle or lost too much weight.

Yeah. So spermidine does not inhibit mTOR. And as we get older, one of the big problems is muscle loss. Now, if you inhibit mTOR, you stop that muscle loss.

Yes, she'd get the autophagy benefit, but you lose muscle. Here's a way to preserve muscle, You're not stopping mTor, But you're using a different pathway to activate autophygy.

And so, whether you are a bodybuilder and just want to stay swole and still get autofagie, this is great, person who suffers from sarcopenia, like my mother who's 86 and is around 85 pounds, it's terrible for her to fast because the first thing that will go when she fasts is her muscle.

Exactly. She has nothing else. I don't want her get frail and fall over, so I give her Primadine in order to you know, give her the benefit of autophagy, but without jeopardizing muscle loss.

Yeah. No, I love that. And you've basically described the spermidine. One of the questions I was going to ask you is how does speridine ask as a fasting memetic?

And basically just explained it right here, right now. This is where, and so, you, know I think when we use the term fasting, the medic people They don't know what to think.

They're like, but what do you mean? Like I'm eating, how can I possibly be fasting? But what you're explaining is that those cellular mechanisms that we're trying to initiate through fasting can still happen in the presence of appropriate and healthy food, by the way, that you can get the benefit of autophagy without putting your body through.

And there's a lot of people who shouldn't fast, as you've already described, who may not want to fast. So this gives your impetus to keep that cleanup going.

Exactly. It's like sending in some extra housekeepers. And if you've got a 12-room house and you have nine, because I'm saying 12 room because of 12 hallmarks of aging, you send in nine house keepers because spermidine inhibits nine of the 12 Hallmarks Of Aging.

Well, guess what? It just makes it so much easier for your body to handle the other three rooms. These are the reasons I love it. Do you think that that claim ever gets overextended about acting as a fasting memetic?

Do think people ever overstate that? Or maybe is it just that they don't qualify all the other things you should be doing at the same time? Some people see fasting as weight loss, which it is if you are overweight or obese.

And there are many benefits to fasting. One is weight-loss, one is autophagy, glucose sensitivity. There are these things. But if are doing it primarily for the weight lost, I I can't, I'm not saying take spermidine and you will lose weight.

It is not going to be a mimetic of weight loss. Yeah. Is going be in the medic of cell renewal and it can help with that, uh, glucose sensitivity. Um, but it's not.

Going to mean dramatic weight-loss like you might get when you stop. Perfect. Great answer, great. Okay, so mechanistically, what's the strongest case, because you've talked about this, for spermidine supporting autophagy and immune balance from a mechanistic perspective?

What do we know? Well, this is the research done here at the University of Oxford. Yes, exactly. There are several papers that have actually come out and we know in mice, we now in elderly cells that if you take these immune cells then that are older and again Older is biologically older.

So I don't care what your chronological age is if you have an autoimmune condition You are biologically older just like I was yeah then you if You have spermidine you will rejuvenate those immune cells so that they function again as young and there have been a some really exciting papers that came out in the last year from a lab in Japan at Kyoto University.

The fellow's name is Tesuko Honjo, and he won the 2018 Nobel Prize for his work on cancer tumor genesis. Now you think again the immune system and cancer, what's the link?

Well, the system surveils for cancer. As we get older, why is it that older people tend to get more cancer? It's because their immune systems cannot properly surveil for it.

In his lab, they had a mouse study. They had these older mice covered in tumors and they gave them spermidine. What's so amazing is that the spermidine went to the immune system first and it rejuvenated theimmune cells such that they could now target the cancer and get rid of it.

There's been another paper that came out of China which showed that for breast cancer, patients who take immunotherapy, if you pair it together with spermidine, you get better outcomes.

This is really exciting. It's something that when I last spoke to you, I was unsure of because if you take cancer cells in a Petri dish and you give them spermidine, those cancerous cells will grow.

But if think about it in the system, we ingest the food derived spermidine. it goes to those immune cells that line the gut. 70% of the immune system is there.

They get first call on it. That means you're rejuvenating those cells and then they attack the cancer. So it doesn't get to the Cancer first, it gets to to immune cells.

Spermidine Sources, Dosing, and Product Standards

And that is such a powerful point you just make. For the audience who's listening to this, this is where it's so important when you hear somebody talking about a study.

The first thing you need to do is, was it done in a Petri dish? Was it like in isolation? was done it in an animal? Or was is done a human? Because what you've just described is if we give spermadine, I just want to repeat this because it's so important, right?

If we put cancer cells in Isolation in Petridish and we gave them spermadein, they'll use it to their advantage. But when we systemically consume spermodein Now we have an entire system.

We have a whole body that is going to interact with that spermidine. And in that body, the spermadine first pass is through the immune system, which then will be better fueled to deal with the cancer.

Now, we're not saying that spermidine is a cure for cancer, just to be clear, but that it shows promise. So question to you, given what you've seen in terms of spermadine's ability to help an aging immune or a dysfunctional immune, immune systems that's had a balance, Do you think we'll ever see a medication or a drug that is derived from spermidine?

Like, you know what I mean? I'm sitting here listening to this because one thing I want the audience to remember here is we're not saying that spermidine is going to solve all your problems here.

It is to help at a cellular level to your body's ability to deal with certain things, but it's not a cure. And yet it seems to

me, like, do you think there's ever a world where we can harness spermidine and potentially have it, you know, beyond a therapeutic level to a medication for some of these conditions?

Well, there are certainly papers that say exactly that. And one of those four papers, it came out last year in Los Angeles, thanks to all of them, one those for papers was really that it said, old molecule, new tumor fighting, abilities.

I know it was part of a paper that was published in Nature Pharmacology that that said, you know, targeting aging, it was all about targeting, aging. What are the compounds to to, to target that?

And spermidine is one of them, along with, the usual suspects, metformin, bisphosphonates, rapamycin, right? So they're talking about it, but we would need human trials.

So right now we don't have any synthetic spermidine clinical trials. So human trials that have lasted more than say 28 days. And that I think is a real limitation.

But I'm a food first kind of person because in the food world, and it's something that Dr. Terry Wells taught me, she says that when she cured her multiple sclerosis, one of the things that she did was she ate the rainbow.

And that for her getting it from food was very important because there were all these naturally co-occurring compounds that we might not have discovered yet.

And so she wanted to take them in their whole food nutrient package. And it's the approach I've taken with primadine as well because when you take primidine, you're not just getting spermidine but you are getting spermine another polyamine that turns good genes on and bad genes off so it is for DNA methylation and then you get putrescine which is a precursor to both of them.

If you have that complete package, it actually is part of a recycling loop. So you're not just getting the one milligram of spermidine, you are getting more because you get the machine.

That is the power of nature that we sometimes underestimate. It's beautiful complexity. And it's why I've gone food first, you know, not just from a safety perspective or because the clinical trials we have say in cognition, we're all done with food derived wheat germ, but also because there's so much we don't know.

The more we learn, the less we know Yeah, no, I think that's so powerful. I mean, it's one of the reasons why I personally love the natural bioregulators as well.

Yeah. The natural bio-regulator will come with a cohort. That putrescent and spermine are the cohort, right? Or the reason why desiccated liver as a supplement is a much better multi-vitamin than your multi vitamin of synthetics.

That's a hundred percent and exactly why I take armor thyroid, which is desiccated pig's thyroid because it has the whole complement of thyroid hormones from T zero, T one, two, three, four.

We don't know what T0 and T1 do. T2 has something to do with slenderness. But maybe in 20 years, we'll learn that T0 and T1 are actually really important.

So I take mine from pigs. Yeah. And I actually think that Mother Nature doesn't foolishly produce things that are useless. We just don't understand them yet.

It may not take 20-years. Okay. Spermidine is so great. First of all, is there a way for people to get it from their diet? Yes. I'm a diet first person.

Yeah. Yeah, so mushrooms, legumes, lentils are a great source, beans are wonderful source. And I like making a little casserole with all those beans and with lots of mushrooms.

Shiitake mushrooms are much better than say, chestnut mushrooms definitely pay the extra to get the shiitakes because you'll get more. Oyster mushrooms also good.

And with both of those mushrooms, you get a twofer because they both have ergothionine, which will prevent old person smell. That's a whole nother topic.

I just read about that on Instagram. Come on. It's so funny because when we're young, we all know about sebum because that leads to acne. But guess what?

We have kind of reverse semen as we get older and it sort of sticks in our skin for longer and oxidizes on exposure to air and its hard to wash off. And so as a result, you have to ingest mushrooms that are high source of ergothionine to dissipate the oxidation and get rid of the smell.

There we go. Okay. So shiitake mushrooms and oyster mushrooms. Yeah. Soybeans are good source and anything fermented. Now for people who have histamine intolerance and you and I were just talking about this, You want to be careful with fermented things.

So if you've ever had a mast cell reaction, which I have had before, you need to a little cautious. But if can handle it, natto, a fermented soybean dish, is the highest source of spermidine on the planet.

And the Japanese are constantly microdosing with this. And if you can microdose, then that would be great. It's a wonderful way to do it. For people who find this difficult, you command get it from food derived supplements like Primadine.

And for those, we have powders. So you could just add it to your porridge or to yogurt or your acai bowl or however you wanna take it, You can just added there.

Just don't cook it? Right. If you're going to add it to your porridge, you put it in after you've done cooking. I just want to put that in because we don't want our sperm in.

Yeah, exactly. We're about to launch a gluten-free powder. And it was what we launched at the Grammys. That one is heat resistant, but our wheat germ one, sadly, it does lose potency after around 41 degrees Celsius.

And there's no need. You can put it in your smoothie. It actually tastes really good. What would you tell someone who tried spermidine and felt and say, I didn't feel anything.

I don't know what they're talking about. it's a timing thing. So what I would say is, first of all, if you have any wearable trackers like an aura ring.

Yeah, exactly. We're part of the same. Are the same clubs, yes. The same club, yeah, exactly. Yeah. If you've got a wearable tracker, look at your deep sleep, your REM sleep and your HRV.

Quantified Bob, who I think you know as well, he took Primadine GF and he was like, you now, I didn't feel anything. But then I looked at my sleep scores, my HR and my sleeping scores were up.

And that particular product is great for sleep. And so I would look there. I will check how quickly your nails are growing. Do you notice that you have to clip your nail faster?

Take it for a minimum of three months. Now, my partner has actually been taking this. He was taking Primadine for around, I don't know, let's say a year.

And he wasn't seeing the effects that I thought he should be seeing, but I forgot he's six foot five and a hundred kilos. So he needs a slightly different dose.

So I'm sorry. Yes, it's more expensive. But if you are six foot five and a hundred kilos, you're going to need more.

And I upped his dose and now he's getting the restoration of hair color, which is great.

He's got the little baby hairs. Actually, I've got some here. I noticed these little tiny hairs coming out that looked a little bit like a I don't know, a QP doll or something.

And I thought that's really strange. Then I realized, oh, it's the spermidine. It's growing the hair longer and then the color was coming in. So he's getting that windy band that you get the dark black band from the bottom of the roots, whereas the ends are white.

He needed a higher dose and he needed to be on it for longer. But you need spermidine as you, we need this daily because we excrete it just like you would with vitamin C.

It's water soluble. So you to get it in your diet daily. And again, food first. but when in doubt, then top up, right? Well, I think the supplement, what it does is it takes us into a more therapeutic dose, Right?

Yeah. I that getting your food foundation in gets you kind of a baseline. Yeah, but certainly over the age of, call it 40 or 45. 40, especially for women.

Where your needs are going to outstrip, not to mention the fact that as we talked about earlier, your body's going prioritize renewing the things and applying the spermidine to the thing it considers the most important for your survival.

That may not be your hair, skin and nails. You know what I mean? Like it's going to be other things under the hood. And so, I know with my mom, who you know, like that was my first exposure to primidine was I sent it to my mother who'd been losing her hair.

She was in her early eighties at the time. And within three months, I get a call from my father and I did not tell them a thing. I just said, take this.

And people hear me talk about this all the time. The good news with my parents is that these days they just do what I tell him to do. Um, and, um, And my dad called and said you know, is there anything you've given your mother, any of the things that you're giving your Mother, which weren't that much at the I think she was taking magnesium or whatever else that might've done something to her hair.

Of course I have this moment of terror going, What do you mean something? Did she lose more? What's something are we talking about? He goes, her hair's amazing.

Like all of a sudden it's growing back. And I was like, and I think I called you. Yeah, you did. Because I had put her on a double dose, right? Because again, just like your partner who is a bigger person so needs more, to me, an elderly person, especially to get started, might need more.

Yeah, I would agree with that. And you start at a kind of Kickstarter dose of, say, two milligrams. Yeah. Then you can go to a maintenance dose. I think that works better if you are older and you have greater biological need.

It's very interesting how the body knows wisely where to allocate these resources. Um, i will just say one thing about women, because if Your body is going to preferentially give the spermidine you have to your baby to grow and breast milk is full of spermidine.

So when you are breastfeeding you were giving your Baby a load of spermidin and your body says I don't we keep the mother alive and but we need to support the survival of the next generation.

That is the priority. So that's why women who've had babies and have been breastfeeding tend to find, my hair is falling out. Why is that? So at that point, you should really top up.

And also if you've a virus because spermidine activates a wonderful garbage clear up process called virofagy

where it bags up all the viruses. If you lost hair after COVID or another flu, that's what happened to your body.

We're saying, let's throw the kitchen sink at it. we're going to take the spermitin that might have gone to the hair follicles and to nails and the skin, and we are going give it to our troops to get rid of this virus.

Yeah. That's fascinating. All right. So let us talk a little bit about standards. in the supplement, right? So what matters to you most in a spermidine product?

And I think all of these things do. I'd love you to touch a little bit on sourcing, dosage, contaminants, the delivery form, what we talked about the cofactors a But you know, you produce two very powerful forms from two different sources.

Both food. But it's not just any wheat germ. Chlorella. Yeah. Exactly. Okay. Well, first of all, I'll say that I'm working together with the Japan Autophagy Consortium and Yoshinori Osumi, the 2016 Nobel Laureate, to create a global standard for supplements that activate autophage.

So I am the global, it's a funny title, global executive ambassador But what I'm trying to do is because there's so much rubbish out there is to create a standard mark that can be put on the bottles that says this has passed muster with this group with the Japan Otophagy Consortium with an expert panel of people on otophage who agree that these supplements actually do what they say they're doing because we know from the work of Professor Andrea Meyer at National University of Singapore's Aging Research Center that lots of supplements claim to have bioactive ingredients but have zero at all, nothing, which is a shocker.

It's not just with spermidine, it's with urolithin A, some of these other supplements. People are knocking off the originals, right? Exactly. I mean, honestly, women probably know more about how to identify counterfeit handbags than we do counterfeits supplements.

And I think we need some education here. So first of all, the vast majority of supplement compounds come from China. Now, I am half Chinese or Taiwanese.

Get that out of the way first. I'm not bashing my own people. But you can bash your own because you are your because I am. Yeah. OK. So I will just say that, you know, as a country, a county that has so few standards that they allow baby milk powder to be contaminated with melamine, plastic that killed thousands of babies in a countries where people are only allowed one.

And there was no accountability for that zero. Well, what do you think they're doing with other products? I mean, baby powder isn't that expensive. Some supplements are very expensive, can you guarantee, hand on heart, that there is no contamination?

Well this is the problem I deal with, is I see companies, they come to me, and they say, you're selling spermidine, we want to sell you spermidine. Look how cheap it is.

We'll bottle and label. then give you the bottle itself, encapsulate bottle label, and it'll be a dollar a bottle for spermidine. And it's synthetic. Of course, it is synthetic, but I've had companies also say, I'll give 10 milligrams of spermidine from wheat germ derived sources.

I'm thinking, is that true? So we've tested and guess what? They don't have spermine and they dont have putrescine, which means that they're lying.

And you've got, yes, youve got 10 milligrams of spermidine but you don t those other compounds that would naturally co-occur, then that is not very that certificate of analysis at these other companies selling these compounds, that's not right.

And it's very easy to forge a certificate analysis today. This is what is normally given to a supplement manufacturer when you sell a raw material. So this alarms me, quite frankly, because a lot of people believe more is better.

But we don't know what we know. We dont have those clinical safety or efficacy tests using synthetic in humans. And until we do, I don' t have the confidence to sell it because I'm a patient, right?

And there's just too much rubbish that has gotten onto the market. So I'm really careful about it. I will also say that there is something called chirality or handedness when it comes to molecules.

So synthetic molecules are synthetic. They are perfect mirror images. And I've explained this, I think, on the podcast before. You talked about this before on this podcast.

Yeah. Exactly. but is not a three-dimensional image. Kind of like taking a leather glove for your left hand and thinking, oh, it will work on your right and it doesn't.

It doesn t fit. Yeah. So then what happens when our receptors get those compounds? Now, we have co-evolved with plants. plants that have spermidine, our receptors are not there looking for something that is kind of like a spermidean compound or a spermine compound.

It's looking from the exact key that fits the lock. And if you really want to unlock the cellular renewal potential of your cells, you had better go with the food derived compounds.

Yeah. You know, the other good example of that is T3 and reverse T 3. Oh yeah, exactly. And you explained that beautifully earlier. Like reverse-T3 is the mirror image of T-3.

So it might hit the receptor, but it doesn't activate it. Yeah, yeah. It blocks it from the actual T three that will initiate that cellular cascade you're looking for.

Okay. We're coming up on time. I think we came up in time and passed it a while ago. But this is such a great conversation. I always love talking to you.

But so I'm going to ask you a couple of questions, a few more questions. Let's try and make these more of a kind of speed round for the audience. So what's the next frontier in immune rejuvenation and inflammation that hasn't hit the public's attention yet, do you think?

And it could be just the renewal, the ability to renew. For me, I still feel people don't know enough about spermidine. I mean, that is really it for me.

Yeah. Hate to be a cliche, but yeah, no, it's still spermidine Yeah, okay, cool.

Longevity Advice for Women and Closing Remarks

Your site recently highlighted spermadine being included in a newer clinical study. What question is the study trying to answer and what outcome would change the field?

Can we slow aging and the onset of the diseases of aging with spermidine? And they're also being given rapamycin as well, not in the same cohorts. They're being compared.

And this is something that we have done here at the University of Oxford in Professor Gadal Saleh's lab, looking at both of those two head to head. What would you love to see funded in women's longevity research that isn't getting attention right now?

Oh, thyroid health. There's so much. Yeah, those two for sure. Maybe early and earlier, earlier intervention with HRT. Yes. Yeah. And used differently, honestly.

Beautiful. The most underrated longevity lever for women is? Oh, HR T. the habit you'll never give up even on a bad day. Of spermidine. A supplement trend you're so over.

Uh, no, man. The most common mistake people make when trying to reduce inflammation. Um, probably using too many hormetic stressors. Yeah. Well, we talked about earlier.

One thing you changed that improved mood really fast. Lovemaking. I love it. So if you guys go back and listen to earlier episodes, you will learn that one of Leslie's earlier careers was a sexologist.

I'm going to let you go to one those episodes yourself to find it guys, but that informs Leslie. And truthfully, intimacy is one of those powerful levers we have for so many of the things we've talked about today.

Not autophagy, maybe. Well, anyway, we're not going to go there. This is supposed to be the speed round. Yeah. And there's a cool paper out by my mentor, Professor Dennis Noble, about how touch activates the meridians used in acupuncture, but also allows extracellular vesicles or exosomes to go to the sites of repair that need to be repaired.

There you go. The belief about aging you want to delete from the culture. That aging means decline. It doesn't. Beautiful. So for the women listening who feels older than she is, what do you want to say to her right now?

What's the message? Decline is not inevitable. Embrace your new prime. But in order to do it, you need to top up the things in which you are deficient, whether that is hormones or spermadine.

You need. To support your body actively. And then if you do those things, you might just enjoy a healthier, longer, and even younger second half of life like I have.

And just to leave the audience with a bit of a little to-do list, right? So if we were going to design a perfect day for our audience who's listening, starting with a couple of lifestyle things you feel they should do, and maybe how they might weave spermidine into, if they're feeling inspired and say, okay, I'm taking the plunge, going in, how would they really apply spermadine or primadine, whether it's the gluten-free or the original formula?

How would I weave that into that day? Okay. Well, first of all, when we go to sleep at night, we have a natural fast and you can leverage that period where we're doing literally nothing to activate autophagy.

So I would start in the evening and with the last fruit of the day, I will take some Primadine GF, which is better for sleep. the gluten free one and then that kick starts the autophagic process.

So say you have it with the last meal of the day at around 8 p.m. you go to bed at 11 you wake up again at 8 you then got your 12 hour fasting window.

When you have food in the morning, have Primadene Original, you could again, yogurt, acai bowl, smoothie, porridge, and you then extend the autophagic or cell renewal benefits that you've had overnight into another, let's say it's another four hour window.

So you're getting effectively a 16 hour fasted window benefit, but you have actually been able to eat both dinner and breakfast exactly without starving yourself.

So that would be one way to do it. There are other things that help. Coffee can activate autophagy as well. In your diet, there are so many wonderful compounds that we can layer on.

in a nutrient-dense, even high-protein meal. I know a lot of people are thinking about getting more protein into their diets, but layer them together with polyphenols, with your vegetables, your broccoli sprouts.

Broccoli sprouts are powerhouse. Sulforaphane, they have spermidine too. All sprouts have some spermidine. So I would garnish as much as you can with those sprouts.

Yeah, on everything. On everything, garnish with, I like to use lots of spices as well to get extra benefits and fiber. Aim to at least 11 different plant fiber types into your diet daily.

That alone is a challenge for most people. I mean, it's not too hard when you do it, but once you get into it. But I think a lot of people who might eat their vegetable list is carrots, lettuce, broccoli, cauliflower, maybe.

And, as Leslie, when we talk about the beans, the sprouts, go to the radish, even if the cabbage is cooked cabbage right now is all the rage online. Yeah, I've seen it everywhere.

But even just parsley. So parsley grows easily everywhere, but you can freeze it and just throw it on as a kind of, you know, garnish. That counts. It counts as something to your gut biome, right?

Yeah. And the porridge that I make in the morning, which I made with almond milk has blueberries, ginger, because we can get chopped frozen ginger here.

It has a chopped, an entire chopped apple diced finely. it has cacao nibs. Yeah. Six forms right there. I throw in some buckwheat groats and chia seeds as well.

Yeah, exactly. There's just so many things. Anyway, so I think that what you're saying Extend that autophagy window using the primadine supplements. But at the same time, underscore it with that nutrient dense diet that's going to support all of these things that you're doing, which is really powerful.

And I'm sure we can add in there, move your body, see natural light, all the things, but foundationally not to overload you guys. And you know, if you're eating a five food diet right now, because that's just your habit, then start to think about gradually increasing it.

Don't get overwhelmed with 11 different vegetables right. Now just start improving gradually. I would agree. I think of it like painting with only a few colors.

You want your palette to be as colorful as possible, try painting it with more colors! The smallest today move that can really start to reverse biological age in as little as a month?

I'm going to say sleep because many of us are chronically depleted in sleep. Actually, Great Britain is one of the countries that suffers most. Get more sleep and get more deep sleep, because once you get deep asleep, you activate the glymphatic system and that's the only time that the waste in the brain gets taken out.

Spermating can help with that waste, but you do need to get into deep or slow-wave sleep. Love it. If your story had a title, Ms. Leslie Kenny, what would it be?

Have you thought about this yet? Are you rating the book? I am rating in the books, they've chosen the title for me. I can't do anything about it I heard.

Did you have a name in mind when you started this process? Yeah, it was rewriting time. Beautiful. Yeah. Rewriting time, changing my biological age and taking my life back.

I love it. Lastly, as always, this has been a fantastic discussion. Thank you so much for your time and thank you for all that you do. I'm stopping myself from rushing to my cabinet to grab my spermidine right now.

But if the audience who is listening hasn't had the good fortune of getting their hands on primadine yet, where do they find it? How do Well, in particular for Canadians, once the tariffs went into place, we decided to manufacture in Canada just for the Canucks.

Yes. So now available to Canadians and Americans and all the other people. Exactly. And so you can get it online at OxfordHealthSpan.com. And in the United States, same.

You can also get it at Erewhon in Los Angeles area. Uh, you can get at Six Senses resorts, but really it's, it s online and a big push to the Canadians.

Yeah. Thank you. And Canadians, thank you, and we have a special code for the audience. We can't use the code at Aero One or at six senses. I believe the codes not 20, we will put it in this show notes.

which will save you at least on your first order, 20%, which is a very generous, very, generous gift to help people to kind of get started on their journey.

And where do people find you and follow you on social media? All the things, uh, Leslie's new prime L E S L I E s new Prime. Beautiful on Instagram. Thank you so much.

This has been amazing. That's been great fun. Thanks so