## Introduction and Guest Backgrounds

Hi everyone. I'm Doctor Sanjeev Goyal, and you're listening to the advanced Anti-Aging and Technology Summit. And today I have Mark, Saint George and Dimitri political doctor Dimitri political who are going to talk about this amazing new device and by electricity that they've worked that they're working on a company called Accutane.

Mark and Dimitri, welcome. Hey, thank you so much for having us. So maybe let's just get right into it. And we have a lot to talk about today, so I'd love to hear about how you both came together.

I know you have quite different backgrounds, to work on this remarkable technology. Yeah. Now, it's actually kind of a it's a really interesting story.

My field has always been kind of biotechnology, and Dimitri has always been medical technology. And this, this project really represents his whole life's work, you know?

And, you know, I wish we had enough time to kind of go through, you know, everything back from starting in the, in the late 90s, through his, his medical research and his PhD.

But our worlds kind of, crossed paths. I think it was in 2004. And, you know, I was just at that point just more of a curious, you know, seeker of of new, new gadgets and technologies and, but this was still very early stages.

You know, Dmitri had just kind of immigrated to Canada, was working, his company was incubated at the the Mars Center in Toronto. And, so I really more, more or less got a glimpse of who he was and kind of the general field he was working in.

But then fast forward ten years, I get this random call, from Dimitri, and he's so excited. It was like I finally finished my MVP. It's like, well, okay, well, what is it?

What does that really mean? And so, I'm based in Halifax. Dimitri is based in Toronto. And, so we agreed to say, look, you know, I really want to learn more.

So he flew to Halifax and, proceeded to give me, a demonstration of the the technology. Now, this is, of course, this was something totally new to me.

I mean, it's totally new to the world. And my first kind of real, purview into this whole world of bio electricity. And, we did this in kind of such a unique way.

It's like instead of him explaining everything that the technology does, he says, look, I'm just going to do a demonstration and here's the thing is, I was, I recently recovered from from meningitis.

So, thankfully, you know, generally a successful recovery, but I was suffering from really bad headaches. You know, probably, like it was a huge impact on my quality of life.

## Dmitri's Early Scientific Journey

Will say. He hooks me up to the, you know, all the various electrodes, runs the program and says, okay, well, based on the data, this is what I see. You were having terrible issues with your headaches and, you know, getting into some really, really interesting details without ever kind of giving me what's going on in my life.

So that's that's such an interesting way to kind of hook someone into, a new idea. So that really was the impetus for how, we look to kind of join forces, this brilliant technology that was looking for a way to kind of enter, the world,

you know, and, clearly I knew that this had a lot of potential.

But it took still, the next couple of years, us working together to really craft out what is the real vision, you know, how does this, you know, take, it's, it's path into the, you know, both clinical and we'll see consumer side of, of, wellness and, you know, high performance and clinical care, etc., all the things that you deal with on a regular basis.

So, Demetrius, you've been a physician now for, I think, 20 plus years. Is that correct? Yes. I finished my medical school, medical university in 1990 and Siberia and, it was, amazing, connection with Mark, when I moved here.

But before that, it was some miracles happened in my life, when I just wasn't, like, in the school for beginning of a biologist. You know, like just a school, just for, like, I was, I was a medical microorganism.

And, working together, how you can look like, moba of, floating in the water, how you look in clear water. And, I was, was really addict for biology. And also I was really, looking for any communication between biology and yet.

And when I finished school and, I got proposal to work with 17 year old in the system in the histology. That was amazing because, I would say I was choosing the, the tool for the proposal because I was one year my job was making preparation of dead bug, making insect like, some kind of, like, solution and then cut and then make it every cells visible for scientist.

And, one year of work in that laboratory gives me huge, huge. I was able to recognize in itself a budget. And in that my time in my career, it's it's like, connection in, those microorganisms.

So in the nature, how they communicate. I told. Okay, but it's a, huge gauge of, microorganisms. They have to be connected together. And I ask some, scientist, about, like, say of about structure around.

I was more curious about around structure how they communicate and doctor, professor, show me some small kind. Of course it's not new. It's not a they told.

Probably you will discover it going to work, but it's some type of channels are unique channels. They, make it communication, not action. And, organs can communicate and cells can communicate because it was an amazing teacher for me.

It's what system can make happen the videos. And when I finished one year work, I said, okay, I have to go to see how communication work. And then they was working.

I was I played in the military factory to work in the communication department to see how communication work. And after that they said, I have to go to medical school and integrate this technology in the future.

It was in my head that I remember and I will study. I was kind of stubborn to, make it kind of additional work to see how the body of work in the body react, and but I spent time in the hospital and talk to people how they feel, how they eat, what they do and how they communicate, how they feel about themselves, because that when is much more true than, because doctors discovered, like, language.

It's quite different because it's navigate them to make it right decision. But patient nature, kind of like expression. So I was a student. I was like at night time working and volunteering.

I was able to free and not play a, it means like, get free information. Don't pay anybody the the the tell me so all picture I want to I want to get more into that right into the actual technology.

So so basically what I'm saying to the layperson not is that know that's one is why for me, when I finished medical university, I decided to work in electrophysiology field because that one is my way, because I have to think, okay, people, I can figure it out by case and how people communicate to each other, and then we can make it better dealing with illnesses that since 1990, I was making it, the different researchers in their physiology field.

I would study acupuncture, electro puncture, and, I would study botanical ingredients because my kind of, request for people before we speak, I was like, they feel it's need to be help them.

So it's make it like cool structure because without that, without interesting biological communication, I wouldn't make it this type of, link in electrophysiology because it's 1990.

Nobody was talking about that much. So but, I was thinking, like, if I found a way to form cow organs, communicate how cells communicate. It's like, it's a I will make it.

People communicate together and make them healthier. It's a it just wants to make it. And I finish with medical, you know, medical school after medical university and opened my, medical, wellness center in Russia.

When is, I train another doctors and we start to do research. We start to, take person by person and make it to any type of electrophysiology measurement to form organs, communicate based on our experience, and put experience from communication to people and make it confirmation through the big diagnostic tools.

Because since 1990, as I finished medical university, I also work in parallel in the biggest diagnostic center in the my region.

## How the Bioelectric Device Works

I had a different type of tools like, available 20 47X ray, MRI, whatever, because, my curiosity was supported by government. They let me to use any type of like devices, anything to just like of what I'm going to ask a question just because I want to get right down to it and, and help the viewers understand, because it is it is a it's completely new mindset we have to think about.

So what you're saying is that you found a way to for cells to communicate using their bioelectric using electricity in effect. Right. Electrical impulses. Is that. Yes. Yes.

Like you're saying that you and you developed a device which is over many years that you've been working on in Russia, and then you come back, come to you came to Canada, I guess, and then you met with Mark, and now you've developed, developed a, a device that's I think, yes, yes, yes.

The kind of, trials is. Of course, it. Yes. Of course. I collect data database and I was focused on communication. So those two there wasn't the just this one and that was focus.

And we start to make it confirmation. Me and, group of doctors with each, and we start to make it confirmation between like, let's see if you found somebody in the audience.

So what is it? And if we make it another measurement to form, another audience reaction. So how they communicate because we took, a like, in my, kind of like, but just saying I was trying to explain, for, like myself and for everybody who, my future was involve, in the, this type of research.

I mean, Mark and, our team. So, but you have working as a galore that, like, a nervous system. When you look at the close of the nervous system, the looking, conservation energy give me is like, if you have like one area, you see that another area can be called that.

How how is our budget? They give kind of information and, the, the idea energy to support organ storage because that one, it's the health, me to explain about like how much you're able to be able to.

Then maybe what we should do is just go ahead and I think go ahead. Mark, everyone jump in. Yeah. I think, you know, it's, you know, with so much background in kind of the deeper technologies, I think we need to kind of fast forward to kind of where are we today?

What do we have and how are we looking to kind of reshape this kind of field of, of, of clinical care? And of course,

you know, an interesting aspect of what we're doing is, introducing something into the, the field of consumer wellness.

And so, so the technology today is Dimitri is explaining, you know, is based on this novel set of, of, of, electric biomarkers. Right. And so we think of the body's primary bioinformatics being electrochemical impulses.

So we have we also have look we have genetics as and epigenetics and proteomics as informatics systems about our body. But think of it and as Dimitri is saying, you know, how do cells communicate with each other?

How do organs communicate with, with each other, including the central nervous system, its electrochemical impulses? And these are not just flowing only through nerves, but through ion channels.

And so over many, many years, we were able to develop a device that we can use, kind of call it a scanning device that, you know, I think when you when you experience the technology, you think, oh, it it's it's set up a lot like an ECG.

If someone was getting electrocardiogram or in a gram, except we're not measuring specifically the heart or the brain. This is the first time, as far as we know, using an electrophysiological approach, we can measure every organ, every gland in the body and how specifically they communicate to each other.

So the, the the nice thing about this is that those kind of capabilities only really exist in imaging devices, right, that are taking, you know, images, including functional images of the body.

But what we're actually is, is being able to measure the information that is traveling through the body. So think of it as a computer language, you know, the body has its own set of language.

And our job was really to how do we decode, how do we measure it and how do we decode that? And then, you know, of course, creating these mass amounts of data is the interpretation side.

So the question was is there any relevance to the data? Yes. We were able to show it's very reproducible and it has clinical, implications. And so the technology that we're able to introduce into the marketplace eventually will be introduced.

From a clinical perspective, the ability to do a real time, analytics of the entire physiological system, right, with all these, you know, very insightful indicators that help us understand, you know, not just the myopic view sometimes of how, medicine will kind of proceed and say, well, if I'm a cardiologist, I may just be focus on just the cardiovascular function.

Right. And so the the thing is, when sometimes symptoms show up in a particular region of the body, we have this instinct to say, oh, well, I'm going to treat that, you know, but if you had the ability to map the entire physiology, and if you think in terms of a functional medicine approach right now, you can start to look intelligently with, with the help of computers and artificial intelligence, say, okay, well, here's where it's expressing more as symptoms versus getting into the, into the root cause.

And I think that's, you know, in terms of what you're trying to do, unlock the, you know, the healing, as well as the performance potential in your clients is we really need that level of detail.

We need to be able to discriminate, you know, symptoms versus, root cause. And so this would be a very easy way to map the entire physiology to look at the function of the organs, as well as to be able to detect the presence of degenerative states, to be able also to predict the, presence of more kind of classical disease, states of the body.

And we have we're really kind of now focusing a lot in terms of the diagnostic side, you know, and that's kind of the, a big future path for us. And, of course, once again, when you when you deal with such huge data sets, you know, we have to leverage the, the capabilities of artificial intelligence.

But the cool thing is, like I said, we can also measure functional states. And so when you bring this into the context of consumer wellness, right, we now have this ability to empower, you know, data collection outside of the clinic.

Right. And so this is part of that decentralization of care, which is going to shift things, because I know that if you had if you had information as a clinician, about your patients, that wasn't like every time they could go and get kind of, a blood work up or, you know, maybe you have them do an MRI or an ultrasound, but if they were collecting data from their home, from their daily life every couple of days, even if you if you didn't see them for a full year, they come in, you could have hundreds of data points and you could say, yeah, well, you know, maybe you could do that with an Apple Watch.

You know, Apple Watches is, you know, constantly measuring heart rate, heart rate variability. But here's the thing. Whole body analytics is very different than looking at, you know, in the spectrum of, of HIV.

Right. It's kind of looking at someone's health from 50,000ft versus kind of, you know, 50ft. I'm just, so let's just for just, again, the viewer to understand.

So there's enough variation and there's enough information coming from these from, I guess, electrical signals from these leads that people are putting on with the device that you can actually sense, the health of various organs.

Is that correct? Yes. So, yes. Sorry, I misunderstood for begin because I was thinking, need more story. But if you're talking about health. But the work is definitely our information system.

Trying to keep spatial balance of our budget based on the environment in the book, so that when it's like, the best tools today, I would say, the to help us to really, not only organize communication, our reaction for environments is can be food psychological environment, environment, environment that a three environment major environment affects our body.

And we have to know how we react. We have to know how we are that. So in this case, no. An imaging device can, ask for no X-ray, no MRI, because they, they just look in stable picture or not any, functional device can tell your whole picture because we we can use EEG.

Easy. It's a great device, but they in specific areas. So budget equal to it's, one unique tool to they can analyze in 30, 50, 32nd call body communication organs communication.

## Consumer and Clinical Applications

When I'm talking communication and reaction adaptation factor which is really important especially important for people who is looking good health who is watching both health.

If it if we can take it like position for people who is athletic what that when it's very important because based on audience communication you can predict burnout process you can predict even like, predisposition of injury.

You can predict, even like, mental dissatisfaction of event. They doing because device able to read audience reaction. And based on the action we can, make it and we can mobilize the beaches that UVA is doing already, but it's not so good.

Maybe it's too much. I'm thinking of psychometrics. Yeah. So I guess, you know, to to Dimitri's point, and back to your question, Sanjiv, is we traditionally we look in terms of biochemistry, we want to see changes in the biochemistry of of an organ.

Well, every time there is a change in the function of the organ or the cells, the tissue, it's changing the information, through these, you know, electrochemical impulses, and it's communicating to other tissues, other organs, to the central nervous system.

And so our data, we've been able to validate that we can essentially be a proxy for electrochemical, sorry,

biochemical changes through electrochemical, informatics and in a good, you know, really kind of case in point is, you know, sometimes when we're either doing research or even just demonstrating the technology, we do, kind of like a provocation or a stress test.

And Dimitri was talking about our bodies always, constantly, reacting to its environment. And let's take, for instance, the food environment. So many people today that have maybe, food sensitivities, the body just, have the capability of being resilient enough to withstand the impacts the, of sometimes the, allergenic potential of certain foods.

Well, you know, think of this as the ultimate biohacker tool. If I want to experiment and I want to take a food, if I can actually do a baseline, equity scan, and if, if I actually measure even 30s later after I consume.

So my body is, you know, it knows exactly what I ate, and it's responding. Sometimes it's going to respond in a very positive fashion, sometimes in a negative fashion.

So if your, let's say your your dairy intolerant and we scan you a baseline, you drink a glass of milk, we can measure the impacts in a predictable way, starting, you know, kind of like with the gastrointestinal tract, you know, lymphatic changes, maybe some adrenal, activation.

And we can do time series. And it paints this really, really incredible picture of how the body, the whole body is responding to changes in its food environment.

We've done this also with its chemical environment, like, for instance, like if we were someone is smoking a cigaret. For most people, smoking is going to be a very, toxic event for the body.

And so to do a before kind of before and after time series, scenario, we can very, very do very detailed map of how the body is coordinating all of its biological resources to deal with that stressor.

And, you know, we've done work with high performance athletes over the last, you know, four years we've worked with in California with the Red bull, high performance Institute, really kind of now looking more into the world that you kind of, have moved into is like performance people, regardless of whether or not you're a professional athlete, people want a high performance.

So it's different when you know what you're measuring kind of or practicing sick care versus people that, sure, they may have some, some, chronic issues, whatever, but you're trying to support an environment for them to really unlock their full potential to help them live their best life and perform at a high level in a sustained way.

Anything they do. Well, you know, athletes are really, really good examples or subjects to study. And we studied athletes for about, four years to understand how our technology could even work in that, in that field.

And it was really kind of we, we chose Red bull because Red bull is renowned as kind of being leaders in science and technology. For, for human human potential and athletic performance.

And so there were so many great insights. But we do stress tests. We want to know, how does even an athlete has their body respond to changes in, like, to jet lag.

So how does that impact their circadian rhythm? So we've been able to do some really, really insightful things like that, you know, or you know, what changes physiologically are happening, you know, before they compete kind of during or just after they compete.

What does their recuperation kind of phase look like? And by having this whole body analytics, we can make really, really informed decisions. How can we better support them.

So it takes a lot of the hidden insights out of the work that you want to do from a clinical, you know, or just kind of a wellness optimization, perspective.

What do you think the future, will look like with regards to, like, how can the viewers get access to this technology like, where is it at right now? And, yeah, yeah.

So wins and a consumer product is coming. You just talk talk about that. Yeah. So we're building out two, parallel tracks, both consumer and clinical.

The consumer offering will kind of be our first entry into the marketplace. And so, you know this, there's a plethora of, of digital health devices today that are out there, the Fitbits and the Apple Watches, etc., some really great devices that have some utility.

However, this would be the first consumer based device that gives someone the potential to do, a scan, very easily take, you know, just a couple of minutes out of your day, do a scan.

And our, our artificial intelligence engine then can interpret all that data and give you really insightful, indicators about how are you doing from a wellness perspective with the idea that we want to help them to optimize that.

Right, including things like just the concept of healthy aging, longevity, you know, and a big theme with your your summit right now. So, like, what can we be doing in our lives, to help us to be on a track of kind of more optimized, you know, aging process and, you know, it's so unique to everybody.

## Future Plans, Funding, and Contact Info

So that's there's so many different, you know, actionable insights that we can provide consumers just through, you know, them having the app and there's a hardware component as well to record the data, you know, comes from biosensors, but from also from a clinical perspective, which would be, you know, the next kind of, you know, market entry for us, you know, using this exact same concepts, you know, we can take into a clinical practice the opportunity to, to do, frequent, data captures about how, how is someone tracking if you have them on a protocol?

Well, how are they really doing? Yeah, sure. You're going to still rely on things like blood tests and other types of, you know, diagnostics, you know, however, this is, you know, a very, very important tool that a clinician can use once again, to look at the whole picture, to uncover those hidden insights that you, you know, you will need to kind of once again optimize and create a hyper personalized protocol for, for your patients, ultimately delivering really the best possible care possible.

Again, in a few second, I would like to, when I, when I been doctor in Russia, I collect data with 6000 about patients who had the disorder when they moved here.

Me and Marco, we collect data, waves of people who have health, life. When we compare it from to where you you kind of. And the, I hope it's possible to tell you from like, connection.

What is count of the illness? Let's see, for example, Parkinson's disorder. If you found, like, I could get some type of fat. So it's the same activation in the same area, but they have no Parkinson's.

They have a better balance than other people. So it means like, based on those type of conclusions compared to, like, data from sick people and compare the data with, from healthy people who is doing healthy life.

And for whatever reason, you can see whatever it's sickness, it's actually it's a gift. So what? It's equal to my dream for the future, to help people, to, to turn from seek away from, and, not like go away for their budget to be adopted, to give us so we can instead of sick people, we can get give the people the same amount.

So that's one. That's my dream. Yeah. I mean, I really think that we're I think you guys are at the beginning of something that's really amazing. I think, a couple years from now, people are going to be asking, you know, who wanted to listen to this exact interview of the how it all began?

So I understand that you're raising you're raising funds or raising it. You're doing a series A for this, for this

company. I could say. Yeah. We're in the, the later stages of of, completing our minimum viable product.

And this is for the, consumer, go to market strategy. So, yeah, we just, you know, we've, we've been very, fortunate to have a lot of, government research grants, and some early kind of pre-seed investors.

We're now kind of the final push into the marketplace, and we just, opened up our series around where should people go to learn more about equity and and to learn more about, this technology?

Yeah. So we don't really have a lot of information available online today. But, you know, maybe in the, you know, the summit notes that, people could, you know, reach out and get a direct feel free to, to contact, contact us directly.

I can provide that information. And, and as well, you know, you can, you can, you know, visit our, our website at equity. Com a wiki. And there's a, there's an opportunity there to at least leave some information so that you can stay up to date, you know, communicate us with us.

And we'd be happy to provide anyone some additional information. That's so awesome. I know I'm going to get one of these devices in my practice as soon as it's, it's, it's ready.

We can do that. So I'm pretty excited as a whole. It's really, I think, mind blowing, because it's, it's a whole new area that we don't learn in medical school.

But I can just see that this is going to have some huge, huge impact on our health, on our health that I can tell you. Oh, sorry. Sorry. I have a little bit, but, I can tell you, for example, for future when, when they see it, this one, it's a straight line to, artificial intellect.

The development instead of like, yeah. As I told, amount of, like people. Who is the ego who is not balanced. If you can get, more gifted people and also this will be benefits society because if you each but give you a nice gift called the body design.

What it's environment. Everybody will choose right war and right communication. Right environment to live that one. It's like so my dream to Paradise and I believe you guys who you, around you Mark my teammates, everybody supported this by energy because, you see feedback.

And when you start to work, it's definitely you will see like, arthroscopic, telescope for, for stars. We just, we can discover much more than we expect from our budget.

And, guys, it's amazing what's inside. It's amazing. Yeah. So lots and lots, lots of potential. But, we're really, really grateful for the opportunity to to sit and talk to you and share a little bit of our story with your audience.

And, congratulations on another year, this summit. It's, it's quite an exciting lineup that you have. Thank you so much. I appreciate your time today. Thank you.

Thank you, Dmitri. Thank you, thank you. Okay.