Introduction and Speaker Background

Okay. Welcome to another interview. For the, Ms.. And or, I mean, summit, the next interviews with Doctor Erna Woods, who's worked in biotechnology for over four decades.

He's a co-founder and CEO of FB BioMed, a privately held biotech company that developed a blood test alternative to the spinal tap, and brain scans to make neurologic diagnoses.

His area of expertise in the field is of RNA, virology, genomics, artificial intelligence, and chronic diseases. Doctor Anna Watts is the inventor of the billion dollar market of liquid biopsies, and the founder of the Golden Age of Virology.

Doctor Edwards received his PhD from the University of Michigan Department of Microbiology and Immunology in the laboratory of professor Bill Murphy. He continued his work in tumor immunology as a postdoctoral fellow in the laboratory of Professor Richard Lynch, Department of Pathology at Washington University, Saint Louis, and also at the University of Iowa.

Formerly doctor, Edwards founded and served as Chief Science officer and the director of a publicly traded biotechnology company that developed the only FDA licensed urine based diagnostic can confirmation test for antibodies to the human immunodeficiency virus or HIV.

So, welcome, Howard. Let's talk about, how these new tests can impact those of us with multiple sclerosis. Okay. Howard, it's. I'm so glad that we're here, chatting.

And you have a really interesting, concept. And what should I. I'm pronouncing it correctly. The endogenous ancestral nucleotide sequences. And I think our listeners won't understand any of that.

So let's, first translate what is that? And then we'll go into how that may influence autoimmune diseases such as multiple sclerosis. You bet. Thank you.

Terry, it's really a great honor to be on with you. Those long words Basically means that we have evolved into the homo sapiens mankind that we are, because we collected along the way about 150,000 years ago, as, mankind walked out of Africa, they started to collect viruses and microbial genes in into their own, genome.

And by doing so, it gave them an advantage. We now know there's five super groups of humans. We have Chinese, which include, Japan and Korea, South Asia, which is India, Afghanistan, Pakistan in Africa, of course, Northern European and South American.

And so because of all these various different viruses that we've collected and since they're integrated into our germ line, where you where you get mom, you get your germ line from your mom and your dad, is that you?

Endogenous Viral Sequences Explained

Call these now endogenous? So these are endogenous sequences means that you don't get them from, like, flu. When you're sneezing on each other, you get it because it's passed on through your germ line.

It's the ancestor. We got into our DNA, that was passed from mom and dad to us. Over. You know, probably about 80,000 generations, 85,000 generations.

And then keep going. So, and because they're ancestral and we call them incestuous because when you, go to a data base and ask, what's the identity of this gene sequence?

If you get a hit all the way down from viruses, funguses, monkeys, primates to humans, then that means that all of that, it's shared with all of those different groups.

It's ancestral. So it started from we pinpointed 150,000 years ago when the first Homo sapiens walked out of the cave because the earth was warming again and walked all around the world.

And in doing so, for example, the first big breakthrough in the last five years was the discovery that a herpes virus is found in northern Europeans, but not found in Africans.

And so, we now know that herpes viruses have very much, have very much created the landscape of who we are. And, we'll talk about that with Ms.. And Epstein-Barr virus, because I believe that the study needs to be reinterpreted.

But we can get to that when when the interview continues. Okay. So super interesting. So, so over time we accumulate some of these viruses. They apparently give us some advantage survival advantage by having these viruses.

So it's super interesting that we think of viruses as harmful but not entirely. They, you know, can get incorporated into our DNA, can give us some advantages.

And so they, they persist in if I understand this correctly, we have a slightly different set of viruses that got into our DNA. For those of us who are of European descent, those who are of South Asian descent have a different set of viruses.

Those in the Far East, in the, Chinese Japan, Korea have a different set of viruses. And then South America. What about the North Americans? Do they have?

Yeah, that's something that, you know, it's kind of hard to get blood. 2013 me had a hard time getting the, Native Americans, blood because it's their spirit.

So the answer is we don't, Then we'd love to know. And if I had to guess, it would probably be either the, the South American lineage or the northern Chinese lineage based on Snip data, but we haven't looked at the rest of the info.

Okay, so getting back to that first question. So I think I understand these ancestral endogenous genes that we got from our virus friends. And what you've discovered is that those genes can influence my risk of developing multiple sclerosis and other autoimmune diseases that have, neurologic or psychiatric symptoms.

That's correct. And and we say that because, we know, from our studies, one that, we published together that we could show that it's a whole new set, its own unique set of genes.

These genes are there to develop you into a human. The normal human brain development is about 25. You're probably who you are from that moment on. But getting there when you have to turn from a caterpillar into a butterfly and all of the things involved, that's where these viruses and viral fragments come in.

Then they go dormant. So now the missing link that we know pesticides are involved, we know lots of things are involved is I believe that there's the actual trigger to reactivate dormant viral genes, ancestral genes, as we call it, for short, to act up.

And when they act up, they can act like a virus. They can, they're RNA in nature. They can reverse transcribed themselves back into DNA and make more copies of itself.

The more copies they make, the more the disease progresses. So, it's inherent to us to identify what are the early stage genes so that we can identify, Ms..

In autoimmune diseases before symptoms even start. That's the important hypothesis. So, let me see if I've got

this, so we can translate for our listeners.

These viruses are very helpful when we're young. Then they get turned off, they're quiet. And they should stay quiet. They should stay inactive. But we've come to realize that there are environmental factors that can cause these genes, which should be dormant and quiet, to again become active.

And it's that active state that then contributes to the development of multiple sclerosis and probably other systemic autoimmune diseases that can, you know, create neurologic and psychiatric symptoms.

You you have summarized it perfectly. Okay. So this, this super interesting that these genes must have been super helpful in our evolutionary history, because if they had been strictly harmful, they would have disappeared.

So how did that happen? Well, you know, it's back to evolution in Darwin. Our friend Darwin nailed it. Is that, it was survival of the fittest.

EBV, Autoimmunity, and MS Risk

So those, why do we go from African to blue eyed, blond haired Vikings is because, it's a completely different environment. And one of the shocking things that we discovered as we started to, play around with our, our, research use only test was the fact that, and I'm sitting here and you have to realize, if I just look over there, it's the laboratory of Paul Ehrlich here in Frankfurt, Germany, and Paul Erik 110 years ago with rabbits and bacteria and serum, figured out that there had to be a variable region for a protein called antibodies.

Our discovery has now led us to believe that since the human genome map has never been fully mapped, it's 10 to 20% unmanageable. We claim that's where the variable regions of different human populations are.

And we've even mapped one region, and we believe it's that spot that the other 80% makes us a Homo sapiens. But the other 20% makes us a survivor. In the new environment that we have encountered 150,000 years ago.

And so we are, you know, this is some pretty fast evolution. And I believe autoimmunity is when you turn on, let me get to may I get to Epstein-Barr virus?

Oh, yeah. Yeah. And so for the listeners, there's a lot of excitement that in a, big study in the military, that, identified the, exposure to the Epstein-Barr virus appears to be a very important factor contributing to the development of multiple sclerosis.

Yeah. And I'm going to add in some other systemic autoimmune diseases. Yes. But of course, exposure to that virus is not enough because many, many, many people are exposed to the virus 95% of us.

But we don't all get autoimmunity. So it's it's an important part of the environmental factors, but not the only one. And now, back to you, Howard. Yeah.

So what happens is that I looked at that study and, quite frankly, it was a marvelous study, was conducting a lot of, Army volunteers. All they had to do was give a blood test.

But the fact of the matter is, they didn't really measure Epstein-Barr virus. They measured the antibody to Epstein-Barr virus. That is a critical observation because I of the following.

And this is why I said introduced it with the first herpes virus, six that we know of, that is embedded in northern Europeans. But northern Europeans also have, what's called HHV7 and steam bar virus.

EBV is endogenous to northern Europeans and to other groups. It's not so African populations. All right. Are you telling us that that northern Europeans basically all have Epstein-Barr virus in our.

Yeah. DNA? Yeah. About 90% of the virus. One study showed that key pieces were missing, like the on off switch.

And so, we've incorporated all of those things in us for evolution.

So when think about this from autoimmunity standpoint, if you're exposed to a toxic exposure, radiation, chemicals, all of these things, even a virus, then if in fact you reactivate the Epstein-Barr virus antigens, you will have auto immunity.

Those antibodies are against a reactivated Epstein-Barr virus, not against a new exposure with, lots of subclasses of viruses can turn on your endogenous Epstein-Barr virus.

But that's the target is is those endogenous viruses? So, Yeah, I want to be sure I'm understanding this correctly. It's or translated for our audience that likely I from mom and Dad, I got a copy of the Epstein-Barr virus in my DNA.

And that virus may not be the whole, correct linear sequence, but, you know, a big part of it. So it's part of my DNA. I don't necessarily have to get a Epstein-Barr virus infection because I have it in my DNA.

And, but I'm sort of thinking about myself. You know, I grew up on a farm. Atrazine is probably in our farm. Well, so I'm being exposed to pesticides throughout, childhood.

I go to medical school, incredibly stressful, not enough sleep. And so those environmental triggers likely reactivated my Epstein-Barr virus. Do you think, what do you think, Howard? Absolutely.

That's the scenario I'm proposing. And, you know, in in the Midwest, we have a high incidence of cancer that can be linked to the various different pesticides, all those things.

It's wherever it lands and wherever does its damage. It will set off a panel of, reactivate these ancestral genes and then slowly, very slow. So viral infection, basically happens, except it's more of a sub viral because as you stated correctly, it's these are viral fragments, that have been rearranged.

We could find one virus on one chromosome and the same virus, other half on a different chromosome, because it made sense for evolution, but it made more sense to package it here and there.

So this breakthrough is we called this junk RNA in junk DNA for 40 years. And the whole breakthrough here is decoding the junk. And when you look at the junk and it's been called contamination because it is viral sequences in bacteria sequences, it's not contamination.

It's it's life. The basis of life. So, if this gets reactivated, you know, this partial virus that gets reactivated, it's replicating. It can't make me sick from the viral infection.

But I'm guessing what it does do is it activates my innate immune system. Yes. And so now we have too many inflammation producing molecules. My microglia in my brain are now activated, and I'm more likely to make new enhancing lesions and new relapses because of the activated, immune system.

Okay, this sounds like, well, so what what do we do with this information? How how well make it useful. Yeah. So, we were, we started, a program, we're going to, in January, February, allow this test to be used in the hands of clinicians, medical researchers by offering it as a research use only test.

And so we were, doing a site where we, we're, just doing it, just to see how well it works. And the site sent us, two patients that, were, had no, no visible symptoms at all.

And we ran them with the batch of everything else. And they came up Parkinson's clustering with Parkinson's disease, no other disease. We have a test now for 11 different neurologic diseases.

And it was clustering only with Parkinson's. And when we called the, doctor, the clinician up and said, here's a report. And they said, we're looking at the the, the, ICD codes.

And there's nothing related to Parkinson's for this patient. Why would you come up? Parkinson's? And I asked one simple question as a old venerable RNA virologist would, is have any of these patients suffered from Covid infections?

Both of them did. In other words, when you ask the question, what are we going to do with this? We just caught stage zero Parkinson's disease. And in neurology, many neurology directives and some of them say treat early, treat hard.

And so if I could tell you that, we've done psoriatic arthritis and we've done multiple sclerosis, and if I could tell you that we could in fact find Ms..

Before their symptoms, I think that's going to be a step towards then integrating things like your protocol and what have you so that you get healthy again.

That's where I see this test going after the clinical studies prove if our hypothesis is correct.

Testing, AI Analysis, and Early Detection

Now, again, for the listeners, I want you to think about, because I talk about the prodrome of symptoms that increase the risk for, multiple sclerosis, for Parkinson's, for Alzheimer's.

We also know for schizophrenia, in the true for rheumatoid arthritis, and some common, problems are anxiety, depression, headaches, chronic pain, belly pain.

And for, Ms. endometriosis, infertility, asthma, skin problems. And so I can envision that this could be really useful for, people. And you might think about your first degree relatives, if you have Ms..

So that could be your siblings. Your children, are they at risk? So this could tell you that. Yes, they are, you know, the trajectory to develop. Ms.. Yeah.

And so we do that test, we, we get the result that says, yes. Your what, how it's close to zero. Then if you called me up, I would tell you that this is the, stage where I could be very optimistic with a very thoughtful approach for optimizing your environment.

That is, your nutrition, stress management, sleep, etc., that things, could improve. And now here's the next really important question. So I the person gets fired up, they're going to work hard on their diet.

They're going to work, hard on their stress management, their exercise could what happens when we follow the this test that you've developed? Would that tell us that things are getting better or not?

Yeah. Yeah yeah. You bet. So the, the first part is of the 11 different, what we wanted to do was find out how many Parkinsonian diseases will work. As you just said, early stage schizophrenia, depression.

We actually found ancestral genes for all of them. Depression, schizophrenia. PSP palsy, multiple systems atrophy. All of them have their own unique set.

So we tell you, the doctor what you've got, you interpret the test, put them on your program, and if it's working, we should not see the cluster anymore.

The things that have the potential to improve and regress. Resolve. Exactly. Correct. And so because, you know, we're just always in chronic inflammation as inhabitants of the planet Earth.

And so, some people need to be higher, concerned like farm workers do. People work on farms where there's chemicals and that kind of stuff, and everybody has their own, and then those that are in the mosquito belt, have their own set of problems.

But whatever it is, we've got to find it early. We've got to, put you on the right protocol. And with time as the AI program, it gets more and more data.

It will start to prognosticate. So, for example, if somebody has this batch of ancestral genes and has multiple sclerosis, we know that protocol one will work best on those people most effectively and then prognosticate for on and on so that you're just giving people personalized diagnostics, personalized, treatment.

And, I think that's where the, that's where the mess is going, because chronic diseases are too difficult to understand is a one gene problem. In fact, it's panels, panels of viral elements.

So in this, I'm sort of thinking about this, that we have genetic vulnerability, in our own the world. Right now, it's about 300 genes that have been identified that increase my risk.

And for the listeners, most of those genes, the increase risk is about a half percent, maybe percent. There's just a handful of genes that increase the risk as high as 10%.

So still the there's these other environmental factors that are part of that. And I think what how it's time is, is another part of those environmental factors are the, these ancestral genes that are present that have not been understood until, Howard's work.

And so. The genes don't necessarily increase our risk, but if they get turned on, then our risk is increased. Would that be correct? Yes. In fact, once you turn on the wrong ancestral gene with somebody that has a mutation in one of those 300 genes, they will be higher risk to start interacting with that panel.

And so that's why we're saying is, just like the breast cancer genes one and two, Brca1, Brca2, once those are, activated and they act with the wrong set of, the wrong set of ancestral genes, which, by the way, is located mostly to northern Italians and Ashkenazi Jews because their variable regions are the ones that put us at higher risk when the Brca1 mutation is there.

Same thing with them as all of those, mutations are accurately described. But they and here's the kicker. They interact with the genome. It's an interactive infection, which is why we call this the golden age of virology, because viruses do not follow, postulates that say one virus, one disease.

They have to work with the genome. So whether it's a virus that's working with the genome or it's a toxic exposure that turns on your ancestral genes and interacts with that mutation, we think that we're completing the circle and Hall, how the causation may start and progress.

And again, for the listeners, think of this as another tool that you could use to, follow how effective am I being with my diet and self-care program?

It leads me to another really important question, Howard. How often, what I want as, the patient, you know, if I, if I get this test with you and you're like, okay, Terry, in fact, your Epstein-Barr virus is still a little bit active, and that my panel is still turned on.

And so I'm going to tune up my program a little more thoroughly. How often should I check, recheck. Yeah. So that's a great question. It'll all be based on on what stage you're at.

So if we got you early stage, you know, we could test again in, say, three months. But if you're a little bit more advanced and we have to make sure that we're getting the your dose of vegetables, right, or you need to do a different exercise or electro stimulation.

All the great things you guys are doing, is if it's really bad, we probably want to do it every six weeks, I think. And so it's all going to be based on, how much of the ancestral genes you've turned on, which ones you've turned on, and whether we should follow you more closely or longer.

It's all personalized. It just depends on where where we picked you up in time. So, I can get a report that everything's quiet, things look good, and then it's probably, what, annually or.

Yeah, annually. I would suggest, and then after 25, and then, if it's turned on, you there's a gradation of severity, in the panel on the gradation of severity, the clinician may say, you know what, Terry?

Yeah. I'm really worried about you. And so we're going to have you, make these changes, and follow up in six weeks. My functional medicine doc probably would have also checked my nutrient levels.

I may have checked some hormone levels. Based on my history, they may have checked some toxins and had some interventions based on that additional diagnostic findings, changing, perhaps my, vitamin supplement, targets my detox protocols and then recheck me according to the intensity.

And the intensity might go from what you call stage zero to, is there a numeric, testing here? Yes. It's quantitative, you know. Quantitative. Okay. Yeah.

We're using I, programs, and we plot it on a graph, and you can actually see the change. Okay. So I, artificial intelligence. Yes. To, interpret because there's huge amounts of data that we are analyzing to look at all of this.

Yes. It's, we couldn't have done it without it again. Is this blood, urine, saliva? It's blood. Now, our our game plan is that, we've made the discovery.

We're going to, start offering this as an Oreo test, and then we're going to start looking for a shirt, offering it as a what kind of test? Research use only test so that those people that want to start repeating our findings can do so.

We have a laboratory. Well, we're making the announcement. Let's see. We made the announcement last December, because, we had contracted a lab in, Tennessee that does RNA sequencing.

And so you can get the whole protocol on our website, FB Frank, brother brother bio.com and, go under whatever section patient, clinician or, or the like.

Availability, Follow-Up, and Future Plans

And, we will then partner with a company to take this test through FDA because we don't have the resources to do it. And what we want them to do is to start doing a bunch of clinical trials, things like diet, which are the best diet for the rich people.

And, you know, all of the great clinical study work that you've done in others is just integrate this new tool into clinical studies so that when you walk in and someday take a saliva test, because all those angry ancestral genes are in your mouth.

But right now, the minimal viable product is a blood test. And, we'll get better and better. Less cost, to a point where you can just even draw your blood in a pharmacy and send it in and go to your report.

That'll be read by a pathologists. And so, this will all take time. But what we wanted to do was let's make the discovery. As a company, we have to own it.

So we filed a patent, the full patent in December 2024. And now we're looking for a partner that says, I like this. I think we can make this reimbursable, an FDA approved product.

And we have the sales and marketing to make sure that every clinician in the world is taking care of patients early so that we never see symptoms again.

That may take 5 to 10 years, but every great journey starts with a start somewhere. Yeah. Now, for our listeners who are thinking, this sounds really interesting.

You know, I have M. S., I have some kids that, you know, I'm sort of worried about them, and I'd like to get them tested. It's probably complicated if you're testing minor children.

If you're testing adults, it's probably easier. But, how how would our listeners get a test? Get this test? Yeah. So we're going to post, updates on our website.

The test is not. It'll be an early adopter. We know that, there's a bunch of functional medicine docs out there that want to give it a run. And so I would say it'd be, in the general public.

So go for those for a second. If you want to answer it again, we can edit it. Okay. So, tell us again, for listeners if they want to get this test, what's the process that they would use?

Yeah. So, you can go to our website. We have our first site that is going to be offering the test in, early 2025. It's called the Maxwell Clinic. The, principal there is Doctor David Hussey, who is a colleague of all of us, and he's going to start, ordering it.

So if you live in the Tennessee Nashville area, you can get it done. And then we're just going to start going state by state. If if you contact us at the information on our website and say, I think there's a bunch of people here in our city, we'll reach out to the clinics there and get it going.

So it's going to be interactive with the patients, where they can tell us where do you want us to put this? And then your your contact is with your doctor.

We're the ones who send the doctor the report, and your doctor will have to interpret it. And so it's basically for information only, but it's kind of so easy to interpret.

Yeah. We've made it as simple as possible that we can finally pinpoint it. So stay look at our website every couple weeks and you can even, register or just send us an email and we'll put you on our list of updates, because, this is going to be in full swing, I think, by next summer.

And so right now we're just working the bugs out. So I think for the listeners, really intriguing test. You can go to FB BioMed instead.com it's FB bio.com FB bio.com and we there's probably a contact page where you could fill out your name, email and question that you're interested in getting the test.

Somebody from the company. Well, yes. We'll contact you and tell you, what the next steps are. And again, for the listeners, this is an evolving, company.

And I'd be very optimistic that the test will become more readily available for you. And, I've seen these reports, the reports will give you, feedback.

Are there, neurologic conditions that you are developing the profile for? And then your medical team can look at that like, it's really important to address the environmental factors.

And again, we, we talk about that all the time. We're talking diet, nutrition, exercise, toxin avoidance, hormone balancing. And then based on the report that your doctor's looking at, they should have a, a good sense of the urgency.

How quickly we should, recheck, and, you know, again, when you have that conversation with your physician, if you still have some questions, could the, individual reach back out to your company and say, look, I still have some questions.

I well, well, that opportunity exists. You think? Howard? Oh, yes. Oh, yeah. It's the same thing. It's, if you haven't already established, and I'm probably the person who's going to talk to you, is that, you just simply write us an email.

Can I ask, doctor? And if it's a question and within 24 hours, I'll. I'll either put it in writing or we can have a zoom call. Because. Why? Because, this is what we call in the business world.

Customer discovery. Now, our customers are really doctors, but it sure helps that if I if somebody tells me about some I hadn't thought about before, it's something we'll add in our conversation when we're constantly updating our clinicians around the world.

So feedback from the person who's suffering, is what we call customer discovery. And, and it's free and it's worth it, but at least both of us will learn something from it.

And, just go to the website, hit hit contact us. You know, it'll come right to me. This is marvelous. This is just, So, important. And, I'd say again, to the listeners, this is, a cutting edge, discovery of another tool that you're integrative functional medicine, physicians, clinicians can use to help monitor their progress with getting your your health back in optimal alignment.

Was it, okay. I checked you. What do you think the biggest opportunities are going to be? For this new and interesting technology? Howard? Well, we have an immediate problem, and that's the fact that there's a wave of Parkinson's going on and probably other neurologic diseases.

And that's because of Covid. And we know this because, the Spanish flu may have killed 50 million people worldwide. And that's because everybody's genes were already activated. Why?

Because they were inundated by the jet streams carrying all the chlorine and mustard gas from World War One. So that's why that flu just spread through the population.

What? And then a surge in Parkinsonian diseases happen. The most urgent opportunity, right now is for us to do a clinical study and get a partner to help us get this, test in everybody's hands, because we need to know right now, are you developing, early stage Parkinson's?

But who knows? We haven't tested yet. Is it early stage? Ms.. Yeah. Autoimmune diseases with this is the most urgent need we have. And that's why we're, we're doing this clinical study to, in fact, say, this is right, and then publish it in a journal.

But we should kind of pick up the pace a little bit. And so we will be reaching out to public health officials, once their patent is filed. And we have enough data because let's face it, we're all scientists here, and it takes a lot of data to change a paradigm.

And so but we still have an urgency here. And, we want to make sure that as a result of Covid and the continuing presence of Covid, we may not get hospitalized this time.

Thank goodness. But the fact of the matter is, it could still turn on ancestral genes that lead this. So this is a, I think, an urgent task that has to be dealt with in 2025, you know, and, I know hearts talking a lot about Parkinson's.

But we also see, this marked uptick in multiple sclerosis. Correct. More relapses, more pseudo relapses directly related to the, Covid. And I know my neurology colleagues are certainly telling me that there has been a marked increase in the number of new cases.

So I think in addition to increased Parkinson's, increased Ms. is certainly a big is happening as well. I completely agree. Okay. Howard. So one one, this has been a really great interview, I appreciate it.

I think, I love talking to you about the cutting edge, work that we're doing together. Now, could you tell everyone one more time how to find your company?

And then also, do you have, social media as well? Oh, absolutely. If you're not on LinkedIn, get on LinkedIn. And it's just my name. Howard. Ern, if it's on and I post every day on stories that I like and stories that I think should be

re-interpreted.

But if you want to get Ahold of us again, the website is and I'll say this slowly, it's f frank b brother B, brother b, brother I o.com. So FB Viacom that's how you get Ahold of us.

We it works for us perfectly. And, I'll get right back to you. Or I'll tell you when I can get back to you. But if you're a patient, a scientist, a, Miss Doc neurologist, learn about what this new revolution is and and start reading up on it, because, you know, I, I've worked on it for over a half a century, but I needed I to finish the project.

And so even though I'm 70 years young, I'm still going to get this done, because then Terry and I will be working on longevity after this. So there's a there is.

Hey. Thank you. Howard. And we look forward to continue adventures. You bet. All the best.