Conscious Life presents
TRAUMA
SUPER CONFERENCE

The 5 pillars of inflammation

Guest: Dr Tom O'Bryan

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[00:00:10] Alex Howard

Welcome everyone to this interview where I'm super excited to be talking to Dr Tom O'Bryan. Firstly, Tom, welcome and thank you for joining me.

Dr Tom O'Bryan

Thank you so much. This is such an incredibly important topic for all of us. It's an honor to be here with you.

Alex Howard

I think this is also a really important piece of the jigsaw. As we were just talking before we started recording, we are going to be talking about the role of inflammation in pretty much every chronic disease and health implication that we can talk about. And as many people understanding the impacts of trauma will realize, one of the key ways that trauma impacts on our physical body is in the result of raising inflammation. And we're going to come more into that in a moment.

Just to give people a bit of Dr O'Bryan's background, Dr Tom O'Bryan is considered a Sherlock Holmes for chronic disease and teaches that recognizing and addressing the underlying mechanisms that activate an immune response is the map to the highway towards better health. He holds teaching faculty positions at the Institute for Functional Medicine and the National University of Health Sciences. He has trained and certified tens of thousands of practitioners around the world in understanding of the impact of wheat sensitivity and the development of individual autoimmune diseases.

Dr Tom, do you want to run us through, I know you've got a bit of a presentation here which I think will really help bring this to life, but some of these core principles around the five pillars of inflammation and how inflammation is impacting our bodies in all of these different ways.

Dr Tom O'Bryan

Thank you. And to begin with, I'd start with, you aren't going to like this. People aren't going to like what they hear. And it's our lifestyles that are creating this condition, and we know that, but there's aspects of our lifestyles that have changed. The technology of 10 years ago is no longer the most comprehensive understanding of what's happening today, that we can't be thinking the way we did 10 years ago about what's good and what's bad, that we have to continually expand our understanding as more knowledge becomes available.

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I'm going to show you some things today that will be new for most people. I'm going to talk about the complications of the Mediterranean diet and fruits and vegetables. What, yes, fruits and vegetables can be a real problem fueling your autoimmune disease, fueling your brain deterioration, fueling your inability to have successful pregnancy. So I'm going to go into about 15 to 20 minutes of information for you and then we're going to shoot to the questions.

So if I may share my screen. I talk about the brain as being the "Canary in the Coal Mine". That when someone has a heart attack and if they survive, they change their diet, they start exercising, they look better than they've looked in years. If someone is diagnosed with cancer and they go through the recommended protocols and they put the cancer in remission, they're feeling good, they're doing great. No one feels good when they've been diagnosed with a brain deterioration disease. It scares us more than anything else, and we avoid it because there's no answers that people have as to what to do if your brain is going down on you.

So, a "Canary in the Coal Mine", it's an early advanced warning of a danger. And this is when the coal miners used to carry a canary in a cage down into the mines and they listened to it sing all day while they're working. And if they didn't hear the singing, someone walked over and looked at the canary, if it had fallen over and dropped down dead in the cage, they blew a whistle, everyone got out of there immediately because humans can't smell methane when it's first leaking out, or carbon monoxide, and it would kill them. So the "Canary in the Coal Mine" was an advanced warning of a danger.

Your brain is the "Canary in the Coal Mine" of your body. When your brain is not working the way that it should be, and I'm getting older I don't remember the way I used to, 'how old are you?'. 'Well, I'm 42'. Well, that's not supposed to happen. That's a warning system. Something's not right here. 'Where did I park my car in the parking lot of the shopping center?'. 'Oh, that person walking towards me, what's her name? What's her name?'. 'Where are my keys?'. Those are early warning systems of a problem.

So the question is, what song is your canary singing? Now the Alzheimer's Association told us last year that 1 in 3 seniors will die with Alzheimer's or another dementia. That means between our host and me and you, the viewer, one of the three of us, statistically, is going to die with dementia. That's how bad it is. I'm going to show you where the triggers are coming from causing the brain deterioration that the vast majority of us are experiencing.

Blue Cross Blue Shield came out last year with this report. Now they're the largest for-profit health insurance company in the English language. And they published this report that said, early onset dementia and Alzheimer's growth in younger Americans. And that in 4 years there was a tripling from 4 to 12 per 10,000 people who were diagnosed with Alzheimer's. It tripled in 4 years. And when they broke it down by age bracket, the 30 to 45 year olds had a 407% increase in 4 years. The brain is the "Canary in the Coal Mine".

When you're noticing your brain is not working the way, 'oh, it's just stress. I'm too stressed', you can't write it off anymore because the inflammatory cascade is going on, killing off brain cells, killing off brain cells, killing off brain cells. And we want to recognize these early warning systems, which then give us some clues as to how do we begin to put the brakes on this inflammation.

So what's the takeaway from the startling statistics as to what's happening to our brains? More and younger people are having their brains fall down on them at earlier stages and they're not listening to the early signs their brains are saying. So it's terrifying. It's just terrifying when we think about that.

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Now, in order to hear what your brain is saying to you, the warning signs, there are a few basic concepts to understand first. So there's three concepts I'm going to give you here. First, the most prevalent pathology at the root of all disease is inflammation. And over the last 15/20 years we've recognized inflammation with disease after disease after disease, until now, look at the title of this paper, *Chronic inflammation in the etiology, (meaning the development of disease) across a lifespan.*

Chronic inflammatory diseases have been recognized as the most significant cause of death in the world today. As a matter of fact, 8 of the top 10 leading causes of death are inflammatory. The only ones that are not are accidents and suicides. And arguably suicides are inflammatory because they come with depression and depression is an inflammatory state in the brain. Depression is the number one cause of disability worldwide, is often fatal, and it's the major cause of suicide, now one of the top 10 causes of death.

So when I give this talk, I ask the audience of doctors, 'doctors, what symptoms might you be suffering from that are not inflammatory?'. And I just look at their faces and they start to get a little confused because, I only know of one disease of the brain that's from a sodium deficiency that causes brain shrinkage that doesn't have inflammation. Everything else is inflammation. It's inflammatory. We have to understand that big picture view.

Now, where is the excessive internal and external molecules of inflammation coming from? For that, let's look at Professor Alessio Fasano, my friend and my mentor. He's a professor of Pediatrics at Harvard Medical School, a professor of nutrition at Harvard School of Public Health, chief pediatric gastroenterology MassGeneral Hospital at Harvard, the director of the Mucosal Immunology Center at Harvard, the director of the Celiac Research Center. This guy, any one of these titles is a lifelong goal for people at the top of their field, he has five. We think he's going to win the Nobel Prize. We truly do. Because he and his team are the ones that identified the mechanism that causes what we now refer to as leaky gut, intestinal permeability. He identified it back in 1997 and they've continued to publish about it ever since.

And he's always very careful of what he says so that he's not misquoted. Look at the title of the paper he published last year, *All disease begins in the (leaky) gut: the role of the protein zonulin in creating gut permeability and inflammation*. And in this paper he talks about the five pillars in the development of chronic inflammatory diseases. He says these five pillars create the perfect storm to produce inflammation in our body.

And what are the five pillars? Genetic vulnerability. You can't do anything about your genes. Now we used to say, turn genes on, turn genes off, genes don't turn off, they don't turn on. They're on a dimmer switch. And what we want to do is dim down the genes of inflammation. You have the gene for Alzheimer's, it doesn't mean you're getting Alzheimer's. It means that if you get too much inflammation, it's going to attack your brain, most likely. You have the gene for breast cancer, it doesn't mean you're getting breast cancer, but it means if you have too much inflammation it's going to attack your breast cells, most likely. That's what genetics mean. And you want to dim down the genes for inflammation and turn up the genes for anti-inflammation. But they don't turn on and off. They operate in degrees.

And so we're always wanting to turn up the genes of anti-inflammation, that's what you have to learn to do to protect you and your family, and turn down the genes of inflammation. And I'll show you some of those examples. That's number one, the genes.

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Number two, the environmental triggers. And the most common environmental trigger is what's on the end of your fork, but it's not the only one. What you breathe, the most common type of Alzheimer's, 60% to 65% of all Alzheimer's cases are inhalation Alzheimer's. It's what you're breathing that goes straight up to your brain, and they're the molecules of inflammation, they're gasoline on the fire, causing the inflammation in your brain. So the environment around you.

And it's also the environment inside of you, the trauma that you experience and relive sometimes in your memory, creates stress hormones that are inflammatory when you have excessive amounts of them and are regularly producing them, they're inflammatory. So there's internal triggers and there's external triggers. We need to learn about both of them.

The environmental triggers turning up the genes of inflammation create an altered microbiome. The good guys in your gut go down, and the bad guys populate, they rear their ugly heads. And the more of the bad guys you have, the more you have an imbalanced microbiome. It's called dysbiosis. And that inflammation created by the dysbiosis causes number four of the five pillars, and that's the leaky gut. Intestinal permeability, the leaky gut.

And when you have the leaky gut, larger molecules leak from the intestines into the bloodstream. They're called macromolecules. They get in before they're supposed to and the result is your immune system, trying to protect you from this macromolecule, creates number five, systemic immune inflammation, trying to protect you. That's the five pillars that Fasano talks about. And the three in the middle we've got complete control over. It's going to take you 6 months to a year to really learn about how to deal with these three but this is where you put your attention, is on the environmental triggers that are inflammatory for you, rebuilding a healthy, diverse microbiome and healing intestinal permeability.

Now, although there are dozens of environmental triggers, the big kahunas, Fasano tells us there are two small exposure to large amounts of bad bacteria, and its exhaust is called lipopolysaccharides (LPS), and gluten. Those are the two most powerful triggers creating the inflammation in the gut.

Now, Professor Maureen Leonard, also at Harvard, she works with Fasano, so she went back and looked at all of the articles between 2010 and 2017, (7 years) about 64 articles she picked on this topic of gluten and permeability. And her conclusion is that previous studies have shown that gluten and wheat causes immediate and transient increase in gut permeability. This process takes place in all individuals who ingest gluten. Whether you feel it or not, you don't have to have any symptoms in your gut to create a leaky gut. It's really important to understand, because many people say, 'I feel fine when I eat pizza. I don't have any problems with wheat, I feel fine'. It doesn't matter how you feel. The lucky ones are the ones that get gut symptoms from wheat. The unlucky ones are the ones that don't. They get brain symptoms or joint symptoms or skin symptoms.

Now, how does this occur? Why is wheat such a problem? Because gluten activates something called toll-like receptor 4. You have the same body as your ancestor thousands of years ago, the same kidneys, the same bladder, the same immune system. And when your ancestors would find some food, the first thing they do, they pick it up, they smell it. Does it smell safe? Next they nibble on it. Does it taste okay? If they eat it, and if there's bad bugs on it they didn't identify, when that food comes out of the stomach into the intestine, right there the sentries are standing guard, toll-like receptor 4, to say, 'that's a bug, we need to kill that'. And the sentry then sends a message to create leaky gut immediately. Within 5 minutes you've got leaky gut.

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Toll-like receptor 4 was designed to protect you from a bug. That's its job in our bodies. And we have the same body as our ancestors thousands of years ago. Now, Professor Fasano tells us the activation of the leaky gut pathway, by toll-like receptor 4, is a defensive mechanism to flush out the bad bug. So when you get leaky gut, water comes into the gut and it washes out the bug in the poop. Just get rid of it. That's its job. So gluten is misinterpreted by the zonulin pathway as a potential harmful component of a bug. That's why it's so important for everyone to take a look at this thing about wheat when you're wanting to be healthier, it's not the only problem, but it occurs in every individual, according to Maureen Leonard who read 64 studies on this. Yeah, there's Maureen Leonard's article. Once again, it happens to every individual who ingests gluten.

A couple more concepts. Okay, we now know that wheat and bad bacteria are problems. What are other common triggers? Just as accrued toxic compounds from cigarette smoke are well established to cause various health conditions, many toxins originating from day to day exposures accumulate in people and cause a world of hurt. Shifts in the inflammatory response from short to long live, meaning the inflammation continues all the time, occurs because we're storing these toxins. If we can't get rid of them they accumulate in our body. And then the immune system is constantly trying to fight these pesticides, these insecticides, this mercury, this lead, this bad food, whatever it is that we're being exposed to, that's accumulating in our bodies.

And look at the title of this article, *Understanding inflammation, it's regulation and relevance for health: A top scientific and public priority*. You all as individuals need to understand this. Not the geeky stuff that I'm talking about, but just what are the triggers causing inflammation for you in your body? Understanding the process may provide important insights into why people develop diseases, and it's really important.

The systemic immune response comes from these five pillars for every disease. So you see that systemic chronic inflammation is the center cog wheel that turns the other wheels that may come from chronic infections, bacteria and viruses, inactivity, obesity and altered microbiome, bad foods that you're eating, the stress and the trauma that we have from stress, disturbed sleep, and then the chemicals were exposed to. These are the factors that we need to look at step by step. It's going to take you 6 months to a year to dial it down for you and your family, to figure out which ones are the major problems to get them out of there.

I'm going to show you three studies and then we're going to the question period. So this study from the *Journal of the American Medical Association* had this comment that came from the editors. Now, the editors don't do this very often, but they said this is an elegant example of a study that uses sophisticated biomarkers to identify the subtle effects of pesticides on human health.

So the editors gave this article the stamp of approval. And what did the article say? Greater intake of high pesticide fruits and vegetables was associated with a lower probability of successful pregnancy and successful birth. What? And here's the numbers. They took all these pregnant women, they put them into fourths, the lowest fourth that didn't have many fruits and vegetables, conventional fruits and vegetables from the supermarket, the next group, the third group and the highest group. And they compared the lowest and the highest group. It's not the fruits and vegetables that are the problem. It's the pesticides on the fruits and vegetables.Look what happened for the people who are eating more than 2.3 servings a day.

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Now, if you're having a salad, which is greens and perhaps tomatoes and perhaps carrots and perhaps cucumbers, you're over 2.3 servings per day. 26% lower probability of a live birth, meaning these pregnant women lost the baby, if they were eating 2 points more than 2.3 servings of fruits and vegetables a day that were conventional, meaning they're not organic.

We've allowed the corporations to poison our food and we do nothing. 'Well, I know I should eat organic, but I don't have the time'. This is the result. Our technology is so good now we're able to identify, what are the triggers of inflammation in this group of people, pregnant women or women wanting to get pregnant? 18% lower probability of getting pregnant if you were having 2.3 servings or more of vegetables a day, conventional vegetables.

Second study. They measured the amount of pesticide residue in the urine of healthy people. They had no health concerns, no problems whatsoever. And they found out there was a 91% lower level of pesticides in the body and in the urine of people that were eating organic. 91%, which is really quite wonderful and how it should be for all of us. Now, when they took people from the average habitual Western diet, we call it the Standard American Diet, the SAD diet, and they put them on the Mediterranean diet, which we've heard about for years is so good for us, look at the increase in the amount of insecticides and organophosphates and pyrethroids that were in the urine when people went on the Mediterranean diet.

There's no question the Mediterranean diet is really good for you, but if you're using fruits and vegetables that are conventionally grown, you're going to accumulate all of these toxins in your body, you're likely to accumulate all these toxins in your body that will manifest years down the road because of the gasoline on the fire, wherever your genetic vulnerability is. Here comes Alzheimer's, if you carry the genes for Alzheimer's. Here comes cancer, if you carry the gene for cancer. But the Mediterranean diet helps to lower your blood pressure, you lose a little weight, you feel better, but you have all these toxic chemicals now in your body causing the inflammation that eventually, down the road, manifests as whatever your genetic vulnerability is.

And the last study. This was for me because I traveled so much teaching. I was in Lisbon a couple of weeks ago and then Milan and the airports don't have much food that's really okay to eat. So when I'm really hungry I'll drink my green tea. I have a container I carry with me all the time, and I always have green tea. And then I'll get a bag of potato chips and I fall down on it.

This study shows us that eating potatoes does not increase your risk of mortality, not in the least, unless you're eating fried potatoes. That's French fries and potato chips. If you're eating French fries and potato chips 2 to 3 times a week you have a 95% increased risk of mortality within 8 years. If you're eating French fries and potato chips more than 3 times a week, you have 126% increased risk of mortality within 8 years. And I didn't like that at all. That was not so good for me. But it just reminded me that I can't have those little cheats. That our science is so good now that we're getting much more comprehensive information on the subtle triggers that accumulate over time.

So this is jaw dropping information about fruits and vegetables. We all need to be eating Mediterranean diet style fruits and vegetables, rainbow diets, but it must be organic. And it may take you 6 months to a year to grow some herbs in the bay window of your kitchen. 'I don't have a bay window', well install one and just grow some herbs there. A little parsley, a little rosemary, a little thyme, and grow vegetables or find your sources for organic produce.

[00:25:43] Alex Howard

I think, firstly, it's a very compelling narrative that you're sharing. And I think I like the simplicity of that, and in some ways I think we should finish there, everyone go and eat more vegetables and eat organic. And this is one piece of a bigger picture in terms of these pillars of inflammation.

I'm wondering, that's a given people need to do that but what are some of the other pieces they can look at? Particularly looking at this research around leaky gut and the microbiome, and this is an area that you've been speaking about and writing about for a few decades now, I'm curious as to what are some of the other simple practical pieces people can work with?

Dr Tom O'Bryan

If people say to me, 'what test should I do?'. And I say there's really three. The first one, because I've spent decades studying this, is The Wheat Zoomer. Look for a test to see is wheat giving you a problem? And that's because I've studied so much science on that one. Most doctors won't say that. They just haven't seen the hundreds and hundreds and hundreds of studies of how it may manifest.

The second test is called The Neural Zoomer Plus, it's the most comprehensive test. And I travel the world and I always, at the breaks, I go down to the vendor booths and look at the laboratories that are there for the doctors. And I look at all the tests that are available and there's nothing like the Zoomers. They're called Zoomers because you zoom in on the problem, and The Neural Zoomer Plus to see, 'oh my gosh, my brain is on fire'. Because if you don't know your brain is on fire, you're not going to do anything about it. But if you know, when you identify it, now you've got a map. 'All right, I'm here. I'm in brain inflammation. I want to be over here, no brain inflammation. What do I do?'. And you read my book, *You Can Fix Your Brain* because it talks about so many of the hidden triggers of inflammation in the brain.

And the third test is a good test for the microbiome, and there are many. We use The Gut Zoomer but you need to identify what's the current status of my microbiome? And if there's only one thing that you're going to work on, 'Doc, I'll work on one thing. Just one thing only. What should it be?', build a healthy, diverse microbiome. Nothing has more benefit, more trickledown effects than building a healthy microbiome.

It was Michael Gershon from Princeton University in 1999 that wrote the book *The Second Brain*. And he told us back then, for every 1 message from the brain going down telling the gut what to do, there are 9 messages from the gut going up telling the brain what to do. The ratio is 9 to 1. So if you have depression, fix the gut. If you have anxiety, fix the gut. If you have high stress and all the time, fix the gut because it's the exhaust of the microbiome, that's called the metabolites.

If you exercise too hard, your muscles are sore the next day, that's lactic acid. That's the exhaust of your muscle cells. The exhaust of the bacteria cells in your gut, called the metabolites, make up 36% of all of the small molecules in your bloodstream. One third of everything in your bloodstream are the messengers from the bacteria in your gut instructing your brain, instructing your heart, instructing your kidneys, instructing your liver, one third of everything.

So if you've got a lot of the bad guys in your gut, the messages that are going to your brain are abnormal inflammatory messages. So when you build a healthier, diverse microbiome, you change the messaging system. And just Google 'depression and the microbiome', 'bipolar disorder and the microbiome', 'anxiety, schizophrenia and the microbiome', and here come the studies that show sometimes people get dramatic results in brain dysfunction by rebuilding a microbiome.

[00:29:58] Alex Howard

And in terms of rebuilding the microbiome, obviously the food is an important part of that, perhaps you can say a little bit about some of the other pieces, antimicrobial work, probiotics, some of the other ingredients of that rebuilding.

Dr Tom O'Bryan

Yeah, of course. Critically important. And the first thing on the list is change the lifestyle that created what you've currently got. So stop throwing gasoline on the fire. Meaning if you have a sensitivity to wheat, you have to stop eating wheat. If you have sensitive dairy or corn or soy, you have to find out, is my body okay with these foods or not?

And the way you feel doesn't matter. The ratio is 8 to 1. For every 1 person that has gut symptoms with a food sensitivity, there are 8 people that don't. They get brain symptoms or joint symptoms or skin symptoms, and they can't tell that it's the eggplant parmesan they ate last night that's making their joints so sore today. They can't tell. They don't associate the two.

Now, if you get gut pain and you're like, 'oh, man, I don't feel so good after eating that', then you know you're the lucky ones. So stop throwing gasoline on the fire. You have to test. The rule is test. Don't guess. Test. Accurately test. That's number one.

Number two, and there's a number of things to include. The first one, Mrs. Patient, when you go shopping for your vegetables, always organic, but buy a couple of every root vegetable in the store. Get rutabaga and turnips and parsnips and radishes and sweet potatoes and carrots. Not too many white potatoes because the glycemic index affects your blood sugar, but get every root. 'Well, I don't know how to cook a turnip'. Well, neither do I, but what I do is I slice an onion, peel some garlic, slice and dice the turnip, a little coconut oil or avocado oil in the pan, heat it up, add a little sauce to it, and I eat it. 'Well, what about a rutabaga?'. I slice up an onion, peel some garlic, dice it, put it in a pan with some oil, put a little sauce on it and eat it. You don't have to be Julia Child. You just have to get it down because the root vegetables are the fibers that feed the good bacteria in your gut. They're called insoluble fibers that feed the good, they don't feed the bad bacteria. They feed the good bacteria.

So the first thing, you have to have it every day. Every day a root vegetable, one root vegetable for you and your family every day. Then you go to Google and you type in, 'list of prebiotic foods' and you print out the list and you put in the refrigerator and you have two from the list every day. Bananas are prebiotic and onions are prebiotic, garlic is a prebiotic. So you want two from the list and one root vegetable every day to feed the good guys.

Next, fermented vegetables, probiotics. A tablespoon a day. You work up to a tablespoon a day of sauerkraut or kimchi or miso or fermented beets or curry flavored, many flavors of kimchi, whatever you like. But every day, one tablespoon, and if your children, a teaspoon. 'Well, they don't like it'. Hide it in the mashed potatoes. They don't have to taste it. You just have to get it down there. And when you do that you increase the microbial count in your food by over 10,000 fold. Meaning you're inoculating with the good guys. Yes, it's good to take a supplement, but that's what we did 50 years ago, not 40. I can't date myself that bad. 1980 we were using probiotic supplements that we still do today. But it's not the mainstay, that's a short-term boost as you're transitioning lifestyle so that foods are where you're going to take care of your family's microbiome every single day.

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Next, a cup of bone broth every day. Make your own bone broth. Just Google how. It's really simple. It's a no brainer. Why? Because bone broth is high in gelatin tannate. Gelatin tannate acts like a seal over the leaky gut so the cells can heal quicker. It's like a band-aid that protects the damaged area and then the cells heal quicker.

Next, Mrs. Patient, when you go shopping for fruits and vegetables (always organic), buy 10, 15, 20 apples, organic. Wash them, but don't peel them. And cut out the seeds, dice them up, throw them in a pot. And in the pot, so if the apples are this much in the pot, add water to one third the height of the apples, one third. Dump in some cinnamon, maybe a couple of raisins if you've got kids and they like a little sweeter, turn it on high. It takes 12 minutes. You're done. You made apple sauce. That's all it takes. Boil them for 12 minutes, you've got apple sauce. Then you can put it in the blender. My wife likes to add just a little bit of vanilla to it. It makes it really tasty. But you got apple sauce. Apple sauce is one of the most potent foods to feed the strongest enzyme in your gut called intestinal alkaline phosphatase, IAP.

IAP heals the gut, increases the good bacteria, fights the bad bacteria, reduces cholesterol, reduces triglyceride, stabilizes blood sugar. There are so many different things that IAP does for you, and you increase IAP dramatically by having a tablespoon a day of homemade apple sauce. Not the commercial stuff, that won't work. It's the pectin in the fresh apple sauce that feeds intestinal alkaline phosphatase. Those are just some of the basic things to rebuild a healthy microbiome.

Alex Howard

I think one of the challenges sometimes is people can be very quick to go to functional testing and want to take this supplement and this protocol and sometimes miss the importance of fundamentals. And I'm mindful of time, but I think perhaps a helpful way to bring this together is actually how much people can do with those fundamentals.

Dr Tom O'Bryan

You know, Alex, what you're describing is the way we practice functional medicine when I came out of practice in 1980 and 1990s and 2000, I recommended a lot of supplements for people with good justification. There was good rationale for it, and people got better. But now we know it's the lifestyle that contributes to the inflammation that causes the presenting complaints and the diseases. So we have to change the lifestyle and you want to train your family to enjoy the foods that are positive, beneficial, healthy for you and not be dependent on 15 different supplements.

Good rationale to use the supplements, and I ask my patient, 'Mrs. Patient, can you take a probiotic supplement?'. We like the spores called megaspore, 'but can you take a probiotic supplement for 2 months while you're transitioning over to eating more fermented vegetables?'. 'Yes, I can do it'. Good for about 2 months. That's a nice transition to make sure you're getting enough of the good guys while you're changing your diet.

And we always emphasize while you're changing your diet, because if you go with the mindset that, 'well, if I take this, I can keep doing what I was doing in my lifestyle', it's like a dog chasing its tail. You're going to keep having symptoms because you still have the inflammation. So you can't put the fire out by trying to put a band-aid on the fire while you're pouring gasoline on the fire. You can't do it.

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And it's a paradigm shift for people. I know this is a little traumatic, what I'm telling you about fruits and vegetables. You must eat organic now, it's not a question anymore because of the amount of, 26% lower chance of having a live birth pregnancy. And this is in the *Journal of the American Medical Association*, the number one journal, arguably the number one journal in English language, maybe number two, but really top tier. 26% loss of live births just by eating conventional fruits and vegetables.

So this is a paradigm shift for all of us. And I'm going to invite everyone here to wrestle with these ideas. Listen to this interview again and again, because I'm like motor mouth speed. I know I am, because there's so much information I want to tell you, but listen to it a couple of times. 'Oh, I missed that the first time'. 'Yeah, I remember hearing that'. And you want to develop the ability to look at the map of your health and your family's health. 'We're here. We want to be here. How do we get there?'. And you go this route, little detour here, probiotics, prebiotics, applesauce. You have to learn. Pots and pans, you can't use aluminum pots and pans anymore. There's lots of science about all this stuff now.

Alex Howard

Fantastic. There's so much more that we could say but for people that want to find out more about you and your work, what's the best way to do that and what's some of what they can find?

Dr Tom O'Bryan

Oh, thank you. There's two things. Our website is thedr.com just don't spell the word doctor out. Lots of videos, lots of free handouts for you. For example, if you go to the thedr.com/plant we give you the article and the summary from NASA on house plants absorbing 73% of the toxins in a room. Two 6 inch house plants absorb 73% of the toxins in the room. Because you're going to learn that indoor air pollution is much worse than outdoor air pollution. So thedr.com/plant you've got the handout. There's all kinds of handouts and videos like that there.

And my wife and I did this thing a few years ago, we went to seven countries. I interviewed the world leaders on autoimmune diseases. And then I interviewed the doctors who were following the guidelines of the world leaders. And I knew the questions to ask these guys because I read their studies. So we got down into the meat of it right away. And then the doctors who were using that information, and I asked each of these doctors to bring in 2 or 3 of your patients who were compliant and who had good results.

And then we interviewed the patients who reversed MS, reversed lupus, reverse chronic fatigue, reversed multiple chemical sensitivity again and again. I'll never forget the woman in London, during the interview she said, 'I took the tube to come here and it's a seven block walk from the station to the hotel, and I walked, it's not a big deal'. But then she got a little teary eyed and said what it is. And then we show you a picture of her in a wheelchair 2 years ago with MS, she can't walk. And we show you her MRIs, 7 lesions on her brain. And here she is today, no symptoms whatsoever, does a little jig. And we showed the MRIs, 2 lesions left on her brain.

That's the power of this work. When you have the patience and the understanding that it's going to take you 6 months to a year to really dial this down. But you need the map to understand the kinds of questions to ask.

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So that's at thedr.com/betrayal and that's where the docuseries is. It's all free for everyone out there.

Alex Howard

Fantastic. Dr Tom O'Bryan, I really appreciate your time and wisdom today. Thank you.

Dr Tom O'Bryan

Alex, thank you for the opportunity.