Intro and book announcement

Yes, the number one thing we cannot influence in terms of fertility outcomes is our chronological age. Remember, mitochondrial dysfunction driven by oxidative stress is a major reason why egg quality can decline with unhealthy habits, and infertility is often the earliest sign that our mitochondria might be having some performance issues.

Hey everybody, we'll get right back to the podcast, but I do have some very, very exciting news I want to share with you. And that is that my new book, Brain Defenders, that we've been talking about on the Podcast is now available for purchase.

It is going to be published in August of 2026, But it is available now. If you want And that is oddly enough, braindefenders.com. This is really empowering information as relates to charting your own brain's destiny.

Now let's get right back to the podcast. Hello everyone, Dr. David Perlmutter here. Welcome again to The Empowering Neurologist. Today we're going to talk about infertility.

Infertility is something that's now affecting more couples than ever before. Rates are actually steadily climbing over the past several decades with estimates suggesting that nearly one in five couples struggle to conceive.

Environmental toxins, metabolic dysfunction, which we're going to be talking about today, chronic stress, endocrine disruption, and even shifts in the microbiome, the diversity of the micro biome are only a few of really important and central forces that are driving this dramatic rise.

Fertility as a systems biology issue

you know despite the widespread problem that this has become the solutions that are offered in standard conventional fertility care often remain a bit shall we say fragmented or perhaps even confusing or at least narrowly focused and frequently this leaves couples overwhelmed rather than feeling empowered with knowledge that's why Our guest today is so very important.

Rachel Swanson MSRD LDN is one of America's most sought after nutritionists. She's known for guiding celebrities, professional athletes, physicians, and even Fortune 500 executives through what we would consider to be evidence-based, concierge level programs that are designed to optimize human performance.

And she brings that same rigor and clarity to really one of the most emotionally charged and scientifically complex areas of human health, and that is fertility.

Her groundbreaking new book, which is called Trying, a science-based plan to optimize your fertility, reframes this notion of fertility care through a much more sophisticated, wide-ranging systems biology lens.

which bridges cutting edge research with deep clinical experience. And rather than just offering another list of disconnected tips and ideas, she organizes this notion of fertility into five core actionable domains, the microbiome, which we've talked about quite extensively on this program, metabolic health that we talked quite extensive on the program.

Methylation efficiency, which has to do with gene expression, environmental exposures, including what's become quite a topic these days, micro and nano plastics, and one of my favorite areas, mitochondrial function.

And they're all related. But what truly distinguishes Rachel is not only her scholarship, but her unwaiving commitment to women's autonomy. She argues that fertility should be a source of clarity, confidence, and informed decision making, not based in confusion, shame, or fear.

Her holistic patient-centered framework challenges many of our outdated paradigms while she offers a deeply hopeful and, again, science-powered roadmap for anyone navigating the notion of conception today.

So whether you're actively trying, preparing for the future, or simply fascinated by the intersection of these ideas, metabolism, microbiology, the microbiome, and reproductive biology, this episode will offer insights that are unique.

I think you may not hear these ideas anywhere else. So let's get ready and jump right into this podcast. Well, Rachel, very nice to see you. Welcome to the podcast!

Thank you so much. It's an honor to be here with you! We did kick it around a little bit prior to hitting the record button and I'm just really very excited about this because, you know, I think the takeaway message from your book is that it's just like any other aspect of health and that is the healthy female body is going to be in a much better situation for conception and caring viability in comparison to a non-healthy individual.

And so as we talked about just briefly a moment ago, there seems to be a sense in fertility clinics that the bottom line is this is a hormonal issue. And if we can tweak your hormones a little bit, by all means, this is gonna fall into place.

But I think eyebrows get raised when we read the information you provided in your wonderful book that I have right here, gratefully. And let me start off by, fair to say, you take a systems approach to looking at this issue.

Maybe you could start by telling our viewers, what does that mean, a system's approach, to look at the idea of fertility? Yeah, well, this is really, you know, something kind of became unmistakably clear over the years.

And that's kind the cornerstone of why I had to write this this book. These are this system levels view again. I mean, I think about a true first principles root cause approach.

If this applied to fertility, I mean, the benefits extend far beyond just optimizing reproductive function. So I see it as the same system levels approach, if you will.

The same interventions that we take also increase the likelihood of having a less complicated pregnancy and a healthier child. But not to mention, this influences how we feel day to day and just our capacity to show up in our lives.

I know we were just about to talk about this before you hit the record button. Yeah, it turns out when you zoom out even further, you know, this is where things get really interesting, but no one is really talking about too much, except for, people like yourself and people in the, I guess, the functional medicine space.

But some of the same root cause levers that we have for fertility, also influence the long-term health span and disease risk, the ones that you've educated us about so much already.

So this is why there's so many overlap between the topics you and I discuss. I just see fertility as our first opportunity to really intervene and influence an entire health trajectory.

And look, I know we'll probably get into so may nuances here of metabolic health, microbiome health all the things, but I guess before I get too excited about all these topics, just anchor us into this 10,000 foot view, which is what I'm saying here is the work that we do to create new life is this same work, that allows us to fully live our life, right?

To be here in great health for as long as possible to enjoy the family that were building. And so, I mean, heck, so each of us have the opportunity to realize our full potential and purpose while we're here on this planet.

Hey, isn't that the whole point? Yeah, and really, so what you're saying and certainly what written in the book is that infertility is just another manifestation of, may I say, ill health, that there's something wrong and it's not just a hormone-related issue.

And let me just get this out of the way. Certainly some infertilty issues are based upon the male input. And we recognize that. But this is a book that's looking at optimizing a variety of health metrics, if you will.

Metabolic health, microbiome health. Mitochondrial health and energetic health immunometabolism health et cetera. Toxicity et Cetera.

Metabolic health and conception

And really focusing on that and again not withstanding there are plenty of issues related to males. You know that is certainly worthy of another conversation because that a big issue these days as well.

In the introduction, I mentioned that the rates of infertility amongst couples in America is extremely high and rising. And I think it's fair to say, maybe you would comment on this, that that rise in infertility is in lock-sip with declining health metrics.

Oh, my. Oh my gosh. Yes. I mean, there's so many angles here. Probably then touch on the metabolic health angle first in that sense. But I just think yes.

And look to there is obviously the structural issues to, you know, to blockages and things of this nature. talking about that. I'm talking all of the modifiable levers that we have in our control, right, to influence fertility and of course structural abnormalities or complications fall outside of that realm.

So what I am seeing is we are witnessing Dr. Perlmutter like these extraordinary innovation happening in assisted reproductive technology, yet we're still kind of having the archaic frameworks, if you will, and like stagnation in our strategies and way of thinking about how we are approaching optimizing human fertility, despite the fact that what you do outside the clinic is of course going to influence outcomes inside the clinical.

So yes, kind segueing that into, you know, cellular energetics, I think you and I can both agree on the fact, correct me if I'm wrong, that how efficiently our cells make and use energy informs inflammatory and immune responses.

But I every doctor can agree that every REI, every OBGYN, right? Everyone wants to reduce inflammation and have a balanced immune response for the goal of procreation.

The data is extremely clear that metabolic function influences the quality of our eggs, sperm, embryos, it influences hormones, hormone signaling. It influences, the chances of conceiving IVF success rates.

And yes, to touch on the father's point, Metabolic health before pregnancy influences pregnancy complications for the woman, such as miscarriage, recurrent pregnancy loss, and preeclampsia.

So who would have known? I mean, I thought that was rather interesting. It also influences the gene expression we pass down to our child. I mean, to think that the first time we're learning about metabolic function is at that 24 weeks, 24-weeks of pregnancy where we drink that glucose at a screen for gestational diabetes, despite everything I just mentioned.

So I have a few other thoughts about this, but before I get into them, I want to hear from you. Really important. What you said is that, the assessment of a woman's metabolic health happens at around 24 weeks when she is given a super high concentration of glucose, if you will, and they're measuring, is she already experiencing gestational diabetes or at risk for it?

I mean, looking at that point at the dynamics of her ability to handle and control sugar. And boy, that is way away from what you describe in your book in terms of you know, preconception assessment of metabolic health as being fundamentally important if you're wanting to maximize that opportunity and chances of conception.

So I was wondering earlier, where would we see parallels? How could I possibly find parallels in my work in dealing, for example, with Alzheimer's and in your work dealing with fertility?

I mean, these things seem as far apart as possible and they're not. And from the way we approach them in, Modern medicine, first of all, as it relates to Alzheimer's, my world, that is that, you know, we're pretty much told your metabolism, We're not going to pay much attention.

Live your life however you choose. Then once you're becoming forgetful and we think you've got a low debate of amyloid in your brain, why we've Got great medicines that can just take that amylate out of your Brain and presto.

Presto means it doesn't work. And I think the mentality is quite similar. That live your Life however, You choose, develop PCOS or become metabolically compromised.

And then when you're struggling with trying to become pregnant, why, we'll fix the problem then. Gosh, there are a lot of major legs holding up the stool of your book.

But I think that's one of them. And that is get your metabolic house in order early on, not at 24 weeks. That is your key to fecundity. And when you think about that, that is just such a fundamental approach to every health metric we could consider.

So you're right then, doctors and healthcare practitioners are very much interested in metabolism and energy or at least should be. Yeah, I mean, or, and so because of that, again, it's just to draw upon, you know, what the conventional advice is.

And yet we're still kind of giving women advice of like, here, eat this list of 10 foods, everyone should follow a Mediterranean diet. Again, that's kind why I mentioned earlier how I just think this is so just a stagnated way of thinking, despite all the incredible advances that we have in technology on the like say, ART or an IVF side, but we aren't really talking about how can we do this for ourselves?

That's going to increase our ability to get pregnant. And I just want to remind everyone, because I know everyone is already well aware of these stats, You know, again, based off of what I just mentioned and how much metabolic function influences fertility.

I think about how either, you know 1 and 8 to 1 in 10 people are considered metabolically healthy in this country based of of, I mean, 5 basic clinical markers that are arguably not even the best biomarkers and I don't want to.

necessarily extrapolate that therefore 90% of people are going to have trouble getting pregnant or experience all of the complications that I mentioned earlier.

But again, yes, it's pointing out this painfully obvious fact that optimizing metabolic health should be priority number one for both partners who want to get pregnant.

Otherwise it can potentially become a huge biological roadblock. And we know that the problems start brewing before reaching the diagnostic threshold.

So this isn't just about avoiding diabetes. I mean, one study even found that nearly half of women experiencing Infertility or recurrent pregnancy loss had undiagnosed prediabetes again.

That's just one but you know in the in that chapter alone I probably have cited over a hundred to kind of build my case for for this I'll give if I may I can give one point about dad as well.

You may do whatever you want. So, what I found just so fascinating with dad's metabolic health is when I was looking into the data and found that he can increase mom's risk for pregnancy loss and preeclampsia by about 20% depending on how severe his metabolic dysfunction is prior to that couple getting pregnant.

And I'm not just cherry picking, it's a random study here. I mean, what I just said is based off of one data set that analyzed over 1 million pregnancies and another data said analyzing over 650,000 pregnacies.

Look, this is as click bait as you can get, but no one's really talking about this stuff. We could make it clickbait, actually. We'll promo this podcast, that's for sure.

I want to just take a different view, and we're talking about how metabolic dysfunction, poor metabolic health, is kind of an inroad to infertility. Is there a way to look at, retrospectively perhaps, people who had difficulty with conceiving, women who have difficulty conceaving and their overall risk for developing significant metabolic issues thereafter.

In other words, in looking at them retrospectively, is there a correlation between those who are difficulty-conceiving and then risk from metabolic dysfunction?

I guess it's an unfair question when nine out of 10 adults are already having metabolic compromise. So that's probably an fair way of looking it. No, it's not.

And I mean, to me, this question just kind of sets me up for a success. So thank you for that. Where I was really looking into the answer to that question was when I looking more PCOS.

Basically, what I can confidently say is that individuals with PCO, which as you know, one of the primary underlying reasons for is insulin resistance.

There is hundreds and hundreds of very high quality studies showing that they are at increased risk of pretty much every long latency chronic disease that there is.

And again, because I reviewed all of those data myself, I can very confidently say that. So we're talking everything from, you know, cardiometabolic diseases like heart disease to neurodegeneration to even some risk for cancers, which I found pretty, pretty interesting.

But you name it, there is a risk and that just kind of goes back to metabolic function and insulin. resistance. And so, yes, I have entire charts on that in the book, in fact, because it's a little scary.

But again, this book is very, very empowering. It's all about how we can shift that, and in our favor, protect against this.

Gut and vaginal microbiome

I think women and couples are smart, they need to have access to the information, so they can then choose what path they want to go down. Hey everybody, we're gonna get right back to this podcast in just a moment, but I wanted to tell you something really exciting about 40 Hertz light exposure.

We have actually done a podcast on this. we know that when you're exposed to 40 hertz stimulation, this is linked to what we call increasing gamma activity in the brain.

In other words, balance in brain, which is really a fundamental for brain health and brain functionality. in fact, in early clinical research, using what's called 40-hertz stimulation Researchers have reported signals that are consistent with a slower decline in cognitive function in some participants.

So the company that we are talking about, who is in fact sponsoring our podcast today, is Optosudix. Their EVY light is designed to bring 40 hertz light and sound into a simple at-home routine that you can use while you're reading or watching television.

I use it actually while I'm working on the computer. Optostudix makes it easier to try, so you get 90 days of risk-free trial with support from their care advocate, somebody who's going to work with you.

And if it's not creating value, then you're able to return it to Optosutix for a full refund. And how can you lose? They're going to pay the shipping both ways.

Quick note, Evie is a wellness device, and it's not intended to diagnose, treat, or cure or prevent any disease. In this episode, as I mentioned, sponsored by the Optostix company.

So if you'd like to try it, go to Optosudix.com and use the code PERLMUTTER26 and get $200 off your order. I think you're going to find this device to be really quite amazing.

Let's get right back to our podcast. So I think the take-home point is, gee, a woman might say to herself, I remember back in my 20s, 30s now that I'm 50, 60, and I, boy, it was really difficult to conceive.

And what you're making very clear is that this particular person has a significant increase for metabolic issues. Let's be clear that those metabolic are entrees to other degenerative conditions like heart disease and cancers, and certainly brain degeneration as well.

So it's kind of like a bellwether early on in life that, again, I've never said this before, but you need to get your metabolic house in order. In the first part of the book, you do a deep dive into the microbiome, vaginal microbiomes, gut microbiome and even oral microbiomes.

Do you wanna break those, do these individually or should we talk about microbioms and bacteria globally at first or how do you want to handle that question?

Yeah, I would love to. I mean, we should just do a quick touch on every single one because I know you've talked about a few of these, you know, for actually decades now, but yeah, let's touch just to draw some parallels between our work and, and you, of course I'm happy to share some data as it relates to why we are in regards to fertility.

So I, Let's start with the gut microbiome. And what I kind of hear in the ether when it comes to like, what is the connection between the microbiomes and fertility?

Kind of the only point that always comes into service is like how it helps with estrogen detox, which is true. But I mean, I think this is rather basic and simplistic and kind of uninspiring look in my opinion, because I see the gut microbiome as this incredible ecosystem that's essentially the middleman that we can interact with through our food and lifestyle choices in order to modulate our metabolic function, which we just talked about, um, wish includes our mitochondria, of course, our immune system and our inflammation levels in our body.

I mean, like that is the coolest thing. And I think, you know, what, I would love to discuss briefly a slight slightly different path, but, you know, I, it's really hard.

I think for people who don't, who aren't deep in the sciences, or maybe who are to healthcare provider. to really understand the relationship between what I just said, the gut microbiome and sort of like the mitochondria in ourselves, like how, how is that related?

And I have a few examples to give that I think are a really good anchor point, if I may. So these, gut microbiome, these gut microbes, they make short-chain fatty acids and other metabolites that our mitochondria respond to.

I mean, the send signals back and forth that influence energy and inflammation, which is incredible in my opinion. that dysbiosis that in the gut stresses out the mitochondria and vice versa.

And when you think back, why the heck would that be the case? I mean, think about the wild origin story where it's like billions of years ago, mitochondrial were just free living bacteria.

That's why some antibiotic classes that target bacteria in their gut can ultimately like stress out their mitochondrion because they still have those bacterial derived enzymes.

I means, this stuff again is like so fascinating Can I slow you down a little bit? Because it is really interesting and very cool. And that is that, you know, the origin of mitochondria is thought to be, according to the work of Dr.

Margolis, that mitochondrial were free-living bacteria and invaded cells. Ultimately, these cells became eukaryotic cells, and the mitochondr took on the job of energy production and actually influencing the genome of the original cell that they invaded or bacterium that the invaded.

So you had made a comment that certain antibiotics might in fact threaten mitochondrial function. And that's actually, you know, there's quite a bit of literature that supports that.

I mean, but mitochondria should be considered to be bacteria like, I mean, their genome is circular like bacterial, the bacterial genome. It's quite a part from, you know, your nuclear DNA, and it's all inherited from your mother's side.

So with that, but then the mitochondria are involved, yes, in energy metabolism, but in also a very fundamental area of immune regulation through what we call immunometabolism.

So for those who think that, you know, and are highly influenced by things going on in the gut, that this connection is profound. We've been talking about it in relation to the brain and that was a bit of a stretch for people for an awful long time, I get it.

And now you're talking the microbiome as it relates to fertility. So it's certainly not a stretch. Why don't you stay with that for a little bit longer?

Yeah. Definitely. I'll provide some anchor points outside of fertility, so I think it will provide a nice leeway into what I'm about to say as relates fertility I.

Think about what we just said, and I understand not everyone is deep in biochemistry and sort of the interrelation of what you said in terms of, you know, metabolic function and immune system regulation.

So I'll give you two examples or the listeners to examples. One is I think about how early in life in infancy, repeated antibiotic use. Unfortunately, it does kind of carpet bomb the gut microbiome and the data data is very clear that those then children are at greater risk for obesity.

I mean, farmers have known this for decades. That's how they literally fatten up their livestock. In terms of the immune system, again, that repeated exposure of antibiotics early in life they are at a higher likelihood of developing allergies and autoimmunity.

So again, I just wanted to lock into this interrelation between gut microbiome, metabolic function, and immune system. Now, let's go back to fertility.

If we have chronic dysbiosis in the gut, so let us call that an overgrowth of gram-negative bacteria producing lipopolysaccharide, you have discussed this so many times before, that can leak out of the cut and into circulation.

And guess what? That can trigger inflammation At also the site where spermature called the epididymis. And so again, this is relevant for both partners, not just the female, but gut microbiome, 10,000 foot view.

There's associations with our ability to conceive our menstrual cycle health, fertility related conditions like endometriosis, PCOS. It's all very, very interesting.

I think that the mention of PCOS is going to get a lot of attention in our viewers in light of how common it is. I mean, some would say that that is the most common cause of infertility in America if you had to put a label on it.

But I the broader picture is PCS is primarily a metabolic problem. There certainly are downstream hormonal issues that are approached by clinicians trying to regulate things.

but primarily it is a straightforward metabolic issue. I mean, after all, Metformin is one of the treatments and that is diabetes drug, let's call it like it.

But that seems to be pretty rampant these days. Yeah, to your point, so yes, this is the number one cause of an ovulatory infertility globally. And of course, if someone is ovulating, that certainly makes getting pregnant very difficult, If not impossible.

So there is a small subset of individuals with PCOS where it's true this ovarian type disorder, but the vast majority of cases, yes we see as that metabolic endocrine disorder which insulin resistance is at the root of.

So kind of everything that we talk about. And guess what? Everything you talk, about even though it's in relationship to neurodegenerative diseases, again, the leavers can be very, very similar because it set the route cause a lot of these kinds of issues that crop up.

It's so interesting. I mean, I truthfully just had a bit of chills there for a moment because it's incredible that, you know, the factors of our modern world are manifesting in so many ways in terms of cognitive decline and infertility.

They are, in fact, manifestations of the same disconnection of environment versus evolution, basically. You know, the environment verses our genome, which is primed to receive signals that it has received for tens of thousands of years.

And now we've suddenly, you know turned the tables on our gene and we're in these expressions of our genomes that are manifesting as problematic. You know, our ability to reproduce is kind of one of the important things for us to remain, you know as viable, a viable species on this planet.

Great talk about the microbiome and we recognize then and I think our viewers will certainly embrace the idea that Therefore, we have to be careful and judicious with our use of any medication, certainly things like antibiotics.

Oh, a good term you might want to use for your next interview is weapons of mass microbial destruction. Love it. You can own that if you want. And we get that and eating a diet that's high in fiber and being careful with foods like non-steroidal anti-inflammatory drugs and certainly acid blocking drugs, et cetera.

But let's move to the vaginal microbiome and let us talk about what we need to be going on as it relates to vaginal microbiome, how we should be careful about maybe some of the things I've already mentioned, and what a woman can do to to certain that her vagal microbioma is doing what it needs to do.

Yeah, absolutely. So just like the ecosystem in our gut, we have an ecosystem and other places in your body too.

Oral microbiome and inflammation

We'll discuss the oral microbiome in a second, but in terms of the vaginal microbiomes, you know, when there's an imbalance in this ecosystem, just think of it as like, it can't function at its fullest fertility potential.

Whereas a healthy vaginomic microbiom, so that means absent of dysbiosis, dominated by certain lactobacilli, It really sets the stage for amazing things to happen, and that includes getting pregnant faster.

So that's associated with a shorter time to conceive. This helps embryos implant successfully. Of course, this is like a window into the endometrial microbiome as well.

And this also predicts better IVF success. Amazing research done in the vaginal microbiomes space in regards to fertility. Whereas, dysbiosis of this ecosystem is associated with, with really the exact opposite of what I just said.

So, in terms of just some quick recommendations, you know, luckily, a lot of women know if something is off. Unfortunately, that doesn't, guarantee someone might not even have symptoms and they could have dysbiosis, but let's stick with.

with symptoms for now because that can be something that anyone can use. I think about the women with all these recurring symptoms that just, you know, again, continually get antibiotics without knowing sort of the organism that

they're dealing with.

And if they have recurring symptoms, like again, this is a time that you wanna test, you don't wanna guess, and you want to personalize and better understand the community state type that is dominating so you can get more effective treatment, for example, And by the way, You would not know what I'm about to say unless you tested your bachelor microbiome, but community State type four is associated with worse pregnancy outcomes and IVF success.

And here's how I think about it, Dr. Perlmutter, I think about, if I had recurring symptoms and on the horizon, I was about to go to get IVF, wouldn't it be nice to do a $200 vaginal microbiome swab and get really personalized treatment and answers before I commit to tens of thousands of dollars for the treatment where this $ 200 test could very much influence the outcomes.

That's just kind of a thought that always kind pops into my mind. But I think if we are stepping away from testing, then I thing about the only thing that you need to know is less is more in this area.

So that means choosing products a lot more carefully that go kind in and around this You know, decrease our exposure to endocrine disrupting chemicals.

We can decrease or exposure. To chemicals and other products that are essentially stripping out this really beneficial microbiome that again works in our favor.

So that's a little bit about the vaginal microbiomes, but again, I don't want to talk about in fertility books. Yeah, I don't want to go off this topic just yet because you mentioned something just now about products.

What are the common ways that women are threatening their vaginal microbiome using various products? What do the products use for? And maybe there are some alternatives.

Yeah, so there are many so many women use cleaning products on that area that are scented and like, you know, and things like this. And the problem is these are a many of them can strip away that.

really good bacteria that we have there. So that is one way. Another way is I think about all of these period products and, you know, I really hate this because I'm really pro-innovation here, but I thing about these innovative period product that absorb blood and how they can do this and resist stains is by these by basically putting on these very harmful chemicals called PFAS, which I'm sure we'll discuss later.

But again, that area is very vascularized. That's why people prescribe vaginal estrogen, right? Again, this is an area that you don't really want to mess with in terms of putting other chemicals and products that can be absorbed or can strip away this ecosystem.

So that's kind of how you think about that. Hey everyone, we're going to get right back to this podcast, but first I wanted to share some information about olive oil.

You know that I love olive. So here's a good tip. The most delicious olive that you can get is olive, oil that comes fresh from the farm. This one, the olive is at its peak flavor and all the nutritional, uh, good things that we talk about the polyphenols and et cetera are really at their peak.

When you buy your olive oil at the supermarket, you are getting an inferior product because they have been sitting on the shelf for months and they basically grow stale.

And that's why I've been getting my olive direct from small award-winning family farms really around the world, thanks to a fellow named TJ Robinson. I have done Instagram live with him in the past.

He's known as the olive-oil hunter. he's sort of the Indiana Jones of olive. He is able to source farm-fresh oils that are vibrant, they're healthful, there are grassy, their incredibly delicious and you can use them on whatever you

want on salads, fish, vegetables, meat and even like I do on scrambled eggs.

So if you wanna taste the difference that freshness makes, TJ is gonna send you a full-size bottle which normally will cost you $39. He's gonna sent you for free if pay them just a dollar that will cover shipping.

And that's how he then is able to introduce all of you to this fresh pressed olive oil club, a club that we are members of. So there's no commitment, just send him a $1. He'll send you a full bottle of olive.

You just want to go to getfresh389.com. That's get fresh 389 dot com and he'll make it happen for you. Let's get right back to our podcast. We should talk about this, that tampons or pads that are scented or treated with chemicals versus cups.

What can you tell viewers right now about what they could be using? Yeah, so if you have any kind of scented product, I would sort of, again, take that out of the equation now.

I think about the fabrics that come in contact with the area. So at least for the undergarments that you wear every day, go for cotton, which is more breathable.

The lube choices, this one would be a good one to ask a fertility doctor and OB-GYN. However, most of them are really not fertility friendly whatsoever, not microbiome friendly, whatsoever.

Mitochondria, aging, and fertility

Really, our own arousal is going to be the best way to go about lubrication that does not impact the microbiomes. But of course, there are certain situations and circumstances you would need, Lou, but that can be a discussion with the doctor.

I think then what I heard is that what lubrication prior to intercourse a woman might choose to use might threaten, this isn't externally, might threatened the diversity functionality of the vaginal microbiome.

So I'm going to think about, and I think that you might've been kind of insinuating that perhaps that might not be something at a fertility clinic per se, seeing a lot of patients all the time would be necessarily cognizant of, or even part of their out, outreach in terms of information that, you know, this lubrication product that you're using might be damaging your vaginal microbiome and that might have an impact negatively on your ability to conceive.

Yeah, and what's wild again, like most of these, most the lubes that are actually, I think this is wild, again that our fertility friendly, those are tested for like the sperm side of the equation, right?

None of them are testing for the woman's microbiomes. Every drug is tested as it relates to males, right? Not children, that's just the way it goes. All right, so then let's go to the oral microbiome and ask the question, how could that possibly affect fertility?

Sure. So, as you know, what happened in the mouth doesn't stay in. The mouth and we want to avoid a power imbalance among our microbes because dysbiosis in this area coupled with inflammation really sets the stage for periodontal disease.

That is a systemic issue that's associated with. issues with sperm quality, reduce fertility potential in women, a higher risk of pregnancy complications like preeclampsia and preterm birth.

And, you know, again, this is fertility related, but what I just described in terms of the systemic issue, that's not a shocker to you because you've also spoken about the association with, P.

gingivalis, for example, in associated with Alzheimer's because they found this in amyloid beta plaque. But they've also found, by the way, in the P. gingivalis in artery plaque in heart associated inflammatory bowel disease, a few cancer types.

So the reason why I put the oral microbiome in this microbiomes chapter is because Isn't it wonderful that something as like the lowest hanging fruit, which is the oral microbiome, how we can optimize that.

Wash your teeth. And get benefits for fertility and for our long-term health. I mean, this is amazing. But you're just mentioning things that are good for your health and that's it.

Then as a consequence, as it downstream manifestation, you get pregnant. It's incredible. And the P. gingivalis part of the story is certainly, and other organisms as well.

We've talked about it in the context of Alzheimer's disease and cardiovascular disease, but the bottom line mechanism here is, you've mentioned it multiple times, inflammation.

And, you know, inflammation is playing the central role in all degenerative conditions. And now you're making it so clear that inflammation in concert with metabolic dysfunction is really at the core of infertility.

So, all the things you mentioned make for a healthier individual. You talk about the internal power grid. Internal power grid representing the function of insulin and glucose in the body.

Why is that so fundamental? Why did you dedicate so much resource to actually looking at the internal powergrid? Yeah, I mean, well, because this goes back to actually how we started this conversation.

I talk about mitochondria, which I'm referring to as the power grid, of course, in the book. But I just did that because I think it's really hard to talk everything in relation to the mitochondrion as well as to metabolic function.

So you can't really decouple the two, but that's why I actually talked about them separately. But everything in regards to the power grid really goes back to how to optimize metabolic function.

But I'll touch on just a few points for mitochondria since since we're on this topic and you and I both love this. Topic. You know, that when our. Mitochondria, of course, get less efficient, which is we term mitochondrial dysfunction.

They can't process food energy efficiently. So that's like our fat, our sugar. That's what leads to metabolic dysfunction, Which is what we talked about.

The insulin resistance, the chronic inflammation, that is not going to be the ideal environment to creating new life. And so our mitochondria this internal power grid is very much fundamental for our ability to create new life.

And it kind of goes back to how energetic and youthful, if I dare say, our cells are. That is the goal, right? Is to kind keep these cells young and energetic.

Yes, the number one thing we cannot influence in terms of fertility outcomes is our chronological age. Every single doctor talks about it. I mean, God forbid, a woman hits age 35 because everything goes downhill from there, but no one ever talks about sort of how we can influence how quickly our cells age by supporting our mitochondria.

Remember, mitochondrial dysfunction driven by oxidative stress is a major reason why egg quality can decline with unhealthy habits, and infertility is often the earliest sign that our mitochondria might be having some performance issues.

and mitochondrial dysfunction driven by oxidative stress increases the production of reactive oxygen species, creating a feed forward process.

Environmental toxins and endocrine disruptors

You talk about the notion of dodging the disruptors and in the toxicity part of the book, chapter four, and I'm hoping that's right. But that said, where do clinicians Where do they fail?

Where are the big disruptors, endocrine disruptor that clinicians in the field, in your field are really kind of just missing the boat as it relates to the value of talking about these things in relation to fertility.

Well, the discussions that I'm part of, I mean, it's very rarely talked about. I just last year at one of the biggest fertility conferences, thank the heavens that they actually finally brought in someone to talk about it, which actually was the advisor for the book on this chapter.

So what is wild? Great it happened, but A, B, why did it take so long? But go ahead, sorry. Yeah, exactly. So we know that there are so certain environmental chemicals, specifically the endocrine disrupting chemicals.

They can potentially harm a quality sperm quality ovarian function. these endocrine disrupting chemicals, here's what's so wild. I see them as almost accelerant of reproductive aging because they're associated with increased risk for premature ovarian insufficiency.

That's literally like the ovaries slowing down sooner than expected, right? And coupled with women with the highest exposure of endocrine disrupting chemicals, they tend to enter menopause significantly earlier, like the data I reviewed nearly four years earlier than those with the lowest exposure.

So I mean, again, not that a toxicologist would say this, but I'm like, I see this as a great, pushing the gas pedal on our reproductive aging. I think this is really crazy, quite frankly.

What are the big players here? So I see for fertility, the only players that I included in the book, Dr. Perlmutter, is the ones that, I can have human outcome data for, which are four main ones.

We have BPA, dilates, PFAS, perinpolifluoroalkyl substances, and pesticides and herbicides. Those are kind of the four categories that there are many, many others by all means, but those are the one that we have, human outcomes data in relation to.

the eggs being retrieved and time to conception and sperm quality and odds of getting pregnant, for example. Yeah, and for our viewers, think back of the interview with Dr.

Ray Dorsey where we talked about pesticides, insecticides, et cetera, how those threaten mitochondrial function that we've just covered today and how that is an inroad to Parkinson's disease.

You know, it's so fascinating how these things converge. You mentioned a bit about the sense of psychological safety, sort of, that being in a place. How does a, where then we can foster fertility, a woman can posture fertility.

how do you, how does one assess that? How might you assess it? And what do, what you do once you access that to help women who who are sending maybe signals that would preclude them from getting pregnant.

Am I making, is that a fair question? Yeah, absolutely. And this is actually perfect in relation to the topic that we just discussed. Um, and you've discussed with past experts on the endocrine disrupting chemicals, because I think it's always an important reminder that, you know, to stress about all of these chemicals and environmental toxicants, um, people can become very ruminatory about this.

That's a great word. If people are stressing about this, that is also counterproductive to our goal entirely in terms of modulating hormone function and the communication between our gut and ovaries, for example.

But again, let me just anchor this real fast to something else, which we all appreciate, Think about the placebo effect, for example, how studies have shown that you can undergo a sham surgery and have the same outcomes as undergoing a real surgery.

I mean, I'm at least referring to a study in orthopedics that was done. That was really a landmark trial. This, for example, that's why I want to always remind people that sort of the biology of belief and, you know, our perspective in life, how we see ourselves in the world.

It's just as powerful. I don't know if you have something to say about this too, in relationship just to long term health. Hey everybody, we're going to get right back to the podcast, but I have a very important message for you.

You know, why do we exercise? Why do you pay attention to how much sleep we get and the quality of the sleep? We get. Why are we looking at our diets?

Because ultimately we are sending information to our genome. We are affecting how our genes express themselves. I like to know about my genome. That's why I'm a real fan of the 3×4 genetics test.

Why? I said you can learn about your genetic predisposition. You know, in my world as it relates to the brain, there are some genes that in fact are associated with increased risk for neurodegeneration.

A lot of people know their APOE status, for example. But I wanna be super clear that this is not a genetic determinant. Maybe it's a Genetic Predisposition, but what you're seeing here happening, these are our lifestyle choices that actually change our gene expression.

You should know about your genome, you should get the three by four genetics test. We'll talk about how to do that in just a moment, there is a health program that they offer you as well.

When you get your gene sequence with three-by-four genetics, It's not just getting this information, but they're gonna tell you what to do with that information.

So I think that's really very important. Head on over to 3x4genetics.com forward slash Dr. Perlmutter. That's DR Perllmuter. They have a special offer for you and all of you podcast watchers.

Let's get right back to the program. Well, gee, I mean, have had the wonderful opportunities, had had wonderful options over the years to interact with people like Bernie Siegel and Candice Pert, the molecules of emotion, and boy, I get it.

I see what the power of thought can be in terms of outcome. And I've often puzzled about the derogation of the notion of a placebo effect. If the placebo affect is doing something positive like pain relief or whatever the outcome that you're looking at is, then by all means, I'm in.

We should be understanding that What does that mean?

Personalized fertility care and case example

And I think you just touched upon that this is indicative of the power of belief in terms of physiology and in how it relates to pathophysiology. So absolutely, I get it.

Let me take our conversation to, really, one of your central themes. And one the central theme is that You know, each individual and perhaps each couple needs a very specialized, a unique approach.

The word is personalized approach, and so how do you assess the couple? And maybe you could give us sort of a case example, if you would, in terms of how something very unique as it related to a particular couple was uncovered, addressed and led to conception.

Yeah, so there are there so many examples to pull from from practice. I think what I'll do is pick probably 1 of the most non obvious examples specifically related to a topic that we just discussed in terms of.

the oral microbiome, actually. So, again, so I work in a concerted medical practice. It's not just me, it's myself as well as a team of doctors. And so for one particular individual, we were trying to identify the source Of their elevated and now I am certainly not going to go into this because our exams are about 3 hours with people, but let's just say we looked at absolutely everything and lo and behold.

This was an individual who, you know, just was a very busy executive, had not gone to the dentist for quite some time. They went to dentist, did a scan, saw basically this brewing root canal infection when it was fixed.

And this, by the way, this is like many months. I am just like putting this in a nice little nutshell for you to hear. But basically when that resolved, inflammation dropped, later they got pregnant.

And I, for one minute, do not wanna suggest that optimizing the microbiome is going to be the key to getting pregnant, but this was just like a really fabulous case that I can report on as one tiny little lever in someone's health that had everything else was already optimized.

But how unique that was. Yeah, and again, for our viewers, HSCRP, highly sensitive C-reactive protein is a marker of inflammation. You do touch upon…

And I think it's, we gotta go there, this notion of micro and nano plastics. What is the relationship to, and I already entree this as we talked about some of the toxic things that we're exposed to.

But what's the relationships to pregnancy or conception? And beyond that, maybe some ideas about what we can be doing to minimize exposure. Sure. So, yes, this actually does dovetail and kind of go together with what we just mentioned, because micro nanoplastics, you know, is how the endocrine disrupting chemicals that we already discussed, they come together as a pair.

the physical particle itself and then we have the chemical component. I like to think about it as the micro or nano plastic. It's almost like this chemical taxi, right, where these chemicals kind of get a hitch a ride on and that's kind how they come about because the chemicals get added to the plastics in the first place to get them Very cool properties that we all love and appreciate and make our day to day life fantastic with the products that that, we use the problem is these micro nano plastics.

So we talked about the chemical component when in relation to the physical particle itself, you know. Now the data is a little bit less clear, right? We found them in all of the organs.

They're in the brain, they're on the ovaries, there on testes. Everywhere we've looked, we found him. And the real question is, it's a big question mark, like, well, is that causing problems?

And I sure as heck wouldn't say it is not doing anything and it isn't biologically inert. It seems to be the case that, you know, I don't know about what you think about this, but even if we don' have extremely clear data, there is a particle in our body that is not recognized, that makes the immune system not so happy.

And I think it can eventually mount an inflammatory response. That's why we see these associations with higher micro nanoplastics and like, you know, carotid artery plaque and heart disease.

This was in, Jammer or New England Journal of Medicine or one of those. But again, all of these association exist. We can't really point fingers about if it's doing anything, but I certainly think it's biologically plausible that they're causing some problems.

Oh, I don't, respectfully. It's not, it has been quite well verified. So you're right on target that these particles are by their physical nature pro-inflammatory, not even to mention, of course, now when I say that I'll mention the fact that, they are constructed of toxic things.

That the addition of the bisphenol A, for example, as we call it as a plasticizer or a a chemical that allows flexibility, that this then leaches out of these particles in the human body.

And you are so correct in indicating that they are throughout the body, they're in every organ in human bodies. I don't think you could probably find somebody living in America, for example, doesn't have significant evidence of particles.

As much as a teaspoon, 0.5% of the brain's weight is now characterized as being made of plastic. And you know, I like to talk about neuroplasticity and that is not what I'm talking about for sure.

That's too good. So you've developed this protocol and I have to ask, as I typically ask our guests on this program, how does mainstream medicine, healthcare, et cetera, fertility approaches, deal with or encounter when they encounter your work, what's that interaction like?

Truly, the doctors and the reproductive endocrinologist and OBGYNs, if they already take a multidisciplinary approach to fertility, they could not be more ecstatic about this work.

Because again, kind of like I mentioned, like probably almost 45 minutes ago, is, you know, I see my work as how do we optimize everything outside? of the clinic, right?

Microplastics and closing thoughts

I wrote this book very, very specifically and intentionally to do the following, which is not overlap with a reproductive endocrinologist labs or testing so that they can go complimentary, perfectly complimentary with one another.

That was very important to me because there's so much misinformation, conflicting information. I did not want to add to that. So that's number one. Number two, I I and I, I've never really mentioned this before ever, but I also wrote this book for the clinicians to help the conditions as you've probably seen in the book.

Like, yes, the consumer can read the bug, But I made it as if it was almost like a little reference guide where you can go to the back of every single chapter.

and just refer to the charts with all the studies. Like I have them on my screen to left and right so I don't cite anything, you know, I do not extrapolate anything that is wrong, of course.

So I made it as like a guide to help them as well because we are all in it to kind of lift couples up, to lift women up and we need to be taking a multidisciplinary care.

And look, there is always going to Uh, stations and say that, Hey, died in lifestyle. We really don't think that this influences equality whatsoever. So that is what I'm up against with this book.

Well, people tend to be down on what they're not up on, right? Thank you for being with us today. This is just wonderful, empowering, uplifting information that's going to help so many people.

So I appreciate the time you spent with me today, but also what you're doing. It's commendable and thank you. Thank you so much. Again, I consider you very much an OG in the functional medicine space.

And so it was amazing to be able to like, you know, kind of almost cross promote each other's ideas and which is the root cause leavers of health. So thank you.

You bet. We'll talk soon. Bye for now. Okay. Perfect. Quite an extraordinary discussion with Rachel Swanson, an expert whose combination of scientific rigor as well as clinical experience, clinical wisdom derived from that experience.

And as you see today, a deep compassion for women's health is really unmatched. Her new book is Trying, a great title, and it offers something that has been long missing from the mainstay approach to the fertility conversations that we have.

And that is a coherent and an integrated, an actionable roadmap that's fundamentally grounded in verifiable science. So from the trillions of microbial, we call them allies that shape our reproductive health in the gut, in vaginal microbiome, and even in their mouth, to the energy management systems of metabolic function, which we've talked about so extensively in our program, the mitochondria, two areas like environmental toxins.

Rachel brings fertility out of the realm of so-called vague cliches and into a space where women can finally take informed and very practical, meaningful and evidence-based steps.

So if our episode today resonated with you, I encourage you to explore her book, look at it in detail, and then share this conversation with anyone who is navigating or anyone whose perhaps preparing for the fertility journey.

Thanks for joining us here on The Empowering Neurologist. I'm Dr. David Perlmutter. And as always, stay curious and stay empowered. Bye for now.