Introduction and Guest Background

– Hello everyone and welcome to the microbes and Mental health summit. I'm your host, Dr. Miles Nichols today with Peter Kassel. Peter Kassel is the co founder and CEO of healthy soul biologics and this is a really relevant company and product to the issue of microbes and the connection between microbes and mental health that we've been discussing on the summit.

So welcome Peter thank you so much for being here. – It's a real pleasure. I love the chance to be able to speak with you guys about this subject. – Now, tell me a little bit about your backstory.

How did you become interested in creating a device that helps with with with soles of the the feet and and making them uh killing off bacteria and microbes and helping with infections in that way.

– Absolutely. So about 10 years ago I was working with a partner of mine, we lived in New York, a business partner of mine and we didn't have an office at the time and he would have meetings, he was an older gentleman, so he had a nicer apartment and we would have business meetings in his apartment, He was diplomatically say he was germ conscious and we weren't gonna ask clients to take off their shoes. So I could tell that he was kind of bristling kind of, you know, clenching his jaw when people came into his apartment with their shoes on off of the streets of New York. So we started talking and it was this classic, you know, infomercial thing where we started thinking there's gotta be a better way and you know, we kind of kicked around this stuff and and you know, in between meetings and we came up with this idea of, of UBC being used to uh without any liquids without any chemicals clean the soles of shoes. And so my father who was retired had a history of entrepreneurship and taking products from sort of a zero to a one right?

Like fully creating something. And we were knocking the idea around and talking about, oh, you know, it could be made for homes and things like that. So around that time he went in for routine biopsy and contracted septicemia during the process and it was very nearly fatal. He was 73 at the time.

So, you know, was administered Dinko Misson was in the hospital and isolation chambers for days. It was very close to him passing and I sort of him you know, a numbers guy and I love researching and reading deal with my stress.

UV Shoe Sanitization Origin Story

I started looking into how did this happen? What was going on here? What was the mechanism why on earth during something that's so routine is he almost, you know, gonna gonna pass. And that's when I had sort of learned about hospital acquired infections, about infection rates, about cleaning processes and hospitals.

And I realized that the soles of the shoes are filthy. I had realized that, you know, there was a connection between, say the dust of my bookshelf and what was on the floor and that, you know, put together that whatever was on the floor was not the end of the life cycle for something on the floor. It's a single cell organism.

It's not like, you know, a piece of buttered toast. It's it's not sort of done. It kicks back up, it deposits it, colonize is on all kinds of surfaces.

That's when for us, the light bulb went off and we began to realize, you know, this real application. At around the same time we had gotten back from a third party lab the efficacy rate, our kill rates for the product and were shocked to see how efficacious we were. What are kill rates were for especially viruses and bacteria. And that's what really drove us down this line.

Okay. Infection control is a priority. It is costing the hospital sector billions of dollars. It's costing tens of thousands

of lives, hundreds of thousands of preventable infections.

And we actually have something that could easily be slotted into any prevention protocol. That could really truly be useful. And so we just kind of really began plowing ahead with that and kind of right here now.

– Yeah, that's amazing. And for the audience, this UV light has been utilized as technology for quite a long time and yet and and sometimes it's utilized in water filters and sometimes advised in air filters but it's something that it's very simple. It's very easy it's very safe and it does have very high kill rates for bacteria. It's light that's amazing to me that light does that isn't that amazing too? – Totally nuts.

And I came from a position that wasn't particularly scientific from actual from an education standpoint thankfully I have I have not camera thankfully I have a bit of a of an engineering ability but it wasn't what I was trained for and it was crazy to learn.

You know it blew my mind. It's the oldest green technology I believe it was discovered in the late 18 hundreds for water filtration in Paris. And you know it's it's it's amazing how it works essentially the light is at a wave like that's so powerful that it disrupts the D.

N. A. Of the single cell organism. So it penetrates the wall and it just essentially either renders it you know sort of unable to reproduce or actually kills it.

And there's not the same situation of resistance that happens over time. Like with chemicals you know as you know with chemicals whatever's left of those bacteria was resistant potentially to the chemical those then reproduced.

So all of a sudden then all that's left is those that was resistant to that by you know antibacterial or that chemical solvent and and the other the other portion of this that was so surprising to me is that you know when we started looking infection control was a market that was entirely entirely controlled by solvent makers?

The one sort of part of the process that is not a renewable resource. We're the only big players, right? three M. Clorox. These guys who their chemical solvents won't work one day and yet they're the owners of the space which to me seemed like in a massive opportunity. And also a place that needed to be innovated on and changed. – Yeah. And living I live in Colorado and I live in the mountains a bit where I have a well and I was fascinated by the fact that there are these UV light that can help with bacteria. And I in fact have a UV on a filter for my drinking water because I'm on a well. And I was surprise that this isn't more commonplace that people aren't using this technology as much in the standard protocol is to shock with bleach with with with some kind of a harsh chemical the bacteria instead of just killing it right as the water passes through.

And so that's really interesting to me and I'm really surprised that I've never seen something like this technology being applied to one area that seems so obvious to me the bottoms of feet. This is really fascinating that this isn't just a more common like how do we clean shoes? How do we clean the bottoms of feet?

How much of the microbial spread in a hospital setting or even in a home setting is due to the bottoms of the feet. And so tell us how does addressing pathogens at the soles of shoes make a difference.

– So you know we we are a small company so large scale.

How UV-C Works and Infection Control

Our Tcs are random. Sorry? R. C. T. S. Have been you know difficult to do but we have actually recently done one a systematic review that's been accepted to um agent actually.

The American journal of infection control about how the cycle actually works. There have been some studies a lot of studies of the disparate parts. And so we've begun to really nail down on the actual sort of epidemiology epidemiological steps of how each portion of transfer works.

But for an example we had a a facility that was using the product you know just sort of testing it for themselves. So it wasn't really with real full protocols but they were keeping track of how often people were using it.

And actually had a double blind. A room with um a healthy soul that had no active UV. C. Light in a room with healthy soul which did have active UBC light. And they found that with a 70% compliance rate.

They found a 30% reduction in the number of sport the number of colonies and the density of colonies of c diff on a one ft one square foot portion of the wall that was about six ft up but also in the clean air input. So in the hospital room there's event on the bottom of the floor that pulls the air out, goes through, as you mentioned an H back system with UBC to clear the air and then gets put in at the top of the room through a clean air input. They found that c diff spores, fecal spores were present at the clean air input of the room.

There's a couple of reasons why this is fascinating is one. We have not been able to find a lot of studies that have pulled c diff spores out of the air. Right?

So for a long time we figured, okay, these aren't moving this way. But if you actually test and colonized areas of a hospital room, you'll find in areas where no feces has been present.

Which means that then there is some air currents that are causing spreads and colonies to reproduce. And just by dealing with this one point, this one area of introduction to the room of somebody coming into the room essentially we cut off a line of transmission that was essential enough to these these colonies of c diff to decrease them by almost 30%.

So you know, we're always of course raising capital and looking for ways to continue to push this because where some of the champions in the space of like shoes are an issue environmental contamination is an issue. But we found anecdotal evidence through patients through customers of really surprising results from using this.

Another one was an L. Tak in Louisiana that at any point David outbreak had 70 to 80 patients in their covid ward. So all other wards had shut. They were the only ones working.

They had purchased our unit in January of 2020 when they got a call from fema. And during the Covid outbreak they did not record a single transmission from patient to care provider of the covid virus. And they actually attribute a lot of that to the fact that they were religiously using this process along with a few others that they had adopted at the beginning of the pandemic.

– Well there are several points I'd love to touch on there. One is that the for the audience, if you don't know that clostridium difficile is a toxic, it's a it's a bacteria that spreads often it can cause significant diarrhea can happen post antibiotic use. So for people in house settings especially who receive antibiotics, we sometimes see that they contract a clostridium difficile infection and have horrible diarrhea and it can be a big problem and a big issue and it can become very antibiotic resistance and it can resist multiple treatments.

And so this is one of the big Struggles that hospitals deal with is how do we control for this infection. So that's amazing one that there was a 30% reduction in that, the sport count and to that there's this spread and that the sports were found in different areas and that's another thing that amazes people, I treat a lot of mold toxin illness in the clinic and people are amazed by the fact that that mold spreads through the air, the spores are in the air and people breathe them in.

And then the mycotoxins, which are really, really tiny, can get through the lung membrane into the bloodstream and cause chronic inflammation in the body. And that's really amazing to people to understand that. And there's been a big public health effort and with mold, it can live in the walls and it's water damage.

You have to remove the materials and replace them of course and with some other infections, the spread more is on hand and feet and and and the public health efforts around wash and these have been around a long, long time of course. And and I think the awareness is growing a little more.

Hospital Transmission and Shoe Reservoirs

Okay, you know, if you're touching your face, what are you, what are you transmitting there when you're touching surfaces and touching your face And yet there's not a ton of emphasis on feet and the soles of feet and shoes and spread that way. And it, there are some cultures that do religiously take shoes off when you come in and will not wear shoes inside or there are inside shoes that are, I remember growing up, we had a Japanese exchange student come and the Japanese exchange student, she had her, her her shoes that were only indoor shoes that you would wear and always take the outdoor shoes off. And I really liked that and I adopted that as a principle myself. So I'm curious why why address this reservoir in the modern day? We're not talking about tradition here necessarily, although there may be reasons for tradition, but why in the modern day is this actually relevant? Scientifically speaking.

– I do think this is funny. My wife was actually born and raised in Russia and I have my home crocs. My key at home is the term the Russian term. So I'm actually wearing my home shoes while at the office.

You know, my son has them and everything. But you know, one of the things you had mentioned was hand to hand contact. And you know, we really still even even addressing this, this reservoir of pathogens, we still believe that actually hand contact is one of the most sort of important, right? Because it's like hands are coming into contact with wounds with dressing your, you know, you use your hands with any kind of administration of treatment. And the problem that that we saw was that when these things, you know the process of sort of this, right? So you're a nurse that's going around on your rounds, You're stepping into each and every room, right?

There's the irony of a medical facility in which we bring everybody into the same space. We bring the people who are the most infectious, into the same buildings that people who are the most immuno compromised. Okay. And so uh a nurse will be treating people who might, as you said have a c diff clostridium clostridium difficile infection.

Not yet. No, They treat them right? You know, possibly there was some sort of shedding onto the floor of some, you know, bacteria or viruses. They then move into another room.

They've walked down the halls and left traces of this bacteria on every step they've taken. They then walk into the room, they leave traces of this bacteria everywhere.

They've every every step they've taken. And then they also with every step create a invisible cloud of these single cell organisms in dust of up 4-6 ft.

Well that doesn't just then deposit straight on the floor that then deposits on the bed on the bed rail, on the curtain on the counter any of the medical equipment that is sitting out ready for administration of this treatment to the patient.

Then even if they wash their hands and real or touch the bedsheet or touch this medical equipment, there's a chance that they may have re inoculated their hands before then administering treatment to the patient.

And that's the point that we think is so concerning is that there is essentially this trojan horse of reservoir that's coming in completely unattended, right? Like the booties that are born in hospitals.

Sometimes those are meant to only prevent soiling of shoes during administration. Right? So you wear those so that if somebody were to have some sort of problem of you know bio burden then falling onto your shoe like blood or other kinds of bodily fluids just take that off. The shoes aren't ruined.

Right? There's been this idea that like oh we wear those and now we're in a safe facility and that's not really quite the case. And so where we have the concerns is kind of that as I mentioned there are these invisible colonies of you know pretty serious density of these viruses and bacteria that cause massive problems with the facilities, Mersa CDF others. And you know I mean this kind of essentially what we've done with a lot of our buildings has created this problem of hermetically sealing spaces. They don't get fresh air, they don't get fresh sunlight, they don't get water moving through them instead there's this just massive collection. And I mean you see these

problems of people living in spaces as you mentioned that have all kinds of fungal spores.

You know we see issues right now of realizing that that you know we may be contaminating the air of the spaces that were in through introduction of all kinds of chemicals, cleaning solvents, whatever. And so we just had realized and seen that there's a real problem that like one of the filthiest yet most portable items within the facility are completely unattended are completely unaccounted for and that is causing problems that facilities might not be aware of or directly addressing.

– Yeah. And I really want to emphasize that in the microbes and mental health domain, we know that some viral infections can be a trigger for brain auto immunity. We know that certain viral infections that can become chronic can impact brain function and neurologic function.

So not only is it acute diseases that can transmit this way and cause things like clostridium difficile, which is diarrhea, it's actually also chronic illness that can stick with a person for years and years and lead to auto immunity and lead to brain dysfunction lead to mental health issues. We see these chronic infections being a significant role. And if we can, of course we need to bolster immunity, we to help to increase the resiliency in the face of organisms, we're never going to be free of exposure to organisms.

And in fact, if we go too sterile too much of the time, it's good to get out in the dirt and play, it's good to have a child especially have exposure to different organisms as the immune system is evolving.

But when we come to adulthood or even later on with immuno compromised, It becomes really, really important that we minimize exposure and that's where this is so important and especially hospital settings and traditional cultures do it in homes naturally and probably saw some impact, some health impact and intuited and now we have science to show part of why that might be in terms of the spread of viral infections as well as bacterial infections.

So tell us tell us a little about how is this product. So this is a product, this is a a product that that and and I've I've gotten one now and where you can stand on this pad where the UV light is under the sole of the feet and by standing it triggers it to turn on and in turning on it that UV light kills the pathogens at the bottom of the feet.

Which you already shared a little bit about some of the research and the data. So how is this product best deployed and what types of results have you seen?

– So we we definitely have focused mainly right now at least in terms of our market on medical facilities and controlled facilities. Right? Hi high trafficked important sort of sensitive areas.

Broader Health Impacts and Use Cases

We, you know, UBC for now is to be used really just it's not used on the on the skin. So we don't have really a lot of, you know, we don't have many sort of you know medical treatment uses for the product and silly meant to control transfer in, you know, as I said sort of controlled serious circumstances where, you know, people are wearing footwear between all kinds of situations. The way that it works is, and you had mentioned, it was surprising enough to see a lot of UBC technology.

UBC is both incredibly simple and also very difficult to work with. So like its efficacy drops incredibly quickly over very short periods of distance.

So like it is an extremely high powered frequency light frequency, but once you're about a foot or two ft away that power is completely dissipated. Right short waves don't move as far as as, you know, long waves like UV A and UV B.

So, you know, one of the problems also is UBC does not pass through glass and plastic. So if you end up taking a look at our product, you'll see that really it's a steel plate with these, you know, bumps and ridges where the footprints are.

And what that does is it actually holds your foot slightly off of the surface. And that allows for reflection and refraction between the lamp and your shoe.

So even though the holes that are, you know, kind of the the aperture points for the light to pass through are about 50-60% of the shoe sole, we actually get exposure of UVC light to 97% of the shoe.

And that actually works well for a couple of reasons you had mentioned, You know human beings should not be exposed to permanently hermetic situations which we 100% agree with. You know our son is is three years old and has put many things in his mouth. But what we're kind of looking at is that there is as I sort of mentioned this problem of you know these spaces that were in have been sealed to do the opposite. They're actually not hermetic instead they're perfect situations for the growth of pathogens that cause all kinds of problems both acute and chronic as you mentioned. You know there's not even a lot of research like we see research in terms of how microbes based upon what we eat cause decreased focus, decreased ability sort of activity, all of that kind of stuff.

Lethargy. I you know I would not be surprised if evidence comes out. That's sort of the way in which a lot of our spaces are contaminated or have large you know bacterial presence could also be causing that kind of sort of knock down effect. An example of a place where our product has been used outside of hospital settings. Actually with the Los Angeles Police Department they had in 2019 A typhus and typhoid outbreak within their facility. So essentially dark ages pathogens were in their precincts and they purchased 40 units that were placed at precincts all throughout the city of Los Angeles so that when somebody comes off of the beat, they stand on the unit, they move on.

That's actually had great effects for them. I mean prior to purchasing our unit a associate of the Los Angeles Police Department that actually stubbed his toe against the desk which cut a shoe, created a cut on his foot. And the type of typhoid meant that he actually had to have his leg amputated, which had sort of knocked on this whole process of them dealing with this other situations in which our product has been adopted is actually a top confectioner within the well actually a top worldwide confection producer of sweets and other kinds of treats uses our product in A. Q. A.

You know, quality assurance lab. So everybody stands on the unit before entering Another. Really exciting one was actually the National Institute of Health purchased a unit, one unit of ours and actually tested its efficacy internally for six months. And you know, they clearly have some of the best researchers in the world.

They tested it for six months. Came back and purchased five more. And so now it is government protocol to stand on the healthy soul before entering what's called fredericks labs, fredericks labs is all safety and safety assessment and efficacy assessment for FDA testing of cancer AIDS and vaccine medications.

One of the reasons they did this in this hospital's two is because they had all these protocols and yet they were beginning to get false positives. One of the reasons why was that? For some reason there were colonies and deposits of single cell organisms on the walls that would then shed down into the test subjects in the Petri dishes. And so they knew that this was a problem.

And they've been trying to find ways of limiting the introduction of pathogens into space. And this is this was occurring for them even with the current top protocols of anti chambers and clean rooms.

So, you know, besides just the great examples of the tax systems, some hospitals that have adopted it, 100 and five or a network of long term living facilities purchased 100 and five for each one of their buildings so that when anybody is doing a delivery or visiting a loved one, they stand on the unit when entering into the facility. So there's a lot of great situations that are both acute health related or science related and even food related in which just addressing transmission of pathogens from Point A to point B.

And allowing like you said, washing your hands as a way to just, you know, just cut the line of transmission from what you were dealing with before. We're not saying it has to be totally sterile. It's just that maybe we're bringing things around as I said, like a trojan horse that we're unaware of and that are causing unknown complications or known complications as well.

– And this brings me to a bigger picture issue, which is that we've been over using antibiotics in soaps, we've been overused and drugs are becoming resistant to the antibiotic use inside of soaps and we're utilizing harsh chemical cleaners that are toxic to people. And many of the chemicals do not get fully researched for safety before they are used in the environment.

If it can kill bacteria and viruses, it can get added to a product without having great safety data for human reading it in and and what that it does for the human body.

And your point about the spaces and the way that buildings are built ecologically has improved greatly in terms of the ability to have insulation and to isolate the indoors from the outdoors. But that does create this lack of what in nature there's continuous airflow, there's continuous ability to dry up water.

We know actually that some of the top indoor air professionals that look at mold and fungal growth in buildings find and even bacterial growth that produce endo toxins that people can breathe endo toxin into and get endo toxin exposure from their environment from their building from bacterial growth. That due to water.

And this issue is that what they find is that the older constructions, the ones from before the insulation and the all the moldings were perfect and the airflow was not there actually, the older buildings bright up moisture better and because that little bit of airflow, that little actually leaky building in the sense of airflow And not as good from an environmental ecological perspective of heating and cooling actually also does improve the actual organisms that grow there. And we are creating this very strange in an unnatural environment. And there are ways to mitigate that.

And indoor air professionals are starting to add things like whole house fans and other ways to keep air moving and to have some of the things that are happening out in nature.

But I remember going to Costa Rica where it was super humid, lots of organisms growing everywhere. And I remember going out to this retreat center and thing in this retreat center which was open air.

It's for the bugs, but it was completely open air and there was not of any of the kinds of toxic and growing in molds in this very damp environment because there was continuous airflow. So I do wonder about what we are doing in our internal environment as we're developing ecologically.

We it's important. We don't forget about the things like overuse of antibiotics both internally and in soaps and products, the exposure to toxic chemical solvents and harboring of organisms that we hadn't, we haven't adapted for.

We haven't adapted for these indoor growing toxic molds that grow in these really isolated in where there's no air floor exchange whatsoever.

Future Applications and Scaling the Technology

And this is causing some real problems. So this product, it's like it, it may be helpful in that. So tell us about the future of this technology, where is this going? What might this be able to be applied to in the future? – I mean in terms of applications, you know personally, Well personally I I live and breathe these products and have for 10 years and you know I see so many situations in which I wish I could use it, right? Especially as the pandemic had created extra concerns about you know, air quality, air movement, people to people contact.

For some examples, we have had conversations with airlines about placing these at the tramway before entering onto an airplane. A great example of of a good use. I mean we spent, you know my my wife and I spent a good period of time with our son when he was very very sort of immuno compromised in the hospital and you know, I wish we could have had it then.

You know I kept a separate pair of shoes in the hotel room or in the hospital room. So I could change my shoes when I entered the space. Um you know there is an opportunity for re entering something like a home market or a slightly less version right now with the industrial unit about $5600.

But part of that is because there is a need for the product to be able to really address, you know tens of feet right away right? So that there there it's, it's sort of like the difference between buying a stove for your home and buying a stove for a restaurant, right? Or or an espresso machine for a coffee shop, being as much as a Ferrari while you can buy one for $100 at home.

So that's one thing that we really want to do, you know, and, and currently like really our process right now and what we're doing as you mentioned with antibiotics is, you know, I have a concern and this has been, this was like a catchphrase of Attorney, Attorney General, surgeon general a couple of administrations ago of antibiotics are not a renewable resource.

They're not, as you mentioned, you know, there's problems that it's just, you know, there's, there's all of these reasons and they are an extreme backbone and cornerstone currently of our treatment method, There's extreme over over prescription of antibiotics during Covid because if you had Covid infection, you would die of pneumonia, right. That was most likely what would kill you.

And that's treatable with antibiotics. And so every patient who came into a hospital was immediately put on a antibiotic treatment regiment. And that was extreme over over prescription. And that will speed up the point of time that will come in which most of our antibiotics don't work.

And so what we are majorly focused on is really pushing for a recognition of the fact that there are certain aspects of infection control protocols in all kinds of spaces that have to be changed. We can't just mop and vacuum before and consider consider the job done that's just not gonna work.

And uh so some of the things that we're doing right now is as I mentioned the systematic review. We're working with some of the top professionals to speak with groups like the C. D. C.

To really begin to examine this as a necessity in certain kinds of high pressure environments. And as well we have decided to raise money using sort of a crowdfunding method which is sort of this whole sec US government sanctioned thing which is like an I.

P. O. But we're not sold on on like a stock exchange and we can essentially sell shares of our company to anybody. And one of the reasons we did this instead of continuing to lean on the idea of sort of med tech investors and things like that is you know this product grew out of my personal experience, my father's personal experience and realizing that there's this massive open, you know sort of risk within medical facilities.

And you know we learned about this way of raising money and I sort of thought it was amazing because it's like it gives people care providers and patients the opportunity to create the kind of care medical care in the world that they want to see that it gives them the opportunity of saying, okay, this is the type of technology that I would like when I'm in a hospital that I wish I was there when my grandmother's hip replacement became effective.

That you know, there's all kinds of these stories everywhere. And you know, I think that the opportunity of saying to patients and care providers this medical outcomes, it will make spaces safer.

You will benefit from the application of this. And if you come with us and our partners, you will benefit on all sides, right? We all get to as a society lift up our opportunities here. And so, you know, where we see this product being is hopefully just about everywhere. You know, we've seen that washing our hands is good no matter what?

If you wash your hands, the bacteria that's on your phone by association decreases. You know, like there's all of these examples and I think, you know, as we talk about mental health as well and microbes, you know, there is energy that goes into dealing with single ISMs and keeping our bodies propped up if we continue to live in spaces that are highly polluted whether through chemicals or through single cell organisms and bacteria and fungus, there is a reduction in the quality of life And our, you know, mental state, that's just the reality, right? We we are finite beings with a finite amount of energy and a finite amount of tools and we can't just sort of rest on our laurels and so you know, and pretend that this isn't an issue.

So where I see this going is I would love to really be an advocate for the science that we need to address infection prevention protocols and general cleaning protocols to be preventative and not acute. And that's that's sort of been a huge part of this as a learning tool. I mean it was never, I've never grown up as a medical professional, right?

Like I didn't know anything about this and we fell into it and and we now believe from our company's perspective that it took somebody from outside of the medical space to say, hold on a second, there are actually some leaky holes in the ship.

And how about we all work together to plug those up. – Peter and I have real concerns. I have real concerns about the costs for treatment of infection. And there's a concept called Alice static load.

And this concept, this concept is that we can handle so much the body is resilient. We are meant to be exposed to many different organisms, some of which are pathogenic as our immune system evolved and intended to be able to generate antibodies against these, intended to be able to regulate its internal functions quite well in the presence of of some of the things that are naturally going around. But we are creating unnatural things that are being harbored in the way that we're creating spaces and hospital settings and homes and the way we're building buildings are creating these unnatural exposures that are creating this Alice static load. And you compound inflammatory diet together with sedentary lifestyle together with substance abuse like things like alcohol that – Population overgrowth.

Yeah you're meant to be in groups of 20 people up to you know 50 max and now you live in an apartment building with potentially 600 people you know. – Yeah and you compound all these together and there's this and all the toxins the chemical use the salt you add these together and we're seeing this load of well the human organism is resilient and the natural state of that organism is to heal but with so much load of toxins of inflammatory inputs the mismatch between how our genetics evolved and what the environment is like today with XP closures to an incredible number of different viral bacterial fungal infections in the world today. And while there are good antibiotics there aren't great antiviral medications they don't work that well.

And so to be able to prevent some of the exposure can reduce that Alice static load can help reduce the burden and that together with some good dietary principles and some good work on the gut microbiome and some good work biotic chronic infections and probiotics and we can really I think make a big difference in the dent in the chronic disease epidemic with the C. D. C. Things. Dixon 10 U. S.

Adults have at least one chronic illness four and 10 have two or more. So I think this is more than just the acute in fact you and the Alice static load.

And I do believe that being able to take whatever preventive approaches we can and we need a lot of them. This isn't the one the only solution but this is one that can play a role in a bigger context for how we can prevent exposures, reduce al a static load, reduce the chronic disease burden and help with acute disease all at the same time. – Absolutely it's you know we've done the same we've kept spaces clean the same way for decades because we've had the help of antibiotics and we've had good luck.

And I think that you know humans have the ability. I mean straight up our bodies work this way. It's worked so well go and deal with things that don't work. And I think it's now getting to the point where it's not working as well as it used to.

How to Get Involved and Closing Remarks

And we're staring down the barrel of the gun of it getting much worse and you know this is one of many technologies and protocols that I think should be adopted. You know because it just it will help as the world and as our situation changes.

– Well I know people are gonna want to know how they can get involved how they can help how they can advocate for ecology, being in their local hospital or in an area that would be meaningful to them. So tell people, how can they find out more, how can they get involved? I know you mentioned crowdfunding and what other ways can

people get involved here?

– Well, so I would like, I mean, I would like to draw anybody's attention to our linkedin account because we're gonna be, you know, we we've been working with some really exciting clinicians and researchers and we're going to start heavily at, you know, advocating on a public scale, now about situations in which risks are occurring, situations in which people are doing the best that they can to do, address the situation, all kinds of sort of bits like that.

I think that that would be a great sort of central point for where we choose next to, you know, continue our our education or outreach. I think that that's a really valuable space and it's one that is professional and we want to be reaching, you know, medical professionals as well as everyday people.

And as well, we have our website which has information collection of studies, there's a link at the top for crowdfunding investment, as well as an opportunity to join us in the process. So, healthy soul and that's healthysole.com is where you can find our website, our linkedin is healthy soul as well and invest to healthysole.com is where are sort of, you know, more financial aspects of that are as well where people can see, you know, some versions of you know, customers advocating for the products and things like that. So I think those would be the best places to find us for the time being. – Fantastic. And I love that the model is some crowd crowd funding models are, are just, you know, giving and then maybe you get something one time, but it sounds like this is actually you're investing in the company and you're becoming Yeah, yeah, that's amazing. – You get stuck.

And you know, we're fully were patented in many countries sold internationally. We have, you know, product and inventory. So we're fully like running and you know, we understand it's a small company that, that somebody else with a very large distribution arm, a very large manufacturing arm would be the, the stewards of the product to worldwide sort of adoption.

So right now, what we're really just trying to do is scale sales and bang the drum, do the research, get the, you know, the most important minds at least looking at this because it's incredibly easy. You literally take it out of the box, plug it in and that's it. You know, you've immediately augmented your infection prevention protocol. There doesn't need to be any massive installations, none of that.

And so it's, it seems to us like a no brainer of like, okay, you've got a, you know, 16 inch by 16 inch square. Great. Now you've augmented your entire procedure.

You know, and and we worked really hard. I mean the product takes eight seconds to use, which is a big deal. You know, you get like a 99.99 I believe of Mersa, kill rate of Mersa around there up to that in just eight seconds and you know, that's a serious, serious infectious pathogen right there.

So, you know, we are working hard on advocating for the problem, advocating for patients, advocating for nurses who when infections occur in a facility there in the firing lines of that. You know, they're concerned about their safety, their health, their family's safety and health.

So that's what like a huge portion This is going to go towards education, education, education, because there is evidence that this is a problem and it is incumbent on us to teach people about how addressing this problem could improve health and improve medical outcomes. – Well, this is fantastic.

This is what we need is preventive approaches that are looking upstream and reducing the burden on antibiotics on solvent chemical cleaners. And so I really appreciate your mission and I appreciate what you're doing.

Please do check out healthy soul. Thank you so much for joining Peter. This is Dr. Miles microbes and mental Health summit and take good care, everyone.