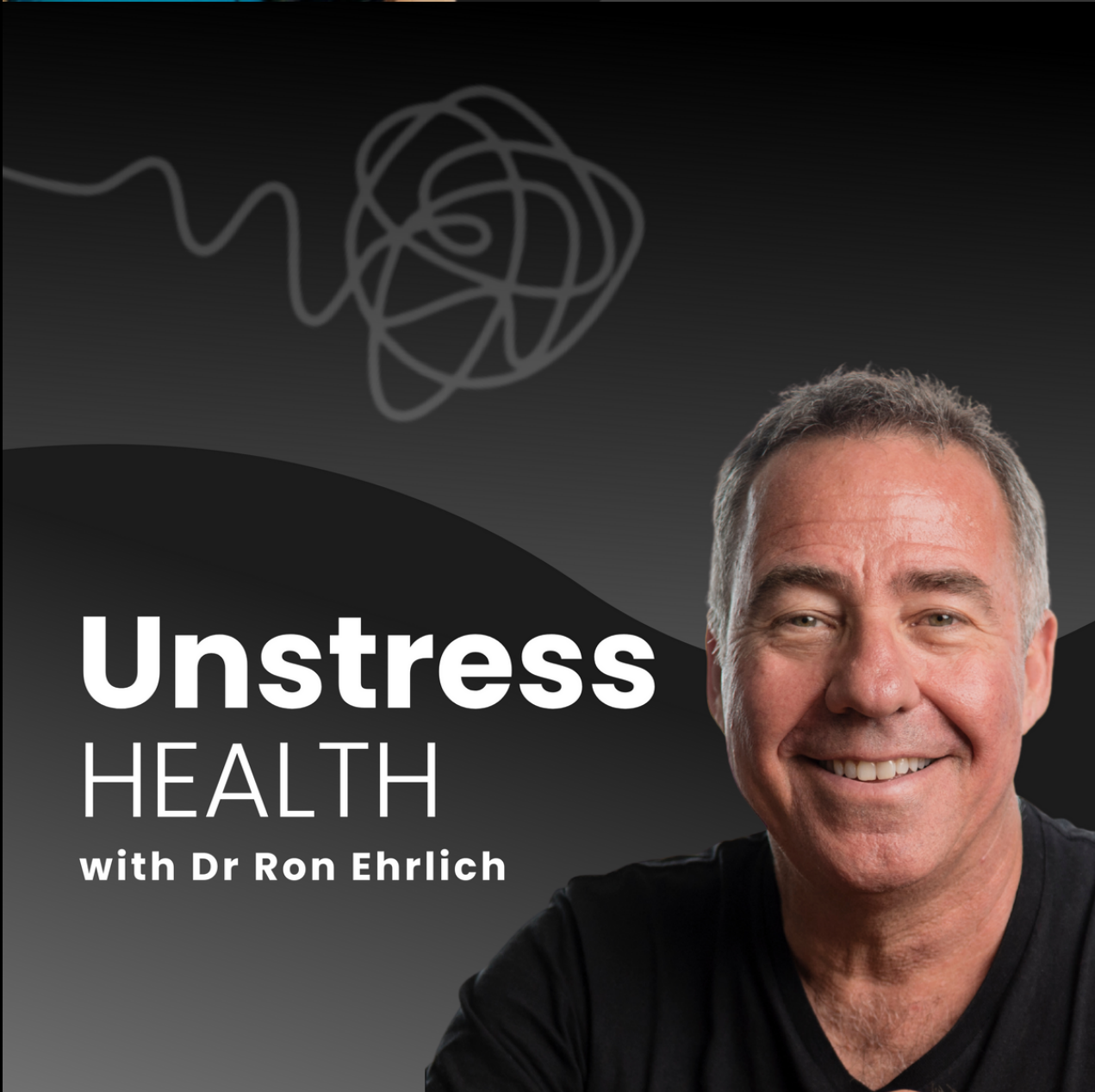




MIND-BODY CONNECTION UNLOCKED

Dr Olivia Lesslar



Unstress HEALTH

with Dr Ron Ehrlich

Podcast Transcript

Dr Ron Ehrlich: [00:00:00] Hello and welcome to Unstress. My name is Dr Ron Erlich. I'd like to acknowledge the traditional custodians of the land on which I am recording this podcast, the Gadigal people of the Eora Nation and pay my respects to their elders, past, present and emerging. I believe we have so much to learn about connection and respect, not just for the land, but for each other through our relationship to the land and how that impacts on our health and the health of the planet.

Dr Ron Ehrlich: [00:00:36] Well, today we're going to tackle a topic called Psychoneuroimmunology. Well, it's basically how the mind impacts on our health and it's an interesting one because way back in the 17th century, a French mathematician, philosopher René Descartes, suggested certain principles that if they had an impact on the way modern medicine is practised to this very day. He made the point that the human body is like a machine and it needs to be broken down to its individual parts so that we can understand how it works. And certainly in the 17th century that was probably a really good thing to do because we really didn't know very much, but at the end of the day was still dealing with a whole body. Secondly, he said that things have to be statistically significant to be relevant, and I think there's a point to that, of course. And the third thing he said was that the mind and body needed to be considered separate and there's some argument as to whether he was appeasing the very strong Catholic Church at the time but that influence of breaking the body down into many parts and separating the mind and body has permeated through modern medicine to this very day. Of course, many people now recognise that the mind and the body are inseparable. Wow, what a breakthrough.

Well, today my guest is Dr Olivia Lesslar. Now Olivia, Liv... Olivia has been on the podcast before. She is an Australian medical practitioner who has an interest in preventive medicine and Psychoneuroimmunology. Her expertise is biohacking, and there's a word we're going to explore today as well, and non-pharmaceutical interventions for complex conditions like neurodegeneration, cancer and the emerging science of mass cell activation syndrome and autoimmunity. She works with innovative,

high-profile international clinics, including the pre-eminent Los Angeles concierge practice, LifeSpan Medicine, and in Sydney, Cingulum Health, a Sydney-based brain optimisation clinic where she helps curate innovative, personalised neuroplastic programs. Olivia is a visiting expert to the Queensland Allergy Clinic and is an adjunct senior lecturer with the National Centre for Neuro Immunology and Emerging Diseases at the Menzies Health Institute of Griffith University, and she's a published clinical researcher on a broad range of topics and is medical Director of Chronic Fatigue Syndrome Health, an online recovery and advocacy program for chronic fatigue syndrome. And no doubt they'll be keeping busy with long COVID as well. Dr Olivia is affiliated also with UK's Prix Premier Longevity and Functional Medicine Clinic based in London, Wellgevity. She's a regular speaker on podcasts and at conferences, and in November 2022, she took to the TEDx Melbourne Stage. In 2021, Dr Olivia was featured in the New York City Journal, 50 under 50 for being an industry disrupter and a leader in the field of integrative medicine. Olivia is on the medical and clinical advisory boards for some great organisations. Oxford Health Span, Holo Health, The Dobbin Institute, Simplr Health, Biolytica, and she is trustee for the British College for Functional Medicine, where she's research and industry lead. And incidentally, Dr Olivia Lesslar is also on the advisory expert panel for our very own workplace wellbeing program on Unstress Health. I hope you enjoyed this conversation I had with Dr Olivia Lesslar. Liv, I know that you are doing a master's in Psychoneuroimmunology.

Dr Olivia Lesslar: [00:04:41] Well, actually, it's brain and mind sciences at Sydney.

Dr Ron Ehrlich: [00:04:43] Brain and mind sciences in Sydney. Go on well, this is something I think we all need to be interested in and affecting us. Tell us a bit about brain and mind science.

Dr Olivia Lesslar: [00:04:54] Well, the very fact that we're talking about brain and mind as if the two separate things, right? Needs to be addressed in the first place. Yeah. We doctors, scientists, I suppose, should never, in my opinion, have ever separated the two. So I suppose, you know, mind is more psychology, you know, theory of mind, theory of self, theory of others, that kind of stuff. And then brain is sort of more the neurobiology

neurochemistry, but they're so intertwined and we're truly understanding that now that you cannot separate the two because they affect each other. And to be treating a patient as a whole, which we should. Not just my opinion. I believe as well that patients are after that too. They really believe that is where they would like their doctors to go treating them as a whole. Who would have thunked it? I think that when we are trying to treat patients as a whole, we really not just have to understand pathologies of the brain, but we have to understand how psychology impacts all that, too.

Dr Ron Ehrlich: [00:06:02] Hmm. So, brain, mind. Well, you know, it was interesting to see the brain separated from the body. Dr Olivia Lesslar: [00:06:11] Yeah.

Dr Ron Ehrlich: [00:06:11] I think we've kind of brought that back together again. What are some of the things you're looking at within this program?

Dr Olivia Lesslar: [00:06:20] Okay. So at the moment, it's all... anyways, as I've said to you, going very slow with it, because I've got a couple of other things going in life as well.

Dr Ron Ehrlich: [00:06:28] I know you do, you're the busiest person I know.

Dr Olivia Lesslar: [00:06:30] Yeah. So but essentially, it's really starting from the basics. Looking at biology, looking at physiology, looking at the basics of psychology. So, as you know, I have an interest in psychoimmunology.

Dr Ron Ehrlich: [00:06:44] Yes.

Dr Olivia Lesslar: [00:06:44] And which is why I kind of went back to looking at possibly getting credentialed in it, because, you know, you'd like to think that all doctors were interested in PNI. Whereas you know where that means the intersection of psychology. The nervous system. I.e.

neurology as well immunology, the immune system, and also endocrinology or hormones. Because everybody knows stress can cause illness, stress can disrupt sleep. Stress can make your mood worse. But nobody quite goes just beyond that. But why? You know the biochemistry of this, how do... How are we able to affect physiology? How can we affect the immune system? By changing how you think about something. Psychologists have been talking about this for forever. And doctors, by virtue of the fact that we've been given the position we have in society, I think that we see soft sciences as soft. You know, and it's time that that changes and it is changing, which is great. People like Oliver Sacks and Bessel Van Der Kolk you know the... How impactful their work has been, not just in psychological sciences, but it's permeating into medical sciences, too, but mostly on patients and patients wanting more of that. That's demand and demand hopefully is going to drive supply.

Dr Ron Ehrlich: [00:08:27] Hmm. So there's something in the name Psychoneuroimmunology, which obviously suggests the link and I mean sorts of things like neurotransmitters that affect us in different ways, don't they? I mean there's an if thoughts of things which attach to cells and cause our genes to express themselves in particular like so in nutrients, so toxins, I mean, it's all, all connected. Isn't it?

Dr Olivia Lesslar: [00:08:56] Amazing. Amazing. It's a breakthrough.

Dr Ron Ehrlich: [00:08:58] It's a breakthrough. It's a major breakthrough.

Dr Olivia Lesslar: [00:08:59] Call the World Health Organisation now.

Dr Ron Ehrlich: [00:09:02] But it's not that it's not the way it's thought of. I mean, we were just talking before we started about a recent thing you went to on skin cancer. And skin cancer is a great example of a linear way of thinking. What... Tell us what the latest in your you know, you tell us about the meeting you went to and what the breakthroughs? What is new?

Dr Olivia Lesslar: [00:09:24] Yeah. So, you know, this was a GP event aimed at GP's and they were talking about radiation advances, immunotherapy. I mean, these things are fantastic. They

are truly helping patients with advanced skin cancers and who have not had hope up till now. But what was acutely still missing from this beautiful, wonderful presentation were things that are basic, you know, So they'll talk about risk factors for skin cancer being male, sun exposure, family history, prior diagnosis of the skin cancer. But there was no mention of, you know, your immune system, your skin's immune system, which is, you know, every organ has its own special immune system and nutrition, exercise, you know, all those things that we know are important. Sleep wakes up. I mean, I'm pretty sure and I know that you have gone to town on sleep and you have had far better people than me on your podcast talk about sleep. We know how important sleep is for the immune system. Why are we not talking to patients more urgently about that? You know, we're so caught up in this model of treatment that isn't... there's just isn't a place for prevention. And when you talk about prevention, I think that it feels, I don't know, soft. And so it just isn't given the kind of weight it deserves that, and I suspect the economic model. Right? That medicine finds itself in, that's the way it's driven. And so the way as doctors are practising medicine, it is just an outcome of the model that we're practising in. The only thing is, you know, sometimes it feels as if we don't even realise the beast that we're working with or for.

Dr Ron Ehrlich: [00:11:30] Mm hmm. Mm hmm.

Dr Olivia Lesslar: [00:11:31] And therefore, we can't agitate for better for our patients because we kind of get caught up in, you know, our thing. Treatment, management, drugs, the BMJ. When was it? Last year? A year before? Came out with investigative piece about what percentage of regulatory bodies. Income comes from industry.

Dr Ron Ehrlich: [00:11:59] Incredible.

Dr Olivia Lesslar: [00:12:00] The very people that are meant to be regulating.

Dr Ron Ehrlich: [00:12:02] Yes.

Dr Olivia Lesslar: [00:12:03] Australia was the largest percentage.

Dr Ron Ehrlich: [00:12:06] So we're talking the TGA here.

Dr Olivia Lesslar: [00:12:08] That's right. Therapeutic goods of Australia.

Dr Ron Ehrlich: [00:12:10] Yep.

Dr Olivia Lesslar: [00:12:11] According to the BMJ. Yes. I haven't delved into the research myself.

Dr Ron Ehrlich: [00:12:16] Yes, this is the British Medical Journal for those that are and acronyms. But British Medical Journal is a respected journal.

Dr Olivia Lesslar: [00:12:24] Yes. 96% yes. Of the TGA's income comes from industry.

Dr Ron Ehrlich: [00:12:32] Yes.

Dr Olivia Lesslar: [00:12:33] So, of course, I think that probably, possibly that might have something to do with why our guidelines are very drug-focussed. Now, we, of course, always state because it is true, there is absolutely a place for drugs for sure. They are a very important tool in our toolbox. We just have to make sure that we don't forget that there are other tools.

Dr Ron Ehrlich: [00:13:00] I guess.

Dr Olivia Lesslar: [00:13:01] Available.

Dr Ron Ehrlich: [00:13:01] Yeah, well, it kind of goes back to what was the biggest breakthrough in medical... in health in the last hundred and 50 years. And people will always go to medical upon.

Dr Olivia Lesslar: [00:13:13] Antibiotic.

Dr Ron Ehrlich: [00:13:13] Antibiotics, which is significantly no question about that. But drugs and medical breakthrough. And I think it was really the biggest breakthroughs were for clean water and sanitation. So we're still going back to that. But, yes, to your point about I think the FDA is about 60% federal. The Food and Drug Administration, about 60%.

Dr Olivia Lesslar: [00:13:35] Think it's a bit more than that.

Dr Ron Ehrlich: [00:13:37] Maybe it is more... But as banks can still...

Dr Olivia Lesslar: [00:13:39] Can we link to that? To that paper?

Dr Ron Ehrlich: [00:13:41] Yes, we can. We will. And there was another paper, actually, which was about key opinion leaders and product champions being in charge of a lot of regulatory bodies as well. And we've seen that. But we digress for a moment. We digress. But back onto... It's interesting about the curiosity, though, back to the skin cancer story, because it's still slip, slop and slap, isn't it?

Dr Olivia Lesslar: [00:14:04] Yes. Yeah.

Dr Ron Ehrlich: [00:14:04] Is it still?

Dr Olivia Lesslar: [00:14:05] I think maybe they've updated that and added shade something...

Dr Ron Ehrlich: [00:14:12] And shade...

Dr Olivia Lesslar: [00:14:12] Shade and...

Dr Ron Ehrlich: [00:14:15] Another S?

Dr Olivia Lesslar: [00:14:15] I think so, something...

Dr Ron Ehrlich: [00:14:17] Okay. Well, it's so interesting to go to the beach, and...

Dr Olivia Lesslar: [00:14:21] S is not selenium, so...

Dr Ron Ehrlich: [00:14:23] Well, I was going to say, if you were saying to somebody, okay, skin cancers potentially a problem for you, what are some of the things that would really predispose? I mean, yes, obviously a previous history of skin cancer. That's a bit of that's a bit obvious and a family history.

I have lots of respect for family history.

Dr Ron Ehrlich: [00:14:43] But what else?

Dr Olivia Lesslar: [00:14:44] What else?

Dr Olivia Lesslar: [00:14:46] Okay. Well, there is a concept called photo prevention, and that is, if you see Sun earlier in the day, you will be more primed to see sun later in the day. So midday sun. So I guess it goes harks back to evolution where we were in the sun pretty much all day from sunrise to sunset. And there is a special phenomenon that happens in the skin whereby it does take cues from your environment, not just sun, but also pressure and humidity and all these sorts of things. And it helps you, it helps calculate risk, helps to protect you and, you know, talks to your brain mind nervous system because this beautiful dance is there to ensure the number one reason why we're even around and that's survival. Right? So if you're able to give your skin the information that, hey, you're out and about, it's early, early morning, probably going to be here till a bit later, your skin prepares as opposed to when you're in the cave from sunrise. So I keep I'm in office, you know, and then you do your burrito run at 12 noon and then you burn within 5 minutes. "Oh, it's because of my Irish heritage." That's not really quite how it is. It's so much more complex than that. And, you know, I'm not claiming to be an expert. I'm trying to say it is so complex that when we distil complexity down to slip, slop, slap, we're missing a massive amount of nuance. The other thing I talk to patients about is that, you know, your skin is such a special organ that it has its own needs. Zinc, Vitamin A, the omega three fatty acids, vitamin D, of course, selenium, all these... Vitamin C, all these special ingredients that go into helping the immune system of the skin do its job. When we restrict those things because of insufficiencies in our diet. We're going to handicap our immune system. And when it's handicapped, it can't do the job it's meant to do. Then when you get a skin cancer, you know, it's a shame because your body's trying to talk to you and instead of listening to it, we cut, we burn, we smother with sunscreen, and we just don't know the lessons that we need to learn. You know, again, not saying that those treatments aren't necessary a lot of the time they are. But let's go back to some nuanced discussion.

Dr Ron Ehrlich: [00:17:39] One of the things that's come out of the slip,

slop, slap and is and the fear of the sun is vitamin D deficiency, that is almost at pandemic proportions.

Dr Olivia Lesslar: [00:17:51] Absolutely. Even by Australian Bureau of Statistics levels. So if you go to the ABS now and you look at vitamin D statistics, Australians by and large, I haven't looked at this for a while, but it'll be something like 30 plus plus percent of vitamin D deficient. Not insufficient because obviously these sorts of things is black and white deficient by Australian standards, which is 49 nanomoles and during winter. So a big proportion of people who are sitting around with the immune system being handicapped. So...

Dr Ron Ehrlich: [00:18:34] Which predisposes you to?

Dr Olivia Lesslar: [00:18:35] Skin cancer.

Dr Ron Ehrlich: [00:18:37] So the only thing that vitamin D is and I mean, I know I did a program on a... Ten years ago podcast and I tested my Vitamin D levels for the first time ever, and I think my levels were around 30 or 40. So that is really bad. I mean, what is the you talking about, 49 as a winter. But what's the ideal range you think for vitamin D?

Dr Olivia Lesslar: [00:19:01] Oh, okay. So in Australia the reference range is 49 nanomoles is the lower limit. The upper limit, they see something over 100 and let's say 100 or so. I can't remember now, but there have been enough discussions worldwide in the US, in the Europe, you know, in Europe, trying to talk more about not just the levels of vitamin D that are going to prevent rickets, but levels of vitamin D that are going to support optimal health.

Dr Ron Ehrlich: [00:19:31] Yeah,.

Dr Olivia Lesslar: [00:19:32] And we're talking now moving that way passive 70 nanomoles at a minimum.

Dr Ron Ehrlich: [00:19:38] Mm hmm.

Dr Olivia Lesslar: [00:19:39] I mean, I've heard people talking 150 I've

heard people talking about 300. Right? Mind you, I really do think that the nuance here, again, nuance, nuance, nuance is who, what, when, how, why? Because, you know, I used to give patients vitamin D supplementation. I'm a little bit more loathe to do that now because, like everything else, when you give people a Band-Aid, you know, you miss that conversation about what are the core factors that are required for vitamin D? How does your body determine making active vitamin D? What's the role of the kidneys? What's the role of the liver? What's the role of your skin? What's the role of actual sunlight?

Dr Ron Ehrlich: [00:20:22] Hmm.

Dr Olivia Lesslar: [00:20:22] You know, and it's I mean, some people make this speciality just vitamin D. Right? And again, I'm no expert, but I'm definitely deferring to the fact that it's a little bit more complicated than we're making it out to be. In other words, as opposed to, oh, this is a much better level. Let's just say 70 of 120 nanomoles. Let's get your levels up to that injection supplement. We are... Us humans have been forged in the fires of evolution is taking us millions of years to get to where we are. I think that when we don't pay enough respect to natural processes, we are going to shoot ourselves in the foot.

Dr Ron Ehrlich: [00:21:08] And how can we optimise that? From natural processes? I mean, what foods and what activities should we be doing to improve vitamin D levels?

Dr Olivia Lesslar: [00:21:17] Well. You know, the the, the basic thing, of course, is to get out of the sun a little bit more often, retrain ourselves. Look, of course, is there something to be said about the fact that there are many people in Australia who weren't made for our sun and the sun is that much more, you know, vicious here? And... But barring that and it's about not just being in the sun, but working in the sun, moving in the sun, having respect for the sun such that you're getting out a little bit earlier so that you are, you know, employing that photo prevention. It's about having good whole foods it's going to feed your skin's immune system and this is now going back into PNI.

Dr Ron Ehrlich: [00:22:06] Mm hmm.

Dr Olivia Lesslar: [00:22:06] The skin is one of the guardian sites of the body. So, guardian sites are areas of your body which if you are going to be breached, your integrity was going to be breached by a virus, bacteria, parasite. It would come through eyes, nose, respiratory tract, lungs, mouth, gastrointestinal tract, skin, especially broken skin, specifically those of the hands and the feet. For women vagina and then to a lesser extent, your urethra and bladder. So these are your guardian sites and the guardian sites are special. They've got more mass cells, they've got more sort of first line of defence cells and so we have to respect that too. And interact with our skin, knowing that it's a little bit more sensitive to perceived threats or two threats.

Dr Ron Ehrlich: [00:23:05] Hmm. Interesting. Talk about mass cells. I mean, they're a very important part of our whole immune response. Can we talk a little bit about mass cells?

Dr Olivia Lesslar: [00:23:15] Yeah, well, mass cells are your first line of defence, essentially. And they contain new granules in the granules when the mass cells get disturbed again by threat or perception of threat. The mass cells will degranulate. And then those granules that come out are going to essentially incite an inflammatory response. Because, you know, you've been in this game a lot longer than me. You know better than I do. Inflammation... inflammation in the short term is protective. Regenerative. Inflammation that goes on, chronic inflammation. That's when you're going to start getting some run into some problems. So most people know about histamine, which is one of the ingredients, one of the granules that's in mass cells, along with IL6 and tumour necrosis factor. But histamine is one of the things that we know about because everybody knows who has taken at some point an antihistamine. So histamine is going to lead to excess mucus, right? Because... So think about it in this way, when the mass cells do granulation and release its... The chemicals inside it's meant to protect you from an enemy. The mucus that winds up being induced is to wrap itself around a virus or pollen, right? So that you sneeze it out or you start crying it out. The redness and the swelling is because they're recruiting more red cells, more white cells to help with the battle. The lymphatic system is going to be going to help, you know, carry away some of the bits and pieces from the battle so that they can present to other immune cells

to say, "hey, have we seen this enemy before? Do you have antibodies to this hidden away in the back, in the bunker?" It will cause itching because we want to scratch off a potential enemy at these beautiful evolutionary mechanisms that the body has that the immune system employs is not only, of course, more prominent on the guardian sites, but we of course, do have mass cells running around on the inside and the reason why it plays into PNI is because of that wood perceived threat. So, when you breathe in a pollen, it's going to you know, it's going to incite that immune response. When you start the beginning of a bacterial infection or virus that's come through your nose, or your eyes, or you've ingested something, the immune system starts up. I mean, that makes sense to us. What we're now starting to realise is if your body perceives a threat, it can incite the same pathway to be gone down by the immune system. People who have had previous traumas, adverse childhood events and, you know, other traumatic things happen to them. People who are in the middle of a crisis, people who are having issues with their spouse, people who are having problems at work, people who can't cope, people who have lost resilience, people who have been sick or people who've had COVID. Right? Their immune system is a little bit twitchy and will react much easily, much more easily and will react when there is a perception of threat.

Dr Ron Ehrlich: [00:26:59] And that is the psycho impacting on the neuro affecting the immuno.

Dr Olivia Lesslar: [00:27:06] 100%

Dr Ron Ehrlich: [00:27:07] That's a nice way of putting it. Tell me you talked about, I mean, the lovely description of the acute response. When does acute become chronic? Because it's chronic, that's a real problem, isn't it?

Dr Olivia Lesslar: [00:27:17] Yeah. Look, you know, chronic is when for whatever reason this, I mean... Chronic is when you haven't been able to efficiently and effectively resolve the acute. Robert Naviaux talks about the cell danger response and about how every time a cell is traumatised or gets upset or whatever it is, and then it gets pushed out of its normal cycle, it goes into CDR1, 2, 3, you know, just that process of doing your fights, then proliferating and then

regenerating and going back into your usual cycle. That is the same with how it should be with acute incidents. There is definitely a lack of resilience in this day and age, not just from an immune perspective, from a psychological perspective. Part of it is that we're not living in an evolutionary way. We're siloed in our caves. We're not in a village. We are forced to go to schools and we're forced to learn things in a way that may not be conducive to the way that we would want to learn or need to learn things. We're no longer in touch with the environment. We no longer in touch with the food that we'll be eating. We no longer have to hunt and kill our food, for that matter. After a while, it's no surprise that we're no longer in touch with ourselves. The number of people who aren't quite sure what symptoms mean because symptoms are bad, bad symptoms. You have a fever, Panadol, you know you have an itch, cream, you have a headache and the ibuprofen. We no longer know what these things mean. We no longer can listen to our body. It's no wonder our resilience is low. Then you go into that historical perspective of the fact that Industrial Revolution meant that now we are 8 hours in the workplace, seemingly meant to be sleeping 8 hours and seemingly meant to be having 8 hours of social time with our family. And we all know that we're sleeping much less, we're working much less. And then we're travelling to, to and from work, which eats into our personal time, by the way. And I've always had a problem with that. And so now we don't have much social time. It's so much more complicated than I certainly will ever understand. But I do know that the psychological component to disease or illness is huge. Can we please make sure that we're not talking about psychosomatic? Right? Which is a dirty word. Okay.

Dr Ron Ehrlich: [00:30:16] Well, let's define what psychosomatic. It's all in your head, basically.

Dr Olivia Lesslar: [00:30:21] Yes.

Dr Ron Ehrlich: [00:30:21] It's not really happening. It's just all in your head.

Dr Olivia Lesslar: [00:30:23] Right. You're making stuff up. Okay. And the thing is, if the word psychosomatic is military just means something psychological, which you sumatized it's now express in the body. By and large, that, okay, I get it. But it has been hijacked by so many doctors

to belittle patients that now in patients are very nervous, get very frustrated very quickly, which they should. When there is even a hint that whatever you are experiencing physically, it's not really happening. You're making stuff up, especially since the tests are normal.

Dr Ron Ehrlich: [00:31:06] Yes. And listening to your body is something I really encourage our patients to do. And it's interesting to think about that. What are some of the things we should be listening for when we're saying, listen to our body? Okay. I mean, we're trying to cover up symptoms almost before they arise. But take a temperature, for example. What should we do with the temperature if we were listening to our body? Should... What's the story that... What would you say there if we let nature take its course?

Dr Olivia Lesslar: [00:31:41] So temperature is a great one because temperature usually means that your body is more metabolically active. We're not even talking about infection here. Right? Because your core body temperature actually goes up a little bit when you are eating a meal. Why is that? Well, because not only do things work better in slightly higher temperatures, so, you know, you gastric acid and you digestion, but as well, that slightly higher temperature is going to get your immune system just that little bit more awake. And if guardians site, mouth gut something were going to hitch a ride on your food. Your immune system needs to be ready for it. So that's that. Understanding that from an evolution perspective, we're actually meant to have our core body temperature dropped slightly for sleep. I mean, melatonin drops core brain temperature by like 0.3 degrees centigrade, for example. That's why some of the bio hacks... Dr Ron Ehrlich: [00:32:45] We're going to be talking about biohacks.

Dr Olivia Lesslar: [00:32:46] Should I?

Dr Ron Ehrlich: [00:32:47] No, no. Go, go, go, go. We'll summarise these anyways...

Dr Olivia Lesslar: [00:32:50] Anyway, so, you know, one of the bio hacks for sleep is to have a warm shower and then to end on cold or to have a hot bath and then come out into a cool room so that there's a temperature differential. You go from high to low and it triggers that "Okay it's time to

sleep." And that's why a lot of people, when they go to on say, onsens or spas and they get really want they get very tired after because it's that sort of temperature switch. So temperature in those sorts of perspective is just a natural part of being. If we understand it, then we can hack it. Okay. When it comes to slightly increased temperature because of a possible infection, I'd actually like to address infections because we have been programmed now to believe that any infection is bad and must be dealt with now, yesterday. As opposed to, okay, it's another standoff. Our immune system is going to jostle. So the virus is going to jostle and they're going to have a little bit of a you know, and a little bit of dance. And then at some point, of course, usually we win. We don't have to intervene every time. You know, what we do need to do is take in more fluids, relax and wait. This taking of antipyretic or anti fever medications is a very first-world marketing thing. You know, is there a place for it? Of course. The time and place for antipyretics is when temperature gets dangerously high. Right? And that is actually something that is disputed as well. What that means, because children can have febrile seizures, but they actually seize because of higher temperatures. And a lot of the time they will go to hospital. Of course, it's a very scary event, but most of the time the doctors will actually say, "Don't worry, it happens. There's no long-lasting effects and you know we'll just keep an eye on your kid." Because we know that actually it's I wouldn't say benign, but it's not as malignant as people think it is. So the long and the short of it is that higher temperatures can be tolerated. And what we're looking for instead are the symptoms that go along with that. So a high temperature means rest, fluids, keep an eye. Higher, even more higher temperatures than that, along with malaise, vomiting, inability to focus, those... That's been, of course, you know, you going to to seek medical help. I think that it's a little bit again, that word nuance, you know, when we're pushing these sorts of things and not to say or to say to parents, don't use anti fever medications, it's just... It's more about just take a step back and just breathe, because a lot of the time what children want is to be held and to be supported.

Dr Ron Ehrlich: [00:36:20] And I guess the upside of that is that there's this thing called natural immunity, which is improved by allowing it to run a course.

Dr Olivia Lesslar: [00:36:31] Yes.

Dr Ron Ehrlich: [00:36:31] As a kind of must be a very delicate balance there. But I guess the takeaway is not to panic...

Dr Olivia Lesslar: [00:36:36] Yes. Absolutely.

Dr Ron Ehrlich: [00:36:37] Straight away and try and hit everything on the head. Another thing to listen to is bowel movements.

Dr Olivia Lesslar: [00:36:44] Yes.

Dr Ron Ehrlich: [00:36:46] I mean, you know, I remember talking to our friend Dr Pran Yoganathan, and I've heard all the gastroenterologists say going to having a bowel movement every two or three days is not unusual. And I think that's probably true. It probably isn't unusual, but is it ideal?

Dr Olivia Lesslar: [00:37:06] Right. And, you know, that's and it's so individual and I still don't have an answer for this. Right? Because I had a patient come through a couple of days ago who had three bowel movements a day. And he'd always been that way. Now, just because someone has always been there doesn't necessarily mean it's right either. But, you know, instead of going, "Oh, that's way too much." I just took a step back first and I'm like, "Okay, first of all, what? Where are you on the Bristol Stool chart? What's the consistency? Does it float? Does it sink? Does it smell? Is it sticky?" You know, you have to ask all these other questions. I hope someone's watching... Listening to this podcast over dinner, by the way. And then from there, I have a better gauge of what that actually means for this particular patient. Right? So I actually don't feel I have an answer for this anymore, I used to. I feel like... I feel like. I used to, you know, at least once a day, you know, going three days or more is probably not enough. I don't know.

Dr Ron Ehrlich: [00:38:08] I mean, I've always kind of thought that if you're putting food in one end and depends on how much food you put in. I would suggest three bowel movements a day was probably putting quite a lot in the other end, the top end. But it's the consistency of it and you mentioned the Bristol Stool chart and I think they have seven sort of types of stools from really watery to like tiny pellets. And the balance ideal is somewhere in

the middle, which as you said, you know, but that's a real... That's a report card, isn't it? I mean...

Dr Olivia Lesslar: [00:38:45] It is.

Dr Ron Ehrlich: [00:38:45] Every day or every day if you are doing it every day, getting a report card. But what if you were not you were still feeding this beast, yourself and yet you were not going to the toilet for more than once or twice a week? What's going on there?

Dr Olivia Lesslar: [00:39:01] Well, then, you know, the other question I was saying I...

Dr Ron Ehrlich: [00:39:04] I mean, I'm just worried about...

Dr Olivia Lesslar: [00:39:04] Is, oh, okay...

Dr Ron Ehrlich: [00:39:08] I don't have that problem. I'm blessed.

Dr Olivia Lesslar: [00:39:10] Well, we...

Dr Ron Ehrlich: [00:39:11] More sharing here, possibly necessary but I'm...

Dr Olivia Lesslar: [00:39:13] So then the other nuances to this is, are you in a position where maybe your body is trying to slow things down because it's trying to obstruct more nutrients from a very low-nutrient diet?

Dr Ron Ehrlich: [00:39:30] Interesting...

Dr Olivia Lesslar: [00:39:30] I don't know.

Dr Ron Ehrlich: [00:39:31] Yeah. Yeah. No, no, no. That's interesting.

Dr Olivia Lesslar: [00:39:34] Yeah. So and that's why I, I'm still going to aim for, you know, once a day.

Dr Ron Ehrlich: [00:39:41] I feel comfortable with that. What about skins?

Skin's another one looking at what does skin tell us when we see people with beautiful skin or we see people with acne or... You know, what is that? What is the reflection of it?

Dr Olivia Lesslar: [00:39:56] You know, the interesting thing about skin is that that most chronic diseases will have some sort of cutaneous manifestation, like whether it's celiac or even cardiovascular, diabetes, you know, the skin tags, for example. There's always a continuous manifestation. I sometimes say, oh, it's because, you know, thousands of years ago, it's so that the medicine men can have an idea that something might not be right with you looking at you from across the fire. Right? But... The other thing about skin is that it comes from the same germ layer when you're an embryo. Well, even before you an embryo, same germ layer as the brain and the nervous system. And that's why the skin and the brain have a very special relationship. It's even sort of encoded in our language. What's gotten under your skin? Being thick-skinned or being thin skin, for example? The skin is absolutely one of the areas that's going to manifest or whatever is going on in the inside, partly as well, because it's a massive guardian site. So when your immune system and nervous system and the psychological aspects, everything is playing around trying to figure things out, skin winds up, showing proof of that, whether it's psoriasis, eczema, looking dry, looking oily, like for myself, when I am when I'm really stressed, my scalp is really oily and I have to wash my hair more often. Now my body's trying to protect me because there's antimicrobials in oil, for example. Right? And not everybody will manifest the psychological goings on in the same way physically. But you know, your own triggers, you know, people start to say, "Oh, you know, I get I get pimples when I'm really stressed" or something like that. And so you're going to have to start figuring out what your signs are. But I guess the answer to your question is that. They are signs and your skin is usually going to manifest whatever is happening on the inside. You know, one of the other things about the PNI perspective to skin stuff is that it also does hark back to the fact that if we are trying to protect ourselves from real or imagined predators or threats, the skin is our protection, our number one protection, isn't it? It is the one thing that's surrounding us. And so that's why when you're calling for help, comes out of the skin, whether it's flushing, redness, or itching or needing a cold shower or needing a hot shower or something like that, your skin is always involved.

Dr Ron Ehrlich: [00:43:07] Yeah. Interesting. Another one that's really important is mitochondria. You know, like just give us firstly, and I think this is something everyone needs to be aware of, but just give us mitochondria 101. I mean, what do you, you know, tell us about mitochondria.

Dr Olivia Lesslar: [00:43:25] And so the interesting thing about mitochondria that I think many people do know is that it is I'm pretty sure in...

Dr Ron Ehrlich: [00:43:43] The microphone won't pick that up.

Dr Olivia Lesslar: [00:43:46] I accepted that from an evolutionary perspective, the mitochondria was actually a bacteria that has a symbiotic relationship with the early... Our early ancestors and therefore is still part of us. They have their own DNA, for example, mitochondrial DNA. They are what's known as the powerhouses of the cell, but actually their function goes well beyond that. And in fact, Chris Palmer.

Dr Ron Ehrlich: [00:44:17] Yes.

Dr Olivia Lesslar: [00:44:17] Who wrote Brain Energy, really elucidates that very well in some of the podcasts that he's been on recently. So, in other words, mitochondria is not just the powerhouse of the cell. However, if we're going to talk about that, because, you know, it is one of its major functions, every cell is like a car. Right? And you need to put fuel in that car. And every time you run that car, there's going to be exhaust and you're going to have to have some sort of antioxidant capacity to deal with that exhaust. But the fuel that you're putting into the car is going to be ATP, which is one of the packets of energy that the mitochondria is making. I think that you've had some really great people on your podcast talking about light.

Dr Ron Ehrlich: [00:45:04] Yes. That Dr Jalal Khan is being one and Jason Gordon Smith another talking about that impact of the light and ATP for our listener who's not up on acronyms that's okay is adenosine triphosphate, ATP it's a power unit.

Dr Olivia Lesslar: [00:45:25] Yes.

Dr Ron Ehrlich: [00:45:25] And the cell...

Dr Olivia Lesslar: [00:45:26] And just zooming in to the inner membrane of the mitochondria where all this fun stuff is happening with the electron transport chain. Which is that chain that's necessary to pump hydrogen out of the inside of the mitochondria. And then it has this ratio difference. We get more hydrogen on the outside and the inside and then it drives through a hydrogen pump which then makes ATP. This beautiful electron transport chain also has between proteins three and four, something called a cytochrome C. The cytochrome C is a light receptor, which is why infrared light on those red light machines can help with that because it's driving the ETC, driving the electron transport chain. But, you know, with those guests that you've had talking about light and how important it is and the fact that we've evolved with this light, I think you started going into biophotons as well.

Dr Ron Ehrlich: [00:46:27] Why not leave that sound on... Another program we'll get on to... I'm just exploring that. I mean, you know, I used to think that. Well, I still do think that sleeping and breathing are pretty foundational. But I would now come to the conclusion that our relationship with light, is even more foundational. And some of the problems we've introduced to our lives as we surround ourselves with this technology.

Dr Olivia Lesslar: [00:46:56] Mm hmm.

Dr Ron Ehrlich: [00:46:57] But and, coming back to the slip, slop, slap is irrelevant. You know, this is kind of going around in the circle again. Why it's such a problem.

Dr Olivia Lesslar: [00:47:07] Yeah.

Dr Ron Ehrlich: [00:47:08] Because we kind of told this thing 93 million miles away the sun, which is so critically important for every aspect of life. We need to be scared of it. Yeah, but these things we carry around in our pockets, put to our heads, rest in our laps, and spend our entire day in front of us. No problem at all.

Dr Olivia Lesslar: [00:47:27] No problem. Right? Exactly.

Dr Ron Ehrlich: [00:47:29] And yet there is... There are problems if the evidence is anything to go by. But what are some of the things that can improve? You mentioned red light and the improving mitochondrial function. How can we do that?

Dr Olivia Lesslar: [00:47:42] So the mitochondria is so complex, we kind of made mention before about the CDR cell danger response. Right? And that's Robert Naviaux's paper and theory about what stages a cell has to go through to repair after damage. I subscribe to CDR theory. I love it. I think it's very pretty. You know...

Dr Ron Ehrlich: [00:48:05] What is the theory? I mean, the theory is there's a memory of trauma or threat or talk to, you know, the CDF theory.

Dr Olivia Lesslar: [00:48:12] So the idea is that when a...

Dr Ron Ehrlich: [00:48:14] Cell damaged...

Dr Olivia Lesslar: [00:48:15] Cell danger response.

Dr Ron Ehrlich: [00:48:16] Cell danger response...

Dr Olivia Lesslar: [00:48:17] So cell danger response is actually how after trauma of some description, a cell needs to then repair. Right? I mean, we have all these fancy words already autophagy, apoptosis, ferroptosis. You know, we know that it's not just as simple as damage repair. This part, this is a process so when a cell is damaged, it then kicks into what's called CDR1 cell danger response phase one and there's three phases to go back to being baseline. And the first phase is about making sure that the cell actually does what it needs to do. I mean, it was attacked or it had an enemy that it needs to deal with. And so it does that and then the next phase is proliferation where the cell is starting to repair all the different organelles on the inside that, you know, that it's used up, for example, in the fight. And then the next part is preparing to go back into baseline. Now, it is a very...

Dr Ron Ehrlich: [00:49:17] Where it started before it was damaged.

Dr Olivia Lesslar: [00:49:19] Right, exactly. Okay. And unfortunately not as you know, and it depends on person to person, but not all your cells have to be ready before it passes a checkpoint to go into the next phase of the cell danger response before it goes back to baseline. And so the theory is that, for example, ageing is actually an accumulation of all these cells who've kind of been left behind, you know, not quite making the checkpoint. Right? But not bad enough to induce apoptosis, which is the programmed cell death. And so you had this accumulation of all these cells at different levels of functioning because they all haven't gone back to that baseline cell state. Other theories that CDR are sort of plays into is things like MECFS, which is chronic fatigue syndrome whereby they say that the majority of the cells in this person or percentage you don't know but hasn't actually been able to get past that last checkpoint to go back into a normal state. And so this sort of hibernation kind of place, because the cell needs to but can't quite repair. So it's a really interesting theory. We'll be talking about mitochondria.

Dr Ron Ehrlich: [00:50:43] We're talking about mitochondria. But but cell danger response is interesting. You mentioned also apoptosis, which is cell programmed?

Dr Olivia Lesslar: [00:50:51] Programmed cell death.

Dr Ron Ehrlich: [00:50:52] And autophagy?

Dr Olivia Lesslar: [00:50:55] Housekeeping. Cell housekeeping.

Dr Ron Ehrlich: [00:50:56] What does that mean?

Dr Olivia Lesslar: [00:50:58] So it means that. Okay, so making a cell is actually a very metabolically expensive endeavour. So you have to be using your cell, your immune system. Your metabolic system has to be quite sure that you are committed to making a new cell because it's very expensive. Right? In other words, that's why people they don't gain weight like this. Right? Like a slope. They gain it in steps. So you hold, hold, hold, hold, hold until the adipocytes, the fat

cells that you have can't take any more. All right. You're really committed to adding more energy. Fine. We'll make another cell, and then you have this step up. Right? Because your cells, I mean, your body would really prefer if you were truly committed before they make a cell. But once you've made a cell, you're committed now. So then adipocytes get bigger and smaller, bigger and smaller as you lose and gain weight. But that's why it's so hard for people to gain weight, because for your cell to then induce apoptosis to get rid of that cell that they put so much energy into. They are going to hang on to it for dear life. So autophagy is where instead of programmed cell death, the... There are chaperone proteins that should say HSP 70 is one of them. Heat shock protein 70 where they go into the cell and they clean stuff up. Okay, guys, this is what happens in fasting, for example, We don't know where our next calorie is. So, you know, and we're of course, not going to get rid of you. You're not going to induce apoptosis because we might need you. So what we're going to do is make you more efficient, clean, clean, clean, clean, clean. And so it's only when you really have committed to getting rid of that cell and it takes time that's been apoptosis or some other way to get rid of the cell is induced.

Dr Ron Ehrlich: [00:52:53] And coming back to mitochondria that... We're talking about improving mitochondrial function. I mean, I'm guessing so many of the things we know are good for our health are actually good for our health because of that. Is that a fair statement?

Dr Olivia Lesslar: [00:53:07] Yeah. Yeah, absolutely. No, absolutely. You know, and that's why sometimes this sort of stuff can be boring and that's why people put new words to wellness or health, because we just give the same message, but we have to put lipstick on it. Right? So...

Dr Ron Ehrlich: [00:53:26] What we're going to be talking about longevity and biohacking in a moment. But we used to talk about doing stuff that was good for your health and hoping you lived longer. That's now called biohacking and longevity studies.

Dr Olivia Lesslar: [00:53:39] Yeah. You know, and I think that even though biohacking and longevity absolutely have a place, you know, it gets people all fired up about health and well-being.

Guess I'm interested in, you know, looking at the studies and taking care of themselves and all that, because we've almost gamified it a little bit, which I guess in this day and age we need to do that. Fine. But we really do. At some point, you need a mom and dad to just keep saying, hey, you need to get some good sleep, good quality sleep, You need to have good quality food, you to drink clean mineral water. And I say mineral. I don't mean, you know, gassy water from the... From a bottle. I mean solid water that's got minerals in it, just like we used to drink from, you know, streams and stuff. You need to have, you know, good mindset, an attitude, community, breathing well, you know more about this than I do. All those really foundational basic stuff which none of us get right, not even the best of us.

Dr Ron Ehrlich: [00:54:44] So it's aspirational. We can talk about it, but it's aspirational for us as much as the next person.

Dr Olivia Lesslar: [00:54:50] Right. And then I add to that, because we are always going to be at some point struggling with one or two of these things and always trying, always hoping for better, always trying. You fall off the wagon you get on it the next day. Right? The one thing I need to add to this is compassion. Compassion from your practitioner, but self-compassion as well, because it is hard to be doing these things regularly, consistently in our modern society when we also want to be hanging out with friends and having dinner at 7 p.m. in the city, having a glass of red wine, you know, and I would never take anything away from my patients that gives them joy. You're not even like you... Two glasses or three because you need to try and figure out what voids are being filled first before you start taking things away from patients which are giving them joy. And I have seen this in my patients, and that is this If you do something that isn't amazing for your health objectively, but you do it with mindfulness, with friends, with joy, with happiness, because you enjoy the smell of a cigar or whatever it may be that is going to go for this. But, you know, that is so much more of a life than being bound to rules and regulations and essentially orthorexia around your food and exercise and beating yourself and having a lack of compassion for the fact that you just aren't disciplined enough, you know, and everyone has their own journey. And that's why compassion is this very fluid concept, because it's different for everybody. All I know now is that the Buddhist had it right. You know.

Dr Ron Ehrlich: [00:56:39] It's so interesting. We've just done a program a few weeks ago on Compassion with Paul Gilbert, the author of The Compassionate Mind and at the Compassion Focussed Therapy. And he talks about threat, which you've just you've talked about in various ways that we try to protect ourselves. Threat, action and then soothing. This is a very important process for us to go through. Threat, action, soothing. But if we don't soothe, then we're back into threat and action again. And it's a wonderful model for, you know, bombarding you with news that isn't always good and then offering you a solution of retail therapy, which may be soothing momentarily, but not. And so it goes on. You know, I think it's also about getting the percentage right. Because if that what's good and bad is 50/50 in your life, then I think you're... That's not a great percentage and I think 60/40, 70/30 I think the sweet spot is 80/20. And when you really on fire. When I'm really on fire it's 90/10 and in various points in my life I've been 100% and I've been such a pain in the ass that no one has ever wanted to, you know, let's not invite him out anyway. He's just going to tell us what we should eat and what we shouldn't eat and why this is so. There's just a balance there, isn't there? We're just going to finish up because we've used this word bio... You know what's introduced the term biohacking, but there is some stuff there that's... That we... You mentioned various things, of light and let's... Give us, apart from the obvious five... A couple of biohacking tips.

Dr Olivia Lesslar: [00:58:20] Okay. So this is one that's going to play into the sleep and the light. So it's a two-for-one, but after your restorative quality sleep that you've had, the first thing that you should be doing is exposing yourself and your eyes to light. Natural light within the first 30 minutes of waking from bed. This sets your circadian rhythm for the rest of the day and sets you up well. That and also the... you know, it's not just that circadian rhythm that you've set up. It's also that your eyes are getting information from the environment about what time of the year it is. Right? And what the weather's going to be like for the rest of the day and feeding into your pituitary gland and your pineal gland about the environment and the fact that you even can step out of your cave tells your Brain that you're safe, you know? You know, another biohacking thing that I described with my... To my patients from PNI perspective is that if you have anxiety, depression, things aren't

going very well for you. The kind of patient where they sit in front of you and they hold themselves. You know, PNI is a very bidirectional thing. You know, your psychology can affect your immunity. Your immunity can affect your psychology, for example. So, you have to if you can act like a predator, act like an apex animal. So you going out into wide open spaces. The beaches are a great place, but anywhere that you are outdoors and in the sun and you are holding your chest high and you're lifting your head high and you're opening up your arms. Why? Because you are not afraid of being seen by a tiger from two kilometres away. You are not afraid and you're going to move your head from side to side because just that act, that ability of your set, of your head to be able to look for risks in your peripheral vision is going to make your brain feel safe with the fact that you can even do that. Of course, you're going to be grounding whilst we do that. We've got our shoes off, on lawn grass, we're on sand, we're in the water something but just this act almost like saying to your body, "Hey, I am safe, I am whole, I'm happy, I'm healthy." You know, your brain needs to realise, "Oh, wow, okay," we're not in the cave because, and this is the third hack if you... There are four things, right? That your nervous, immune, and psychological systems are going to be worried about from an evolutionary perspective. And so you have to try and make sure that you don't inadvertently act like it, that you are in the middle of a winter, a famine, that there is a plague or that there is a predator. Right? The first thing that we do that may make our bodies think that any of these four things is happening is that we sit in our cave with artificial light, without company, without purpose and without joy. Sounds a little bit like an office situation, but, you know, there's something to that. So making sure that you're speaking to your subconscious if you are in a bit of a cave. Okay. We are doing this for work. We have purpose. We are going to be getting out into the sun as much as we can. You know, just reminding yourself that you are happy, healthy, whole. So trying to make sure that you don't inadvertently do things to make you know, to make your body think that you in one of these four things and you know, the... I don't remember what hack we're up to but one of the hacks.

Dr Ron Ehrlich: [01:02:09] It's three or four.

Dr Olivia Lesslar: [01:02:10] One of the hacks is, you know when you're eating foods, it's not just eating nutrient-dense foods because that's better for you. Yeah, of course, it is. But the reason why we're talking about joy and

doing things with joy and sometimes is nutrient-dense foods aren't necessarily nutrient-dense, but eating with joy is because you don't want your body to think that you're in famine or that you're in winter. Right? And yes, nutrient-dense foods tell your body that you are not in famine. You are in a time of plenty, you're in time of feast but joy has to come into it. Joy has to come into it. That's why we recommend patients. They're eating slowly, they're chewing. You know, they're not drinking too much water, so they don't dilute that gastric acid, blah, blah, blah. But the main thing is to eat in a parasympathetic state. That is why it's called rest and digest, because if you eat in a sympathetic state, i.e. on the run, when you're frustrated, when you're angry, or any of those sorts of things, your body's in no state to be breaking it down and to be absorbing things and to be metabolising the food that you're eating. So eat with joy. Even if it's not nutrient-dense. Eat with joy even if with nutrient-dense foods.

Dr Ron Ehrlich: [01:03:31] You mentioned something there also about putting your feet on the ground, which people may have missed. But I think that is kind of... That is quite important to us now.

Dr Olivia Lesslar: [01:03:41] Yeah. Grounding, grounding. You know, if you Google grounding inflammation and then you put in PubMed, PubMed, that's where is the world... One of the world repositories of studies and intellectual papers. It does pop up the fact that grounding, putting your bare feet bare anything onto actual ground can decrease inflammation. You know, and half the time when people are grounding, they're also taking time out and putting themselves in nature. So of course is going to be that additive layer cake effect. But this concept of grounding is, well, you know, we were talking about guardian sites before, skin being a big guardian site and specifically skin on hands, skin on feet, why? Because your feet were always meant to have been majority of the time in contact with the ground. Now we wear shoes all the time and those of us who wear heels, it's even worse. But anyway, when we were wearing shoes, those are sensory deprivation chambers. Your brain, to be able to calculate risk and protect you is constantly looking for information by sight, by sound, by smell, by taste, by touch. And that one thing that was meant to always pretty much be in contact with the ground, it can't feel anything. What do you think that does to your brain that's trying to calculate risk? It's going to make it a little

bit more twitchy, is going to make it a little bit more afraid. You know, the number of people with lower back pain is incredible and lower back pain apart from someone who's actually been well up to whatever it is, you know, fell, blah, blah, blah. Low back pain is partly your body's way to restrict movement. Why? Because the nerves that innervate the bottom of your feet exit the spine from your lower back. So if your brain doesn't know where your feet are. "Oh, my gosh, something's wrong with this animal. I can see the... I can see the sand, I can see the ground, I can feel the sun, I can smell the salt water. Why can't I feel the sand?" It's going to subconsciously, it's going to sort of pull you back a bit because it's trying to protect you. Not quite sure where you're going to, you know, where are you going to put your next step. So there is definitely something to be said about barefoot rehabilitation. And there are some amazing, barefoot podiatrists in Australia. You know, and I certainly recommend people definitely try out, you know, barefoot rehabilitation, getting their bare feet on the ground.

Dr Ron Ehrlich: [01:06:22] The other one you mentioned was cold and hot. You know why? Why are those? I mean, I know Wim Hof, you know, amazing. And I know Dr Louise Ehrlich and myself have been practising ice baths and I practice I have a cold shower every morning, which is now a bit challenging in the winter, but it's still happening. What's the purpose of that? What are... Why? Why would you do that?

Dr Olivia Lesslar: [01:06:47] So it's about resilience building, right? Because... Actually the number of reasons, but one of them is resilience building. If you're able to face quite a minor fear, if you think about it, it's just cold water and you can turn that tap to warm any time you want. But it's something that there's a bit of hesitation, too. And when you get past that little barrier and you've created a little bit of a win for yourself. It sets your brain up, your mind up for other challenges. What if you could do that? Well, you can. You can do anything. You can surmount anything. So that's part of it. The other thing is that heat shock response, right? The name was first given when it was discovered with heat. But the heat shock response is actually also brought on by cryotherapy or by cold therapy. And the heat shock response is part of the chaperone networks that we're talking about before cells that go into other cells and proteins that go into cells and do a

bit of autophagy housekeeping. And the third thing about cold exposure is that transient, transient receptor potentials TRP, your ion on channel that I'm I have a fondness for. I talk about transient receptor potentials of trips, also known to talk about trips quite a bit. One of the thing about trips is that they're quite promiscuous, so they do a number of things. They will react to PH, reactive chemicals, Osmo mechano sensation, but also temperature. So there are a fair few number of trips, about 28 or so, and they will cover the whole gambit of temperature. And there are many overlaps between the trips too, from noxious, cold and noxious heat and everything in between, because temperature was something that your body needed to know and understand to be able to calculate risk. There are some objective temperatures which are detrimental for us, you, the minus, whatever it is, degrees for extended periods of time, but you can retrain it. And when you retrain ion channels that are helping your brain calculate risk, it also helps increase resilience of your brain to threat perception. In other words, Wim Hof has mastered cold, right? So he can go to base camp in shorts. His trips...

Dr Ron Ehrlich: [01:09:10] Base camp of Mount Everest.

Dr Olivia Lesslar: [01:09:11] Oh, sorry.

Dr Ron Ehrlich: [01:09:11] Yeah, yeah, I know. I've seen the... I've seen it and it's quite a... It's incredible.

Dr Olivia Lesslar: [01:09:17] Right base camp of Mount Everest. But if we were to do it, I mean there is a large percentage of us who will actually die because those sorts of temperatures would be tripping our trips at those very low, noxious cold temperatures. And your brain will think you're dying. Right? And instigate all sorts of protective mechanisms which you just don't have the resilience for. The things are not going to go well for you. But the good thing about what Wim is doing is that he's showing us that we can retrain lots of different aspects to our body, in his case, not just psychological. He's not just thinking, I'm going to make it to base camp of Mount Everest and I'm going to do it. It. His mind has an effect on his nervous system, has effect on his immune system. And that's why when he gets there, he's still a happy, healthy, whole human being. Wonderful. So for

us, when we're doing alcohol exposures, for example, that's what you choose to do. You have to be doing it mindfully. Right? Throwing yourself into an ice bucket is a hormetic stress. But the word hormetic stress, you know, means you have these small stressors in the acute phase, which is not pleasant, but which in the longer term confers benefit. Those hormetic stress in the wrong patients is still a stress. So you need to make sure that you're ready for that hormetic stress, no matter how valuable it is or can be. Your mind has to be part of the story.

Dr Ron Ehrlich: [01:10:54] I think one of the most interesting and inspiring things I find about him, Wim Hof in the whole thing is in exactly what you're saying is what's possible. What's possible, and there's a range of things you can do which can change your Psychoneuroimmunology, which is the way we started this whole conversation. We've gone around and covered, you know, touched on some really great things today. So. Olivia, thank you so much for joining us today.

Dr Olivia Lesslar: [01:11:26] Thanks, Ron, really enjoyed being here.

Dr Ron Ehrlich: [01:11:28] Well, the mind and body are connected. What a surprise. Equally surprising when we learn that the mouth is also connected to the human body. But that's a whole other story that we've explored on other podcasts. Look, there was so much in this podcast, and of course, it's so interesting to hear the words biohacking and longevity being the buzzwords in modern medicine, which in my experience we've been talking about for a long time, biohacking being how to be healthier and longevity, trying to live as long as you can for as healthy as you can. And that's what this podcast is about. Have a look on our web page on Unstresshealth.com on my web page at [Dr Ron Ehrlich.com](http://DrRonEhrlich.com). I hope this find you well until next time and we will of course have links to Dr Olivia, Cingulum Health. Until next time, this is Dr Ron Ehrlich. Be well.

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