THE CANARY'S SONG: A Primer On Neuroinflammation And Neurodegeneration Early Biomarkers Of A Brain On Fire Transcript

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Introduction to the Summit and Dr. Ou2019Bryan

– Hello everyone and welcome to the microbes and mental health summit. I'm Dr. Miles Nichols and today I'm with Dr. Tom O'Bryan, who's amazing speaker, author pioneer in the field of functional medicine, food, sensitivities, auto immunity and many interesting topics.

Today we're gonna be focusing on our talk is the Canary Song, a primer on neuro inflammation and neuro degeneration, early biomarkers for brain on fire. I'm really looking forward to this talk Dr. Tom. I'd like to give you an opportunity to say just a little bit about how you got into functional medicine, researching neuro inflammation research in neuro degeneration. – Oh okay, well thank you.

It's a pleasure to be with you and thanks very much. Well, you know, it was 1979 and my ex and I could not get pregnant. I was an intern at the time we lived on campus and married housing and I called the seven most famous holistic doctors I'd ever heard of, was able to reach them.

And I asked them, what do you do for infertility. They all told me what they do. And I wrote it all down, put a program together. We were pregnant in six weeks.

My neighbors in married housing heard about this and they have been through artificial insemination and nothing had worked and they asked if I'd work with them and I said well you know, I don't think it's gonna harm you in any way. Okay.

They were pregnant in three months. And so we're now four months pregnant, just hard to trot, you know, until the whole world of this whole thing about holistic health care and and and our friend would have a sister who lived in Wisconsin. She drive down to Chicago.

I was in school in Chicago and she come to my dorm room and I treat her out the dorm room and I was helping people with infertility recurrent miscarriages before I got into practice.

But that just set me off, you know, in a direction. There's not much in medicine, that's all or every, but this was every, every couple that had some type of hormone related issues, whatever they were, whether it was premature ejaculation zones, uh recurrent miscarriages, uh infertility PMS it didn't matter every couple had as a component of what was going on for them that they were eating foods that they did not know were a problem for them causing inflammation in their body and they just didn't know because they didn't get sick when they ate the food. We think if we eat something and our stomach doesn't hurt, it's fine. But what the science tells us is that for every one person that gets gut symptoms there ate that, don't they get brain symptoms or joint symptoms or skin symptoms? They get acne, they get psoriasis, they get rheumatoid, but they don't get gut problems.

So if you're determining whether something is safe or not by whether you heard after you eat it, you'll get it right one out of eight times, You get it wrong, seven out of eight times.

How Functional Medicine Led to Food Sensitivity Research

And so that launched me even before I was out in practice to always be checking um people's food choices and the most common food that we found over and over again was wheat.

So I started reading the literature on gluten and on wheat and just kept dropping my jaw again and again when you read the science from Mayo clinic reversing cardiomyopathy, which is your heart muscle's not working very well

and um it's a life threatening situation, much of the time completely reverses on a gluten free diet or when you've got hepatitis in some case completely reverses on a gluten free diet.

Not every case, but some cases, so it would just blow my mind as I would read more and more of these studies and none of my colleagues knew this, they weren't exploring the literature, were all busy opening practices and trying, you know, to pay the bills and get our message out to the world and all that.

And so I put together an eight hour training program and I was lucky enough to be sponsored by a nutrition company and I did it in 26 cities around the world in 2008 And eight hour days and it was over 300 studies and everyone sat there and just went, they had no idea about any of this and it really helped to accelerate an awareness about wheat-related disorders and about gluten and that set me off on my entire career and it's been over 40 years now, uh talking about and studying functional medicine. – Yeah, well, I remember we just were talking earlier about how we met about seven years ago, where we were both giving a talk at a conference and to nutrition professionals and you were going into the autoimmune link for some of the food things and I was watching your slide deck and very, very interesting, you bring forward some amazing research.

So I'm curious what would be a couple of the main big picture overview concepts or principles that you feel would be really important for the audience of this summit.

The microbes and mental health Summit. To understand many of the talks, not just our talk here, that what would be really important that you want to make sure people understand. – Yeah, thank you.

It's it really is because, you know the topic, microbes and mental health. I mean the general person, you know, say, what, what kind of nonsense is that?

What do you talk bugs in my gut, affecting my brain. So there's two concepts that are really important to understand. The first is that the National Institute of Health tells us that 14 Of the top 15 causes of death in the world today are chronic inflammatory diseases, everything except unintentional injuries, an accident.

Everything else of the top 15 causes of death are chronic inflammatory diseases. Well, what does that mean? It means It's chronic, it's going on for a long time and you don't know about it while it's going on?

And it's inflammation that's causing the disease. If you pull it a chain, the chain always breaks at the weakest link. It's at one end the middle, the other end at your heart, your brain, your liver, your kidneys wherever your genetic weak link is and the pull on the chain is inflammation.

So you don't want diabetes like your parents or the family history or Alzheimer's or breast cancer. Don't pull on the chain so hard. Well, what does that mean? Learn how to live in anti inflammatory lifestyle. That's that's one big Kahuna concept.

Okay, the next one, what is this thing called inflammation, inflammation is the result of your immune system being activated? Now your immune system is the armed forces in your body.

It's there to protect you. There's an army, a Navy and Air Force, the marines, a Coast Guard, we call them I G A, I G G, I G E, I G M. They're just there to protect you. So when you have access by the way, inflammation is not bad for you, we wouldn't be here if we didn't have inflammation.

Access inflammation is bad for you and its excess inflammation that kills off cells wherever the weak link is in your chain. So the question is, what is your immune system trying to protect you from?

When it gets activated? The question is why is it activated? What's it trying to protect you from? And to answer that question, we go to Harvard Harvard Medical School and Professor Alessio Fasano.

Professor Fasano is a professor of medicine. Harvard Medical School, professor of nutrition. Harvard School of Public Health. The Chief of Pediatric Gastroenterology, mass General at Harvard, the director of the celiac

Research center. Harvard, the director of mucosal immunology center. Harvard five titles of which anyone title is a lifelong goal for someone at the top of their game.

He's got five, we think he's gonna win the Nobel prize we truly do because it was he and his team that identified the mechanism that causes this thing that we now refer to as leaky gut.

And he identified it in 1997 and he's been publishing papers now for 25 years on what is it? How does it work? When is it involved, what autoimmune diseases is involved with?

Many, many hundreds, literally hundreds of papers. Professor Fasano is always so careful of what he says, so that he's not misquoted and the title of the paper that he published almost two years ago now says it all and this is what they're teaching at Harvard Medical School.

The title of this paper is all disease begins in the quote leaky gut, The role of the proteins zonulin in the development of chronic inflammation? So all disease begins in the gut. And he talks about the five pillars that he refers to as the perfect storm in the development of chronic inflammatory diseases. Now, 14 of the top 15 causes of death are chronic inflammatory diseases.

Now we have what they're teaching at Harvard Medical School right now. As where does the inflammation come from? That creates the chronic inflammatory diseases.

And the five pillars in the development of chronic inflammatory diseases includes number one genetics can't do anything about the genes that you've been dealt this time around.

That's the deck of cards that you got. But because you have the Alzheimer's gene or the breast cancer gene doesn't mean you're getting Alzheimer's or breast cancer. It means you pull up the chain too hard.

That's the weak link where it might show up. There are some genes that unfortunately if you have the gene for her Huntington's disease or um cerebral palsy, it's likely you'll get that. But most of the genes don't determine your getting a disease. They determine this is a weak link in your chain. If you pull too hard and of course the poor and the changes inflammation. So number one is the genes number two environmental triggers. Now, what does that mean?

Environmental triggers are what the fingers on the dimmer switch of your genes, you can't turn your genes on and off. Doctors still some of them say, well, let's turn off those genes, You can't turn off genes.

Genes operate on dimmer switches And what you can do is dim down the genes of inflammation. So you don't produce as much inflammation and you can turn up the genes of anti inflammation. There's about 1200 genes for inflammation and you can dim them down. How do you do that?

The environmental triggers the things from the environment that get inside your body activate your genes to either calm them down or ramp them up. So what are environmental triggers? The most common ones?

What's on the end of your fork? That's the most common environmental trigger that talks to your genes.

Inflammation, Immune Activation, and Leaky Gut

So when you eat ding dongs or french fries, you're talking to your genes and the result is for days and sometimes weeks afterwards you got more inflammation because you ate two orders of french fries and those bad fats are just doing their job on your system right now, more inflammation, more inflammation.

The other part of environmental triggers is what's already in your body. The toxins that we have have accumulated in the heavy metals that are in our body there.

Talking to your jeans all the time nonstop and you have to learn what toxins. Am I sensitive to that I'm exposed to in

my environment. If there's mold in your house, you've got to clean that up and I'm sure we'll have experts here talking about mold in great detail. That's what you're breathing in or what's on the end of your fork, You're eating wheat and or whatever the food is you're eating.

Turning on the genes of inflammation, you aren't going to calm down the fire that's going on in your body right now, right? And then we've got all these toxins that are stored in our body because of this toxic world we live in now and you and you have to learn about that and there will be speakers here, I'm sure that we'll talk about that.

But that's number two environmental triggers. Number three, when there's an excess of environmental triggers activating inflammation because it went down into the gut, 70% of the immune systems in your gut because that's where we get most exposure. So you need the protection there.

So that's where you get a lot of in information is in your gut. And what happens when you have that inflammation in your gut? You kill the good guys and the bad guys just rear up.

They love inflammation, they just thrive in an inflammatory environment in your gut and you kill the good guys. So you get what's called and this is a geek term, dis bio sis it means too many bad guys. Not enough good guys.

When you have dis by osmosis in your gut, too much inflammation in your gut. That's number three, it creates number four, what's number four mrs patient?

Your digestive system is a two that goes from your mouth to the other end about 2025 ft long, winds around in the center there and the inside of the two is lined with cheesecloth.

Now, if you consider a donut, if you could stretch a donut out one big long donut and you look down that donut, that's your digestive track. So when you swallow food and most of us don't chew very well.

We take three or four, choose and guzzle as opposed to, you know, 10, 15 20 choose for a hamburger will take three or four and swallow it down that food those those clumps of food can't get into the bloodstream there in the tube and the cheesecloth will not allow them to get into the bloodstream because the food's gotta go through the donut, it's got to go through the cheesecloth to get into the bloodstream to be the raw material to make new bone cells and brain cells and muscle cells.

But those proteins have to be broken down really small. First think of a pearl necklace proteins are like a pearl necklace and the acid in your stomach and does the class of the pearl necklace.

Now you have a string of pearls and your enzymes act as scissors to cut the pearl necklace into smaller clumps of these pearls, these proteins and they're called peptides. Snip snip snip snip snip until you're down to each pearl of the pearl necklace. That's called amino acid.

The amino acids go right through the cheesecloth into the bloodstream and they go off in the bloodstream bloodstream is just a highway, you know there everything's going the same direction, but everything's bouncing around in there like bumper cars, you know, but now you've got the raw material to make new muscle cells and bone cells.

But until it's been broken down small enough, those molecules, big molecules have to be broken down small enough to get through the cheesecloth. But when you have number three dis by osmosis, the inflammation in the gut, causing too many bad guys, not enough good guys, you tear the cheesecloth when you tear cheesecloth. Now bigger clumps of food, get through into the bloodstream before they're supposed to get through into the bloodstream.

They're called macro molecules, big molecules, tears in the cheesecloth is leaky gut, that's what leaky gut is. And now these macro molecules get through into the bloodstream and they're off on the highway inside your body and your immune system in your bloodstream says, whoa, what's that? That's not something I can use to make new bone cells or brain cells, I better fight that. Now you make antibodies to chicken or two tomatoes or to broccoli or

two peaches. It doesn't matter what the food is, if it got in through a leaky gut, it's a macro molecule in your immune system trying to protect you is gonna fight that thing and that produces number five chronic systemic inflammation, 14 of the top 15 causes of death are chronic inflammatory diseases that go on for years and you don't know that's why Professor Fasano's article, the title all disease begins in the leaky gut?

So if there's anything you're going to do to get healthier, if there's only one thing you're gonna do, it's build a healthy, diverse microbiome in your gut.

Get more of the good guys and not so many bad guys and you change the direction of rheumatoid arthritis of type one diabetes and type two of lupus of hashimoto's thyroid disease of alzheimer. It doesn't matter what the condition is. You have to reduce the amount of inflammation if you want to change the direction your health is going and to reduce the amount of inflammation, you have to remember all disease begins in the leaky gut.

That's like basic and it's exciting that that's what the medical doctors are getting now in their training at Harvard and I'm hoping at other schools, but I don't know, but because Fasano is in charge there.

So they're getting that their understanding those basic premises before they come out into Practicing Patience. – I love that big picture framework to give people these two concepts, one, that chronic inflammatory aspect to 14 of the 15 top causes of deaths and most if not all chronic disease is having an inflammatory component. But you briefly mentioned that inflammation isn't all bad and I want to just zone in on that a little bit before we go on and to talk about because why wouldn't I? You know if I'm thinking about this from the perspective of someone who hasn't heard any of this before, What wouldn't I just take a nonsteroidal anti inflammatory and shouldn't that help with all the disease The process is really good.

Just a little bit about that. – Sure you bet. Really good line of thinking because I would you know if I knew just the big picture I would take an anti inflammatory because my doctor would tell me to because that's the way they think we live in a world of bugs, constant exposure in this room that I'm in in my office there are millions.

I'm not exaggerating of bacteria in the air on the surface of my desk on the leaves of the plants in the room were exposed to all this all day long. So we've got these guardians there to protect us and they're called toll like receptors but they're throughout the body there in the nose because when you're breathing there in your gut because The most common source of inflammation is what's on the end of your fork.

So they're 70% of the immune systems in the gut. And it's the toll like receptors that turn on a lot of that that we're constantly exposed to bacteria and viruses and parasites in our world. So you have to have a well functioning immune system to protect you if we did not have a well functioning immune system, we wouldn't live. I don't know how long I've never seen a study theoretically how long before If you shut down somebody's immune system completely, how long do they live? Not very long.

They can't because the amount of contaminant, the amount of infections would be huge and that's the basis and there's so much reading people can do on what's called the hygiene theory that in the sixties and seventies, when I was a kid growing up in the sixties the commercials were for Mr. Clean. Mr. Clean had these big biceps and this bald head and you know, he would clean anything. He killed the bugs.

And so we grew up believing you gotta kill these things, you got to get rid of all this stuff. And of course it's caused the exponential rise in asthma and allergies and eczema more than ever before in history because we've tried to sterilize our our environment and you can't do that.

It's really important to have an immune system that's functioning normally to protect you. – Yeah. Yeah, it is asthma allergies. These are things I grew up with unfortunately and in in my childhood and I took a long time for me to understand these connections and start to work on these connections.

But luckily I've been able to reverse those issues and I think so many people aren't understanding the importance of the immune system, how to work on the gut and the relationship between the gut and microbes and immune function and these chronic strep throats and I would get antibiotics repeatedly and at the time that was sort of what

people thought would be the best approach. And it wasn't so concerning to overuse antibiotics, even in ear infections where they're usually viral.

So this hygiene hypothesis was such that I even went to the extent of helmet therapy, which most people won't, but I decided to intentionally infect a certain kind of worm and that shows regulation of the immune function and there's real good data about that being connected. The old friends hypothesis of that some of these things that we used to have exposure to, that we don't anymore helped regulate and manage immune function.

But going back to Nsaids and why not take an Advil? So you talked about toll like receptors in the immune function. So how does that connect with someone who says, oh well I'm in pain.

I'm just gonna take an Advil every day. – Look, if you need to take an Advil for your pain, you take the Advil, you have to function, that's okay. But you don't live there. You explore why do I have pain and you you just start exploring? You'll get the answer, you won't like it probably because what you'll find out is it's your lifestyle, it's something that you thought was okay to do something you thought was okay to eat that's causing your pain for every one person that gets gut symptoms.

There are eight people that don't they get joint pain or they get depression or anxiety or they get skin problems. They don't get gut problems when they eat the food. Just go to google and type in gluten and psoriasis. Here come the studies that 14% of psoriasis patients go into complete remission, clean it up completely when they go gluten free.

So it's not everybody, but it's some people and others, it's dairy or it could be soy or eggs or it could be too many bad bugs in the gut. My point is, you take the meds if you need them so you can function.

But you keep exploring why do I have this inflammation? What is my immune system trying to protect me from? – Yes. And I'll just add that the nonsteroidal anti inflammatory drugs work on the cox two mechanism, which helps with acute inflammation, but it doesn't help resolve the chronic inflammation.

So it's not gonna reverse the disease process. It's going to temporarily curb off the acute inflammation, but it's not going to resolve the chronic inflammation.

In fact, it can help prevent the full resolution of chronic inflammation at the end steps of that. So, and there can be impacts on the liver impacts on the kidneys. So, finding the underlying cause while you're doing what you need to do to feel okay, finding the underlying causes here, I think is really important. And so, so you're mentioning that we have inflammation, chronic inflammation as a root cause for 14 and 15 of the at least a component, not necessarily a cause, but a component of 14 of the 15 top causes of death.

And then you introduce Dr. Fasano's concepts around how there's published peer reviewed clinical trials showing data that suggests that yes, there's a genetic predisposition but there's also environmental triggers.

These environmental triggers. Many of them are food, some of them might be toxins like mold toxins, some of them might be neurotoxins from chronic infections like Lyme disease, but these of course food is an easy one to modulate and to change. And then you're talking about, okay, then there's this this bio sis that occurs in the guts of the microbial balance gets dis regulated. And then you're saying that after that, that there's this sense of this permeability, this tear in the cheesecloth, this ability for those bigger protein structures to make their way through into the bloodstream and then the immune system becomes attacking.

Oftentimes those bigger proteins as foreign things that can then lead to autoimmune diseases. And that fifth there's this chronic inflammatory aspect. And so this is this big picture framework and you mentioned this connection with auto immunity.

So how could it occur that that if we're bringing this back to sort of brain function, we're looking at that that brain on fire and we're looking at auto immunity, how does this connect with brain function and brain on fire?

– Oh, that's a really good question. Uh And I've got a couple of slides to show you on this because the one that terrifies all of us is Alzheimer's and if it's okay, I'd like to show a couple of slides. – Yes, please do.

– Okay. I'm gonna share my screen here and we're gonna go here. Good. And the Alzheimer's institute tells us that one out of three seniors will die with dementia. It's one out of three now.

Why NSAIDs Donu2019t Solve the Root Cause

That's just a horrible statistic. This one really caught my attention though. This was one that came up um uh in February of 2020. It didn't get the attention that it needed because that's when the virus started coming out and everyone was looking at that and scared about that.

But this is blue cross blue shield, arguably the largest for profit health insurance company in the English language. So they're all about profits and how much expense they have. And they published this one and they showed us that in a four year period, the number of people with early onset dementia went up over 200% in four years, over 200%. These are the most current statistics we have and then they broke it down by age bracket.

Look at this Of 407% increase in the diagnosis of Alzheimer's in 30 to 44 year olds in four years. This is the real pandemic that's going on right now that our brains are on fire and it's such a big problem, Our government, uh, health and human services brought in world experts um on Alzheimer's and they put them in a room and said help us figure out what we need to do here.

What is this thing Alzheimer's and how are we gonna stop this incredible increase of what's happening to our elders and now earlier ages because it's going to bankrupt Medicare and bankrupt Medicaid.

And so this is what they came, they came up with this drawing and I saw this and I thought oh this is priceless. If people understand what they're saying here, this is priceless. So I'm going to explain this to you.

It'll take about four or five minutes to explain this. So, to begin with, we have antibodies from our immune system for every tissue in our body. Why? When for example, thyroid is a really common one. When you're doing a blood test for a patient who has thyroid symptoms, You often include thyroid antibodies to see if they have a thyroid autoimmune disease.

And there's a normal reference range from the laboratory for thyroid antibodies and depending on the lab, it's usually somewhere around up to 30 for antibodies is okay, why would you have any antibodies to your tissue?

Why would it be okay to have any antibodies to to your thyroid or to your brain or to your joints or to your skin because MRS patient, you have an entire new body every seven years?

Every cell in your body regenerates every single cell. How does that happen? You have to get rid of of the old and damaged cells to make room for new cells. That's the only way.

Right. And it's the immune system that gets rid of the old and damaged cells. Let's clean up the debris and make room for the new cells so that's normal.

But what happens? Our lifestyle starts creating this inflammation and we lose tolerance to the foods that we really shouldn't be eating. And we lose tolerance to the amount of bacteria that were exposed to or mold.

Or we lose tolerance to the amount of toxic chemicals we're exposed to. Or we lose tolerance to the E. M. F. S. From the radiation or emotional too many stress hormones. The point is we lose tolerance when we lose tolerance. Now you get an increased level of antibodies to these foods and because of a couple of different mechanisms you start making antibodies and you get this thing called a leaky brain, leaky, gut leaky The brain. Now this is what I teach doctors.

So it's it's a little bit technical but just stay with the big picture here. This is going on. So we keep eating the food

because it doesn't make us sick. It's affecting our skin or our thyroid or our brain. But it's not it's not a disease yet.

But the mechanisms going on with this inflammation and this goes on for 20 years. This comes from health and human services on where is Alzheimer's coming from.

This is going on for 20 years and if you see the other red circle, there's no symptoms. But you're killing off brain cells, killing off brain cells. Killing off brain cells. This doesn't stop because you keep eating the food or you keep breathing the air if there's mold in the house and that goes right up to the memory center of your brain or whatever the environmental triggers are that Cassano talks about and there are many on the list and you just have to start exploring.

Is it this is it, this is it. This is it this until you find the right ones. My point though is it's going on for 20 years and you feel fine, you don't have any symptoms at all that you know of.

And when did the loss of tolerance begin? When did you start getting an increase in in antibodies right there?

Alzheimeru2019s as an Early Brain Inflammation Warning

When you start, when you lose the tolerance to food or to environmental toxins or to stress hormones, all of these on the bottom when there's too much of that more than your body can handle.

That's when you lose tolerance and you keep making more antibodies, you're immune systems getting activated and that goes on once again for 20 years, then you develop what's called mild cognitive impairment.

That's when you walk out into the parking lot, the shopping center and say wait a minute. What row is my car parked in? Where did I put my keys. That's when you have these little moments where you're not remembering things And it really terrifies us and we think, and we make jokes. We say, I'm getting old. I don't remember the way I used to.

How old are you? Well, I'm 36. That's not supposed to happen. That is a symptom of excess inflow. No, it's just too much stress. I have too much stress in my life, My brain is fine.

I just have too much stress. No, your brain, your memory center in your brain is not functioning properly. And And there's inflammation, very likely inflammation going on.

And this goes on for seven years. Now, we're at 27 years. So 25 to 30 years and now you've got some symptoms and you joke about them once in a while. But the mechanism continues killing off brain cells, killing off brain cells, killing off brain cells until eventually it goes to the next step of mild Alzheimer's, that's for two years and then moderate Alzheimer's and somewhere between mild and moderate. That's when patients are saying, oh man, I better do something about this and you're trying and you're trying to salvage what little of the brain is left And that's what I wanted to show you here was health and human services tells us this is going on for 25-30 years before you have a big problem and nobody's paying attention to this because we're scared.

We're scared. You know, everybody knows someone they had a heart attack and they survived, they changed their diet, they started exercising they feel better than they felt in years.

Most of us know someone that had cancer went through the protocols, put it into remission and they're doing great. No one knows anyone diagnosed with the brain deterioration disease, that's doing great. How many people on anxiety medication are doing great, They're just trying to survive because already there's so much damage that's been occurring that their system can't quite function, right?

And I'm hoping that one of the ah ha's that come out of this talk is that people realize, oh my God, That just makes sense. Okay, that's why there's a 407% increase in the diagnosis of Mild Alzheimer's in 30 to 44 year olds, is because the environment is so toxic today, compared to any time in the history of humanity were exposed to these chemicals all day every day and they're affecting our brain.

Then our immune system trying to protect us is causing more and more inflammation, trying to protect us. And we have to learn about how do I reduce the environmental triggers that are causing all of this inflammation in order to calm down the destruction that's going on in our body.

That's going to manifest as a chronic inflammatory disease. – Now, I want to be sure that at some point before we can close the talk, we also get to, well, okay, we've reduced the attack against tissue.

Can we repair the damage that was done? I don't wanna go there. I don't want to go there yet, but I do want to do that. And then and then I'd like to point back to that.

We're talking about the immune system attacking tissue in the brain and that's really important concept to understand there's this chronic inflammatory response And we're talking about neurodegenerative diseases and there are three classes really of disease processes that if people age, it's sort of like they're all three progressing and one of them is going to get to a person first.

There's the cardio metabolic diseases where heart disease ends up being usually the one that heart disease and diabetes and metabolic diseases tend to be one category of the three That many people. In fact, that would be number one causes heart disease. And then cancers would be a second class.

And then a third class would be neurodegenerative diseases. And these three really it's sort of like they progress there's thought that atherosclerosis begins maybe at about age 5-10, like very early and it's just a slow progression.

And here we're talking about the neurodegenerative disease and also cancer cells are continuously present and a little bit of that is present and the body is working it out and repairing and it's not becoming a bigger issue when the body is functioning well.

And then we have this 20 year progression here before even mild symptoms of cognitive impairment. And I think it's people can understand right now the cardiovascular preventive side that oh if I see blood markers that are showing that I'm having prediabetes, maybe I should do something about that now.

Or if I'm having markers that suggest that I'm having inflammation in the heart, especially the L. P. P. L. A. Two or LP little A. Or one of these that are showing that there's heart issues like I should do something now because that could become a big problem later.

But not a lot of doctors, not a lot of practitioners, not a lot of people are saying let's measure the antibodies against my brain and let's see if this process is occurring at an early and there's the a probie genetic that some people are are looking at at that and and and that might be to some degree helpful to look at the the sorry, the ap genetic the 44 the 43 or the 33 or the 32.

– Right. – Right. So the apoe could be a say, oh this might be a weak link and it might make a stronger case for for testing for antibodies. But why do you think it is that the antibodies aren't being tested more regularly and that that we're not looking at bringing antibodies in medicine right now – In the world of immunology.

It's not commonly accepted the whole the whole concept of predictive auto immunity, it's only the cutting edge immunologists who go to the world conferences and hear from people all over the world about how you can identify years before someone gets a diagnosis of an autoimmune disease.

Are they going to get this or not? What's the likelihood We now know that, for example, Hashimoto's thyroid disease, one of the most common autoimmune diseases that people get. You can identify it seven years in advance before, especially postpartum if they have these elevated antibodies, there's a 92% positive predictive value, you're getting hashimoto's we know with scleroderma there's two antibodies, it's if you have either of them elevated, it's 100% you're getting scleroderma in the next 25 years and and all of that all most of the autoimmune disease. All that research has been done.

And the concept is you look in advance now because if you've got the elevated antibodies attacking your tissue

now, it's gonna take a number of years before you kill off so much tissue that the symptoms begin. But if you identify it now then you ask the question, where is the inflammation coming from that's causing these antibodies to get elevated. And then you start exploring is it foods, is it? Listen just google B. P. A.

And thyroid. Most people have heard of B. P. A. It's a plat it's a salad a chemical used to mold plastic. It's in water from plastic water bottles and many many other sources.

And the B. P. A. Molecule can stick to your thyroid and then your immune system says what is that? That's not thyroid. I better fight the that and the immune system attacks that BP A molecule.

It damages the thyroid at the same time collateral damage. So you make more antibodies to get rid of the damaged thyroid cells. But you're drinking water from plastic water bottles every day.

You get more BP A. Exposure more BP A. Connects on your thyroid. If that's the weak link, more antibodies are made to the B. P. A. And this is called a neo complex of B.

P. A. Thyroid. This molecule and you damage collateral damage on your thyroid. More thyroid antibodies and this thing becomes self perpetuating. Eventually you've got an autoimmune thyroid disease. And there's just so many hundreds of examples like that that but the point is when you do the proper tests, especially for your brain, every new patient that comes to me, There's two types, they do, one's called the wheat Zoomer and the other is called the neural Zoomer plus because you zoom in on the problem and we look at 53 different antibodies to the brain is your brain on fire. I don't care if they come to me for joint problems. I'm still gonna do the neural Zoomer plus because it's a pandemic out there right now of brain deterioration diseases.

And so we're going to look to see is your brain on fire right now Because the brain is the Canary in the coal mine. Now, what do I mean by that? It was coal miners that used to take Canaries in a cage down into the mine with a candle and they just let them sing there all day.

And when they stopped hearing the singing, they went over to look if the canary had fallen over dead, they blew a whistle right away. Everybody got out of there immediately because Canaries are very sensitive to methane and carbon monoxide and it'll kill them quick before it affects humans. But that also will kill humans.

So they blow the whistle. So carrying the coal mine means an early warning. So when you have elevated antibodies, you have an early warning that your tissue is at risk right now and you don't suppress the immune system. What you do is say, why is my immune system doing this? And that's the world of functional medicine?

And that's what we teach. Our doctors all over the world is how do you determine what's the checklist that you have to look at? You get their diet history, what they eat there, family history.

Their birth history. Was mom's sick during the pregnancy or did mom have antibiotics at birth? So baby didn't get the good guys in the gut. You know, was it a C section birth? All those kinds of history things suggest to us.

Okay, well let's look over here first and see if this is a problem. So you never do tests in the dark kind. I'm hoping you're gonna find something. You order tests based on what your clinical acumen tells you from the history, from the family history and the person's history.

And you just start investigating where is the inflammation coming from? Why is my immune system trying to protect me? Unfortunately, what you're told to do is take a nonsteroidal anti inflammatory like Advil or Tylenol or an aspirin and forget about it. And you feel a little better for a while?

Maybe. Maybe not. But you're still killing off brain cells. Killing off brain cells. Killing off brain cells. So let's bring it back in a little bit here because we could go on for hours on this.

It's my joy to talk about this. So what this is telling us though all disease begins in the gut. So you have to identify what are the triggers that are setting off the inflammation.

And the first thing you do in terms of protocols is so that the first thing is stop throwing gasoline on the fire. So you have to identify how am I doing that? Where is the gasoline coming from?

Is it wheat or dairy or both? Or soy or eggs? I mean is it foods in general that are doing this? Do I have bad bacteria in my gut? I have infection in my gut and here's one for you. Anyone that's got sinus problems or recurrent ear infections or acne and skin problems. You have to clean your shower heads because showerheads hold they produce a biofilm and bad bacteria live up there and then you turn on the shower and you get blasted with millions of bad bacteria.

Right? And so you got recurrent sore throats like you did as a kid you had recurrent strep throats, right? Or you've got nasal problems or congestion or whatever it should be.

You just have to go down the checklist and looking to see where is it coming from with that you always rebuild a healthy microbiome. So we test our patients for the microbiome. What's the environment like in there?

How many good guys do they have? How many bad guys? What bad guys do they have? What's gonna kill those bad guys called sensitivity profile? You know?

And so you just start getting the information and you begin the process of turning around the direction this body is going in right now. – That's wonderful. And Doctor Tom there's so many directions I want to go and we do need to stay focused but I do want to just quickly.

You mentioned the plastics and you mentioned BP and you mentioned that cross reactivity with thyroid and I was researching for a talk I was giving to practitioners about detoxification and I was looking at microplastics and I came across a statistic that showed that on average in the year and they can measure about 5g of microplastics per week per person, meaning it's about a credit card worth of plastic that people are eating on average per week as microplastics – Wow. – And it may be, it may be even worse that it's like, – Wow, your tissue can't function the way it's supposed to when it's clogged, clogged up with all this, it just can't function right?

You know, just imagine anything in life. An air filter. Uh it can't function properly when it's all plugged up and your air gets dirtier and dirtier. Your blood gets dirtier and dirtier.

Um We're exposed. It's overwhelming when you start to learn how toxic our world is today. But it's the only way I believe that you can be successful in reversing the direction of your health.

It's the only way is that you become your own advocate and you begin learning how do I live a healthier, less inflammatory lifestyle and you're gonna learn the cleaning supplies in your house. They got to go get them out of there while just use them up. No, you don't.

You get rid of them now and you use healthier cleaning supplies and you learn about foods and the problems with chemicals and foods and the foods and the chemicals and foods that kill the good bacteria in the gut.

And you learn artificial sweeteners. I don't care if it's pink or blue but they kill the good guys in the gut and you get more of the bad guys rearing their ugly head and you get more inflammation so there's just an overwhelming amount to learn.

But there's the secret to success. The secret to success is the subtitle of my book. My my most recent book is called You can fix your brain and I go through everything we've talked about here today and the test the predictive autoimmune test for the brain, what they all mean and all of that.

And there's 36 I believe it was 36 tips of things to do. Like get rid of the tupperware, get glass storage containers. Here's three U. R. L. S. For glass storage containers because when you store chicken in a plastic container the next day the chickens got pallets in it just like B.

P. A. And you're feeding your family minute amounts of these toxic chemicals. So the subtitle of the book is just

one hour a week to the best memory, productivity and sleep you've ever had. And what I mean by that is every Tuesday night after dinner or every sunday after services whenever you want.

Autoimmunity, Environmental Triggers, and Brain Antibodies

But you tell your family every week for this hour don't bother me. I'm gonna learn a little more of how we can be healthier as a family. And then you go to my book and you get the U. R. L. S.

First glass storage containers. Miles kimball dot com and amazon and whatever the third one was. I don't remember You know and you so those are okay I like those and you order three round ones and two square ones and one for the pie.

You pay with your credit card, hit send and you're done. It took an hour and you're done for the week. But next week you were shocked when you read in the book about nail polish.

The pallets are in your bloodstream in 4 to 5 minutes. And but here the U. R. L. S. For organic palette free nail polish and you order and the next week you learn about house plants and how houseplants clean the air of the toxins in the air. Your plastic blinds on the windows, they out gassed pallets into the air. Your kids are breathing it every day 24 7 you have to clean the air in your house and so you just learn.

But every day every week you allocate one hour, one hour. That's all that's manageable in six months. You've spent 26 focused hours in changing the environmental triggers that you and your family are exposed to.

Number two in Fasano's five pillars. You've you've reduced 26 different environ triggers the main ones and people are seeing they see you in church and said wow what happened to you? You look great.

Well I've been allocating one hour a week and getting rid of the plastic storage containers and changed my nail polish and got plants in the rooms and and people are wow, you look great and that's the way you do it. That is the only way to be successful and not be one of the statistics because this information is so overwhelming.

It's like you don't know where to start, you'll leave this talk here and it's like oh my God, where do I begin? Where do I begin? And I know that And I don't mean to be so disruptive but it's like wake up, wake up, the world is dying.

Autoimmune diseases are going up 4-9% every year every year. They're going up 30 to 44 year olds of 407% increase in the diagnosis of Alzheimer's in four years. Wake up so it's one hour a week and you can do this, you can do this. Now. The last thing I'll say if I may, there's a tibetan word, I'm not sure, I'll say it correctly, pronounce it correctly, but it's my tree M. A. I. T.

R. I. And it means loving kindness and an unconditional friendship with one's self and be kind to yourself, don't think you're gonna get this all at once.

You'll want to go back and listen to this talk again and listen to other talks on this summit again of how to rebuild the healthy microbiome right? And but be kind to yourself and just allocate one hour a week to listen to one of these talks again or one hour, just one hour a week. That's being kind that's taking care of yourself and not making yourself crazy because it's so easy to just go over the deep end, you know, with this and not know what to do or how to do it, especially when your kids are sick or they're diagnosed with attention deficit and they want to put them on medications. It's like I gotta get this now, I gotta get this now. Well then you find a functional medicine practitioner and you do the deep dive. But if you're a consumer and you're listening to this talk then at least you get started with kindness for yourself.

You know, you know, we all want to be enlightened, you know, we all want to be more at peace a little closer to God, however we describe that in our world. Well, do you know what enlightenment means?

It means to lighten up, just lighten up and but this this information is so overwhelming, you don't know what to do with it. So I don't even know where to start.

One hour a week. Just take one task a week and in six months you'll look back and you go, yes, alright, I'll stop. – Amazing Dr. Tom this is great because it's giving people manageable chunks bite sized chunks.

It's reducing overwhelmed and we know from the studies on habits and the behavior design that one time actions if you have motivation, you do a one time action like you buy the tupperware, it's very easy to implement that into a routine implement that into the data – By the glass containers. – Exactly the glass containers. Yes.

Glass tupperware. And so these one time actions are amazing from the perspective of, of habit formation and that my tree is, it's really important. I went to a buddhist, I was uh my schooling, I went to a college founded by a buddhist monk and I did a year in a graduate program at Europa University. And and there they had these mystery rooms and this deep teachings about my tree and this loving kindness to yourself is really important because it can activate sometimes the amygdala fear response when you do become aware of that five g of talks, five g of plastics a week and all these one into american homes, water damaged and mold being so significant. And these things can be a little frightening and to take a step back and to realize that there are steps that you can take that are manageable that don't have to leave you feeling overwhelmed is so it's such an important message. And I want to also just to close in here to tie it together with with some symptoms because we've talked a lot about some diagnoses.

We talked about Alzheimer's, we've talked about autoimmune diagnoses. We've talked about how they can start way before they get a diagnosis and I love that the via keeps blood for people so you can look back and some of the studies on things like lupus, you look back nine years and the antibodies were already there.

It's pretty amazing that we can see that they were already there. And so to to screen for these to find a functional practitioner can take a look at a lot of these auto antibody markers can be really helpful for predictive nous if you're able to and if you're not to take these single step actions to reduce the environmental toxicity that's occurring in the environmental triggers that may be occurring.

That could be triggering these autoimmune issues is so important. But what early symptoms, let's say, I know some of this. We talked about a 20 year non symptomatic. We talked about the early signs, but how about antibodies against dopamine receptors in the brain?

We're going to see a little anxiety, a little oppression. What about what about subtler signs and symptoms a little earlier that people might be able to realize that taking a look at these kinds of things that we're talking about would be worthwhile. – The human body is miraculous.

It always wants to be healthier. It's constantly in a state of reproduction. You're reproducing new cells getting rid of old and damaged cells, making new cells constant.

There's no pill to take to make your body do that. It does it automatically. It's about serve beyond surviving it's thriving. The problem is that we put so many emergency brakes you ever back out of a driveway and you said what's wrong with this car? It's moving but it's not moving up the emergency brake and you let go of the emergency brake and then you back up easy.

Our lifestyles have so many emergency brakes that we don't know are inhibiting The vitality the the reproductive capabilities of every cell in your body. So you your DNA is to be a 10 to be perfect you know to have a perfectly functioning body.

Reducing Toxic Load and Rebuilding the Microbiome

The re and your D. N. A. Doesn't change so much. But how come when as we age ourselves get weaker and weaker. The primary reason is because of what's happening around the genes that the fingertips on the dimmer switch are more inflammatory than anti inflammatory.

As you calm down those inflammatory genes by learning what in my life is causing this inflammation. As you start to learn what those triggers are. Those environmental triggers and you begin reducing those environmental

triggers. I promise you in six months it's like wow I haven't seen you for a while. What happened to you.

You look great. You look I promise you it happens again and again and again. – And lastly how about the repair? We're reducing the triggers and but there's damage that's been done. These autoantibodies have damaged brain tissue.

Is that repair automatic are there things that can help that repair? Let's let's conclude with that, that that hope for repair for the damage that's been done.

I know some people are concerned. Well, what if I've already had this going on a while? What if the tissue has been damaged? – Yeah, absolutely. You know, we know, I mean the studies came out in the mid eighties, one cup of blueberries a day for three years and your brain's functioning as well as it was 13 years earlier. And that's cognitive function.

It's called the rainbow Diet. Our friend Dr. Deanna Minnick talked about the rainbow diet for years she's been talking about this and the goal is to have 50 different fruits and vegetables, mostly vegetables per week.

50, that's the goal. And most people are somewhere between eight and 12, 8 and 14 that they eat every single week. But the goal is to vary your diet with lots of and the colors of the rainbow.

The colors of the fruits and vegetables are the components in the foods called polyphony channels that have their hands on the dimmer switches of your anti inflammatory genes.

That's what those colors do is they activate more anti inflammation. So it's like putting the fire out, you're you're putting your calming down the fire.

Then when that cell is ready to reproduce it reproduces a healthier cell. There's not as much inflammation around the cell. So you produce a healthier cell and you know, I've I've done this drawing for years.

This came from Hansel earlier, the father of stress, who coined the term and explained stress back in the 1950s to all of us. And you know, in my interpretation of what he was saying, your thyroid Mrs. patient, you've got hashimoto's thyroid disease.

Your thyroid is functioning. I'm gonna make it up. It's functioning at a 5.4 on a 1 to 10. It's not working very well Well, every cell in your body reproduces. So when the cell reproduces it reproduces is a 5.4. But the lifestyle you're living causing all this inflammation makes you function weaker. That cell's gonna start functioning as a 5.3. And when it reproduces, it reproduces as a 5.3 And then a 5.2, then a 5.1 and a 4.8. Then wait a minute.

I just attended this summit and I heard these talks, I'm changing my food selections. I'm taking a little more time for myself. A little quieter time.

Now you're feeling a little better. Your your functioning at a 5.2. And then when that cell reproduces because your lifestyle is continuing to be less inflammatory, more anti inflammatory, you start functioning as a 5.4, that cell reproduces as a 5.4 because the DNA says 10, it always says 10 and then a 5.8 and a 6.2 and a 6.7.

And in six months, wow, what happened to you? You look great. That's the mechanism that can occur for every single one of us. – That's beautiful and that gives some hope because it's not just that you can stabilize where you are. You actually can come up and feel great and thrive and move towards that optimal function. And that's a really good – People have a diagnosis depending on what it is and you know what their state is.

Yeah. MRS patient, It's gonna take six months to two years to turn this around. Are you willing? And if you're willing? Great, let's get started, let's talk about what foods are inflammatory for you.

I recommend this. Test this, test this let's see, let's see where you're at. Let's see if you got that leaky gut thing. If the cheese cloth is torn, you know, And then then we dive in with functional medicine.

But it's not that the doctor is gonna do it to you, that's not gonna work here. The only time that works is if you need surgery for something right?

Repair, Recovery, and Practical Next Steps

Aside from that, it's your ownership, you're learning a new way of living life That is going to allow you to make healthier younger cells. – So in summary, it seems like we have inflammation as part of the chronic health picture in the 14-15 top causes of death. We have this aspect of gut, dysbiosis being a part of the picture and leaky gut being another part of the picture and environmental triggers. And we focused in on environmental triggers how to understand those, how to reduce those, how to help bring the burden down, calm that fire. So that the brain, the body, the tissues, the organs aren't on fire anymore. That we're turning down the dimmer switch on the inflammatory genes were turning up the dimmer switch on the anti inflammatory genes by cleaning up the environment and through that cleaning up the environment and changing those switches, we also can introduce these brightly colored fruits and vegetables.

These polyphony calls that we know can turn up the dimmer switch on the anti inflammatory and can start to rebuild and regenerate that tissue and people can start to function better and feel better and get towards feeling at perhaps their peak, perhaps even as well as they felt in their twenties and I've seen this before.

And and so I love that and and you know, it seems like you're very vibrant and alive and and feeling good at at at at your age. And I love seeing that too.

You have this, you know, shine in your eyes and a smile on your passion and I can see that coming forward. And and so I really appreciate you and anything else you'd like to say in summary. And then I do want to be sure people know how to find out more about you. – Oh, thank you very much.

All disease begins in the gut. If there's only one thing you're going to do is build a healthy, diverse microbiome, that's the most important thing that you can do to begin with. So this summit and what all the speakers are going to be saying is critically important to the direction of your health.

– Well thank you Dr. Tom. How can people find out more if they wanna read your book, if they want to find out more if they want to work. – Thank you. Yeah, thank you.

The website is thedr.com, thedr.com just don't spell the word doctor out and uh the books are on amazon uh the auto immune fix and you can fix your brain. Those are the two books and the main books, there's a bunch of smaller ones but those are the main ones and this concept and there's lots of videos and courses on my site. Uh So come come to the site, just explore, look around, see what's of interest to you – And please do because Dr. Tom has been doing this a long time. He's been a long time mentor to me.

His materials are very research based, he's pulling things out that are other people haven't pulled out and or he's conglomerate ng things in a really interesting way.

So please do check out his books, please do check out his website. Thank you so much. Dr. Tom O'Bryan. It's been a pleasure. Thank you everyone for watching.