Early Biomarkers Of A Brain On Fire Transcript

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Introduction and Tom O'Bryan's Background

Dr. O'Bryan, welcome. I'm so glad you agreed to be part of this summit. Oh, thank you. It's a pleasure for me. Anything I can do to support you, Terry?

Always. It's always a pleasure. Okay. So, Tom, could you introduce yourself, explain why you are such an expert in this area, and then we will get down to our questions.

Okay. My name is Tom O'Bryan. When my ex and I wanted to get pregnant 43 years ago, we were unsuccessful. I was an intern. I called the seven most famous holistic doctors I'd ever heard of.

And I asked them, What do you do for infertility? They told me. And we were pregnant in six weeks. And our neighbors in Marion Housing, we lived on campus, asked if I'd work with them.

They'd been through artificial insemination and nothing. It worked. And I said, Well, I don't think it will harm you. Okay? They were pregnant in three months.

So now we're four months pregnant. Excited as can be telling all of our friends and our friends. Sister in Wisconsin would drive down. I was in school in Chicago, would drive down to Chicago and I was treating patients out of my dorm room.

So you're not supposed to do that. But people really wanted to help. And, you know, there's not much at all or in in medicine, that's all or every. But this was every every couple that had a problem with fertility, whether it was premature ejaculations or recurrent miscarriages.

It didn't matter what the symptoms were. Every couple had is as a component end of what was triggering their problem. They were eating foods that they did not know were causing inflammation for them.

Every single couple and that always was a component of working with them. And the most common food we found getting dramatic results when we eliminated it was gluten, wheat.

So that started me on my journey 40 years ago, and I've been reading papers ever since. Now I understand the science behind why all that occurs. And, you know, in this topic today of multiple sclerosis and autoimmunity, by definition, it's an inflammatory process that's going on.

There's inflammation going up. So the question is, where is it coming from? So that got me into the whole world of autoimmunity and the mechanisms that set people up to develop autoimmune conditions.

Now let's talk a little bit about protective and predictive autoimmunity, because people get wrapped up that all antibodies are terrible for us. But that's not entirely true.

Don't you explain that a bit more? You bet. You bet. It's just like inflammation. Inflammation is not bad for you. It's necessary for survival.

Protective vs Predictive Autoimmunity

Excessive inflammation is not good for you. And that's what we have to learn, is to differentiate. And the same with antibodies. Antibodies are the your immune system.

Is the armed forces in your body is there to protect you. There's an army, a navy and Air Force, a Marines, a Coast Guard. We call them AIG, AIG, AIG, GM cytokines.

There are many different branches of the armed forces, but they're all there to protect you. One of the roles of antibodies is to clean up debris, old and damaged cells.

And so that's why, you know, if you do a blood test, if a doctor suspects a thyroid problem and they do a thyroid panel, if they're comprehensive, they also look for thyroid antibodies.

And it's one of the more common autoimmune conditions is hypothyroid. And it can be either Hashimoto's thyroid disease or graves. But there are autoimmune conditions, so you check for the antibodies.

When is it normal to have antibodies to your own tissue? Why would we ever have the immune system attacking your own tissue? Because there's a reference range for thyroid antibodies.

Depending on the lab, it's usually up to about 40 to is okay. And above that you have elevated levels of antibodies and that's the difference between protective and predictive autoimmunity.

That protective autoimmunity is when you're in the normal range for antibodies because they're cleaning up old and damaged cells. That's their job. That's part of the mechanism for us to grow.

This is patient. You have an entire new body every few years. Every cell in your body regenerates. Well, how does that happen? Well, you have to get rid of the old and damaged cells to make room for the new cells.

And so your antibodies are a component of that process of cleaning up the old and damaged cells. That's protective autoimmunity, that your antibodies protect you, cleaning up the debris so you can make new cells.

Predictive autoimmunity is when you have elevated levels of antibodies more than what you should have. And by definition, that means you're killing off more cells and you're making.

And so when that's occurring with the your tissue called myelin, which is a Saran wrap around your nerves to protect your nerves. And if you have elevated antibodies to myelin as an example, that's the mechanism that eventually causes M. S..

And we now know that because there are so many studies on this, that there is a window of opportunity to address that auto immune mechanism that's leading to auto immune diseases.

You get diagnosed with an autoimmune disease when you've killed off so many cells that that tissue can't function normally anymore. And now you have symptoms and you go to the doctor and you get numbness and tingling, or they say, well, this might be M. S and they do more tests.

But predictive autoimmunity is when you have the elevated antibodies more than you should have and you but you don't have any symptoms, you feel fine.

And so we think, well, I'm fine. It's all right. There's something on this piece of paper, the blood test. I have too many antibodies. Okay, whatever. I'm fine.

And if we think like that, we now know that within seven years, you're very likely to get a diagnosis of multiple sclerosis. And I don't believe physicians are measuring any of these antibodies against brain tissues as it's not part of the diagnostic criteria for M. S.

or or any of the you know, they're talking about MRI lesions. They're talking about spinal fluid. But you just mentioned some autoantibodies. Yes. Yes.

And where we got this idea was way back in 2003. It was Dr. Melissa Arbuckle at the VA. And she went she went to one VA center and looked for people with lupus, diagnosed with the autoimmune disease.

Lupus. And she found 132 people in this one center with lupus. Now, if they're at a VA center, they're veterans. If

they're veterans, they were in the armed forces.

When they were in the armed forces, they had their blood drawn many, many times in the Army or the Navy or the Marines, whatever. And what most people don't know is that the government's been saving and freezing almost all of that blood since 1978.

They've got tens of millions of samples of our service people's blood. Now, Dr. Arbuckle knew this, and she asked for permission to go back and look at the blood of the currently diagnosed lupus patients when they were healthy in the Navy or healthy in the Marines.

Can I look at their blood to see if they had any of these elevated antibodies? And they gave her permission. And what she found was that every single person had the antibodies elevated for lupus up to 11 years before they ever had a symptom.

Okay, hang on. And everyone who's listening here. We said this is the MMS and Neuro Immune Summit.

Early Autoantibodies and the Lupus Example

Right. Lupus has a lot of neurologic symptoms. A lot of these systemic autoimmune diseases have neurologic symptoms. So now I'm going to throw it back to you, Tom.

So let's continue that conversation. So 11 years they've been have, but they're in the military doing their military job, being physically active, very active and happy.

Healthiest can be young, strong, honorable. So how could they be making these autoantibodies and be able to be doing their vigorous job in the military?

Elevated antibodies kills off tissue. By definition, you're killing off more cells than you're making. When the level is elevated, you're killing off what you know.

There's a normal range, but when you're elevated, you're killing off more cells in your making. And so you're killing off tissue, killing off tissue, killing off tissue.

And that goes on for years. And you feel fine. Nobody feels when they've got elevated antibodies to their brain, you don't feel it. You can't tell what's going on.

Now I'm using the example of Dr. Arbuckle because she introduced us to this whole world of predictive autoimmunity in the New England Journal of Medicine in 2003.

And she showed that some of the there are seven antibodies to lupus and that some of them were elevated 11 years beforehand. All seven were elevated six years beforehand before they ever had symptoms.

And you see in the graph, every year they go up a little bit, up a little bit, up a little bit, up a little bit more. And then they plateau. And right around when they've plateaued, their symptoms are so bad, they they go to a doctor to see what's wrong.

Six months later was the average. They get the diagnosis of lupus. So the question is, when did the auto immune disease begin? And it began way back in what's called the prodromal period.

Yeah. When there were mechanisms out of balance, but no symptoms. And so if you don't have symptoms, it doesn't mean you're okay. Every auto immune disease takes years of killing off cells, killing off cells, killing off cells.

Before you get a symptom, then you usually live with the symptoms of something that's not so bad. I can live with that. It only comes once in a while and then it comes more often and then it comes more often.

And then eventually you go to the doctor and eventually get the diagnosis. But the the introductory message here is predictive autoimmunity is when you're looking for this stuff before you've killed off so much tissue that you have symptoms, that's predictive autoimmunity.

Now, again, everyone who's listening, I want you to know that people with M. S. or other neuro immune conditions, we often have symptoms for years, occasionally a decade before it finally comes to a diagnosis.

And I'm guessing, Tom, you to tell us that the auto antibodies are climbing and would people who who develop M. S., would they have an antiviral and might they have other anti brain tissue kinds of antibiotics as well?

Absolutely. Absolutely. Of course, with them, as it's usually myelin, basic protein antibodies or myelin oligodendrocyte antibodies. But the whole gamut of brain antibodies creating inflammation in your brain is killing off tissue, killing off tissue, killing off tissue.

And so when you look for it's I call it the canary in the coal mine, because coal miners in the 1800s would take a canary in a cage down into the mine with them with a candle.

They like the candle. Put it by the canary in the canary singing all day down there when they don't hear the canary. Someone went over to check immediately if the canary had fallen over dead in the cage.

They blew a whistle and everyone got out of there immediately. No argument. Doesn't matter what you're doing. Get out of there. Because the canary is much more sensitive to methane or carbon monoxide gas that humans can't smell.

And the result is you breathe that in enough, it'll kill you quickly. But the canary is much more sensitive to it. So the term canary in the coal mine has come to mean an early warning system.

So predictive autoimmunity is an early warning system of what's going on in your body while you still feel fine. So people you've tried going to your neurologist, your neurologist is not going to know to order any of these tests.

We're not trained in it. They it's not part of the diagnostic criteria. Right. Would you go to your primary care person, say you can get a bunch of autoantibodies, see if I've got any trouble brewing.

How would people check to see if they have any of this going on?

Environmental Triggers and Molecular Mimicry

Well, at this stage, usually people have to be educated enough to just understand the concept and say, well, this makes sense. Let's just see if the temperature gauge on my dashboard is in the red zone.

Let's just see if it's there. Yeah, most traditional doctors are not trained in this functional medicine. Doctors are trained in this, most of them. And they understand the principles.

So what I tell patients all the time, go to my website, download the information on the tests called the Neural Zoomer. Plus download the information.

Take it to your doctor and say, Would you please order this test for me? And if the doctor says no, you can order it on my site. It's fine. We'll send you the test kit and get a phlebotomist.

But then you have to find somebody to interpret it. It's it's it's more difficult. We want more of our doctors trained in how to do this. So if you find a functional medicine practitioner, you're more than likely to find someone who knows how to interpret these tests. No.

Yeah, I think if you are curious about these autoantibodies finding a integrative functional medicine practitioner who orders these tests and can help you identify, okay, these are getting high.

Then we need to be thinking about why is that happening? That's right. And what what might be driving these development of these auto antibodies. The the big picture concept in underscores, this is Ph. D.

level stuff, but the big picture concept is Mrs. Patient, you pull it a chain. The chain always breaks it. The weakest link, always. It's at one in the middle, the other end.

It's your heart, your brain, your miles in your liver, wherever you're weak link is. And the weak link is determined by two things is determined by your genetics and your antecedents.

Now, antecedents is a Greek word that means how you lived your life. So if you're eating tuna fish two or three times a week, you likely have mercury poisoning because most of the tuna has mercury, and mercury accumulates in the brain and other tissues, but it's notorious to accumulate in the brain.

But that's an interesting that will weaken one of your links and your genetics is the other. So it doesn't matter what the symptoms are. The mechanism is very similar that you're pulling on the chain.

The weak link in the chain is your nerves. In this case, because we're talking about mice, the weak link is your nerves. Okay, so maybe I've got some genetics for that.

I can't do anything about my genetics. Actually, you can. There is something you can do about your genetics. And the first thing to understand about genetics is you cannot turn genes on and off.

You cannot genes operate on dimmer switches and you can dim down the genes of inflammation and you can turn up the genes of anti inflammation. Professor Fasano, less ill Fasano at Harvard, has shown us this in his work is that you want to quiet down the genes of inflammation because it's inflammation.

I forgot to say this inflammation is the pull on the chain that's going to break the weak link wherever the weak link is. So you don't want to pull on the chain so hard, so you want to reduce the inflammation.

So the way you reduce inflammation is by identifying what is activating by immune system to fight this, you know, why? Why you by inflame, why is my immune system producing this in slow formation and hang on.

I'll remind everyone that inflammation is necessary for healing and for repairing to protect me against infection. If I'm going to get a virus, I need inflammation.

But inflammation can sometimes become excessive. So if I'm having a flare, my face pain now I've got excessive inflammation. And so what might be triggering my face pain?

Or when people are having M. S relapse, what kind of triggers could be going on? What what Professor Fasano tells us is that environmental triggers are fueling activating the immune system to try to protect you.

It's environmental triggers. What's that mean? Well, there's two types of environmental triggers. There's those things outside in the world that come into you, inside your body and the most common source of environmental trigger.

This is what's on the end of your fork. That's the most common. And then the other category of environmental triggers is what's already inside your body.

And with mice, we find that so often that people have bacterial infections inside of them toxic chemical accumulation, heavy metal accumulation inside their body.

That's still an environmental trigger that's activating the immune system. So you have to begin to explore the external environmental triggers and the internal environmental triggers.

Meaning do you have elevated antibodies to Klebsiella pneumoniae or to Proteus? And there are papers. Oh, oh,

don't. I'm not remembering his name. This wonderful elder researcher, King's College in London.

I'm hoping you will come back to me when he started writing about this 1978. You'll like this. Dr. Terry 1970 Jan uary 1978. It's my third week in my first genetics class in school and the professor comes in and he's got this paper and he's he's talking about this graduate student just published about this thing called molecular mimicry.

And he was talking about HLA B 27 that's a gene that all doctors learn about and that it was the association of a bacteria. When your immune system fights this bacteria trying to protect you called Klebsiella, trying to protect you if you have that gene, the weak link pulling on that, you get ankylosing spondylitis.

Yeah it it's it was remarkable. This was January 1978 and. Oh, wait, that's not no, it's ALS. It's ALS, not ankylosing spondylitis. And it was remarkable.

And that told us that your environment, it, depending upon your genetics, will set the stage for you to to bed if you have too much inflammation pulling on the chain, that's the link that's going to break HLA B 27 If you carry that gene and you get this bacterial infection that's very common called Klebsiella pneumoniae, I think it's the most common infection in hospitals that people get and this.

You know, bacteria have co-evolved with us again over trillions of generations and as a result, they evolved to have an amino acid sequence that looks similar to our internal structures.

Right. It's a very effective way to hide from our immune cells. And you're telling us that this molecular mimicry is a result of this amino acid sequence looking similar to one of our own internal structures?

Right. Right. So that is one of the mechanisms that may activate it. We have to remember that we have the same body as our ancestors. Thousands of years ago, the kidneys work the same, the bladder works the same, the joints have the same kind of college, everything.

Everything's the same.

Food Sensitivities, Testing, and Family Impact

And what our ancestors who survived were the ones who had the immune system that could protect them from the environmental triggers that they were exposed to.

And the environmental triggers that they were exposed to were bugs, parasites, viruses, mold, fungus and bacteria cells. It there was nothing else. And if they didn't have an immune system that could protect them from bugs, parasites, virus, mold, fungus and bacteria, they didn't survive and they did not reproduce.

So the ones that survived that had that ability to be protected, they passed that those genetics onto their offspring and it's come down to thousands of years bugs, parasites, viruses, mold, fungus and bacteria.

So when you put nail polish on your fingers, ten little fingers and ten little toes and you learn that the phthalates, the chemicals used to mold plastic, the phthalates are in your bloodstream in 4 to 5 minutes from the nail polish.

That's not toxic to humans. There is no study that shows that that amount of phthalates is toxic to humans. But this stuff accumulates in the body, and when it accumulates to a certain stage, now you have an internal environmental trigger.

You have a lot of phthalate in this example. Now you activate your immune system. But the immune system can only protect you from bugs, parasites, viruses, mold, fungus and bacteria.

That's all it can do because that's what our ancestors had to survive from. So when you're exposed, when you're pumping gas and you're smelling the gas, you're smelling benzene that's going right up your nose, straight into the memory center of your brain.

That's like, oh, yeah, I can smell the gas. Well, that's because it's in the memory center of your brain and it activates an immune response as if it's a bug parasite virus, small fungus or bacteria.

And you get inflammation immediately in that area of your brain trying to protect you from the bug parasite, virus, mold, fungus or bacteria. But it's benzene. It's gasoline.

So when you learn, for example, that small step work, you're pumping gas, you smell the gas, walk around to the other side of the hose. Now you're not downwind and you're not you're not smelling it anymore.

You're right. We have to learn all the little baby steps. We can take that. During. Exposures from exposures. So you mentioned phthalates, benzene. You've already mentioned mercury.

Are there other toxins that you talk? Are you talking to your patients about? Oh, yeah, there are. There are so many organophosphates are so very common to see glyphosate and the accumulation of glyphosate in your body.

So when you say everyone that's Roundup, that's a very big herbicide used in the growing of corn and soybean, it's used to dry wheat in many of the ancient grains as well.

Continue on. Yeah. Yeah. Any there are so many toxic chemicals in our environment right now that when a patient comes in with an auto immune condition, there are stages of how aggressive we are usually, unless they just want to get it all right now.

And so we start with the most common environment triggers is what's on the end of your fork. So we start there and we identify the foods that are triggering inflammation in their body.

And we we deal with those. We teach them how to change their lifestyle around foods. And then we can go into looking at heavy metals. We can go into looking at chemical exposures.

If you were involved in landscaping, you have a landscaping company, you've been involved tools or again on phosphates for 20 years and or if you're a mechanic, a car mechanic, whatever, your lifestyle, what the history tells us gives us a direction to explore.

Where are the triggers of inflammation coming from. And are you doing testing for food or is there a basic few core food groups that you eliminate? Or you're always doing testing the most common food that we find?

68% of the people. In my practice, I did 304 patients consecutively with a very comprehensive blood test between the ages of two and 90. Anyone that came in, irrespective of what their complaints were or we did this blood test that looked at sensitivities to wheat, dairy, corn, soy and egg.

And what we found was that 68% of everyone had elevated antibodies fighting wheat, 68% of them. If they had elevated antibodies fighting wheat, 26% of those people had elevated antibodies to their cerebellum.

That's why elders can't dance very easily, you know, and that they have to hold the rail walking up and down the stairs because their brain has been getting smaller and smaller for years.

That area of the brain that controls balance 20 to percent of those with elevated antibodies to we have elevated antibodies to myelin, basic protein, 22%.

In my practice got every test result to see it. So when people come in with symptoms of M. S or they have a diagnosis of M. S., the first thing we go after is to test accurately, and that's really important accurate testing for wheat and dairy.

Those are the two big ones. And there could be other foods also, but those are the two big ones now. Those are definitely the two big ones in my practice.

Then the third most common one is eggs after that. But again, it depends on the individual. So you do some assessments and then you personalize their dietary recommendations.

We personalize the dietary recommendations, but we don't give them a sheet of paper. You don't say, here, eat like this because people. So you're asking someone to change their lifestyle.

To alter their lifestyle, and they need hand-holding or guidance in how to do that. So you want to have a nutritionist, a registered dietitian, a health coach or a staff person who's been well trained on any of those categories of professionals to work with the patient because the doctor doesn't have time to go over every meal and what the options are for a good breakfast, you know.

And so there are specialists for that. So we always make sure our patients are working with a food selection specialist, whatever category they come from, whether it's registered dietitian, nutritionist, health coach, personally trained staff member.

And does this make a difference? People have they're living by themselves. They have a spouse. They have children at home. It makes a big difference. Yeah.

What does. A difference? And what we often try to educate, not try. We educate our patients that if they have a sensitivity to that particular food, likely it's a genetic sensitivity, which means you got it from somewhere and you're passing it on to someone else.

Brain Inflammation, Smell Testing, and Resources

So it's best to check the entire family and we always recommend the entire family get tested, whether they're sick or not, so that we can identify if they're throwing gasoline on the fire, creating more inflammation in their body, which will manifest somewhere down the road wherever the weak link is in their chain.

So yeah. So you're probably looking at food sensitivity issues for the whole family. Yes. Are you are you looking for autoantibody levels for the whole family?

Not at first. Not at first. Unless unless there is some evidence of some symptoms related to that we're looking for in the health history, we look for any evidence of mold.

Should we explore mold exposure? It's so very common now in our society because some of the building materials that have been used now for a number of years favor the development of mold when when it gets wet, you know, so you just you just have to check the rule is test.

Don't guess and in brain function there is a test that head and shoulders is above any others that we found. It's called the neural zoomer plus and it looks at 53 different markers of inflammation in the brain.

53 And quite honestly, Dr. Walls, we've not found a patient yet to come back normal on a first test on the follow up tests. They better or much better on the way to going to normal.

But everyone has inflammation in the brain now. It's because of the environment that we're living in and the the toxins that we're exposed to. My gosh, you know, it was in Mexico City in the 1990s.

The papers started coming out. There is a a doctor from Mexico at the University of Montana. And she's really focused on air pollution in Mexico City.

And in the 1990s, every dog they ought to see, every single dog had evidence of Alzheimer's type plaque in the brain, every single dog. And in the early to mid 2000, 2005 to 2010, the test came out the urine tests and the blood tests for children.

Every child they check has elevated inflammation in the brain. Every single one, and many of them are already

showing amyloid plaque in the brain. It's the air pollution.

It's the air you're breathing that may be contributing to the inflammation in your brain. That's why the smell test is such a great test to see if you're having some early warning systems of inflammation, the brain killing off cells in the memory center.

And why don't we explain the smell test for poor people? Because they can actually sort of do this themselves, themselves with their family. So what is the smell? Test it.

You know, I read an article in Life magazine, of all places, about losing your sense of smell is an early warning of brain deterioration. And I thought, well, this is interesting.

And they quoted the doctor, Richard Doty, at the University of Pennsylvania, who is the godfather of all this research about smell ID. And I called him up and I said, Hi, is Dr.

Tom O'Brien with the Institute for Functional Medicine. He said, What kind of medicine? And I said, Functional medicine? And then, well, what's that? He didn't know.

We started to see. Oh, that's very cool. And we started talking and and I said, so these tests for smell, does this work? Absolutely it works. And you just you scratch a sheet of paper almost like a lottery ticket, and you smell it.

And then there's four options, rubber leather, strawberry or gasoline? I don't know. And then you mark your answer down, turn the page. You do it again.

Mark the answer, turn the page, do another four, and there's 12 of them. And it's called the smell test. And when you and then you turn to the last page and the answer sheet is right there.

And so you check for yourself if you scored nine or lower. Correct. You've got you're losing your sense of smell. It's called hypoxemia. And even if you think you're fine, you're losing your sense of smell.

And it's a test of the memory center in the brain. Do you recognize this smell? And so if you've got hypoxemia and when we have patients test positive for this, every single patient does the neural zoomer plus and the test comes back and they've got a lot of inflammation.

Then you go into where is the inflammation coming from? Where are the environmental triggers, is it food, is it chemicals, is it heavy metals, is it mold?

Then you start exploring. So for many the smell test is the introduction into that. World to be getting it. Excellent. Well, Tom, this has been phenomenal.

You boys are a gem and a wealth of information. Tom, how do people find you? And to learn more about your practice and working with you. Oh, thank you.

The website is the Dealer.com and if you want to learn more about the smell test, it's the Dealer.com forward slash smell. And I put five articles there that you can download, read them, take them to your doctor and say, you know, I don't smell cinnamon the way I used to.

And I've read and here's some articles that say this could be an indicator of a problem. Can we check further, please? But it's the Dealer.com. That's the that's our website.

We've got videos and handouts and lots of information for you. And anyone who's listening. It is a phenomenal resource. I certainly encourage you to go check out Tom's website.

He's got great information, great resources and can help support you on your healing journey. Thanks, Tom. You are a gem. Thank you so very much. Thank you, Dr.

Wahls, for all the work you're doing and for doing. This summit, I know is going to help thousands and thousands of people.