

How GMOs and Sulforaphane Influence the Nrf-2

Jeffrey Smith:

Hi everyone. This is Jeffrey Smith from the Institute for Responsible Technology. I am Dr. John Gildea and Dr. Martin Katz. Hi. Hi Guys. How are you doing? Now we're going to talk about a molecule that these guys have fallen in love with, and most people don't have that relationship with molecules, but these guys have very unusual relationships. For example, John has dissected more fruit flies than perhaps anyone in human history. He is public enemy number one among *Drosophila*. That's the fruit flies. And so he's got a whole relationship thing we're not going to talk about. And then so John has his PhD., He's been working with genetics and he's working with cancer and working with kidneys and he's one of the discoverers and developers of this molecule, which I got to say blew me away and

Jeffrey Smith: 00:57

it might blow you away in just a moment, but first, Dr. Martin Katz, welcome. And Dr Katz is a physician and family medicine and has done sports medicine is into lifestyle medicine. So that's your introduction. That's all I'm going to give you because everyone wants to know why you love this molecule so much. So, um, the name of the molecule is called sulforaphane, and we're going to talk about not only its general effects in the body, but very specifically how it can help counter the effects of GMOs and roundup. And there's some new research on roundup and research on health sulforaphane can help protect. And it's not just minor research, it's like, it's like potentially life and death research. But I want to tell you how I was initiated into sulforaphane before we get started. I was, I said, okay. I'm also joining us is an embodied spirit, David Roberts. Hello, hello.

Jeffrey Smith: 01:56

David also was a founder of the company and I said, David, I need to read about sulforaphane before we have this conversation. I always like to do my homework. And he sent me a site and I started reading it and going into the details and go into the details. And then I started scrolling more and it didn't stop. There were 39 different amazing benefits of sulforaphane. I'm just gonna mention detoxification, cancer, cholesterol, heart disease, obesity, diabetes, immune system, antiviral protects against infections, protects the skin, anti-inflammatory, depression and anxiety, cognitive function, Parkinson's, Alzheimer's, Huntington's, seizures, and I'm only halfway through. Actually, I'm less than halfway through. I realized that's too much to go over this. It's too much. We have to understand the mechanism. We have to understand why is this molecule so important that it can be one of the potential panaceas. Why haven't we heard of it before or if you have, congratulations.

Jeffrey Smith: 02:54

Most people have heard of Broccoli sprouts. They sold out when the information came out about the benefits of Broccoli sprouts. This is the Broccoli sprouts on steroids, but in a good way. All right, I'm going to ask you guys to introduce our audience to sulforaphane, and by the way, we've arranged a discount. If you want to try it for yourself and see if it can help anything on your list, there's a discount. It'll be available on a slide at the end of the talk. It's also available on the page. You can use the code to get the discount. Okay? Who wants to start John or Martin?

Dr. Martin Katz: 03:28

I think a, I'll probably start with introducing the problem. And so, you know, as a family physician, as a sports medicine doc, we run into problems with, human disease. And unfortunately we're seeing more and more of it. And when you, when you get to be, understanding of the toxic lifestyle that we have, you understand why we're seeing so much of that. Dean Ornish talked about this idea of this kitchen sink where we start blocking the drain. We have oxidative stress, we have toxins, we have things blocking the drain. We still got the taps running because we're introducing more and more, uh, potential toxins into the system. But, uh, more oxidative stress. Let you know whether you're talking about your relationships, whether you're talking about stress, um, relationship, stress

Dr. John Glidea: 04:24

whether he told him about lack of sleep, uh, what you're eating, lack of exercise.

Dr. Martin Katz: 04:29

We're just adding more and more into the system. And certainly you can talk all day about food and the poor food that's in this country, the lack of nutrients and unfortunately the great amount of toxins. So again, we have this kitchen sink. The tap is on, we're blocking the drain and unfortunately what's going to happen at some point, um, hopefully later on. But unfortunately we're seeing younger and younger disease where we're gonna see this now overflowing, this, um, sink overflowing. And this is when possibly disease, um, starts. And so we have now a person in front of us in the clinic. I'm a physician. Uh, we have a person in the clinic who's presenting with disease and it's really important to understand the difference between chronic inflammation and acute inflammation. So we're all in, we're all very familiar with this idea of inflammation. When we hurt ourselves, uh, we develop, you know, uh, red swollen joint or if we get stung around the sting, we develop this red swollen area that is acute inflammation. And that is what we want. We want the system to be able to respond to that. The problem, and most of us have probably heard about this is the chronic diseases that we're now seeing, certainly from all those things I previously mentioned. And now we're looking at cardiovascular disease, which is 10 fold. Uh, the greatest, um, problem as far as mortality in this country. But cancer's catching a fire has been catching fire, dementia is catching fire and these things all look very familiar, very similar in their disease process.

Jeffrey Smith: 06:10

And I wanna I wanna add that it's familiar to our listeners because all of that is related to Roundup and GMOs, particularly the research on Roundup. We know that even with GMOs fed to animals, they get chronic inflammation. We've seen the slides of that. Um, we know that Roundup is linked to cancer. It's a class two a carcinogen. People who get rid of the Roundup and GMOs and their diet also get better from cardiovascular diseases. The inflammation is also exacerbated by the leaky gut, which is also a generated through glyphosate's contact with the walls of the gut. So that can create the, the break of the tight junctions. And finally you mentioned oxidated stress. And I was following the three trials where Monsanto lost, where their Roundup was responsible according to the jury for the

plaintiff's cancers. And there was plenty of evidence that it created oxidative stress and geno-toxicity, which leads to cancer.

Jeffrey Smith: [07:07](#)

So everything you've just described in terms of the kitchen sink, if we just think in terms of pouring Roundup into our bodies, making it through the grains that we now know that the beans have even higher levels than the oats, cause that used to be the big, the big thing, the oats had the higher level are now lentils and mung beans and navy beans can surpass that. So we're just drinking Roundup in our nonorganic food and creating the basis for a lot of these diseases. Now you've got our attention, now we see the problem, chronic inflammation is over there is over the top. So where, where do we go?

Dr. Martin Katz: [07:42](#)

Well you know, again, for sure the things that I've talked to my patients about, um, ad nauseum is absolutely nutrition and getting away from these exposures. You know, number one, two and three for me is getting away from the exposures with you. You know, somebody coming in and, and having an unhealthy diet, which for most Americans, that is unfortunately true. And I'd say probably 80% of Americans, uh, 60% probably have an idea that they need to eat a certain way. 20% just simply don't care. So that makes about 80% to 20% hopefully that is already doing. It continues to do it and hopefully their dry going to continue to draw the system. But this is what's so exciting about this webinars. If we can get the word out to more and more people to make an effective change, that is what's gonna be where, where we are.

Dr. Martin Katz: [08:27](#)

We can't wait for our government to do it. We've got to do it as individuals. And so when you, when you look at this inflammatory disease burden, which I see in my office day after day with these people coming in with just an amazing amount of disease burden, and when you look at glyphosate, it's mind blowing as to the, in a bad way, the panacea of effects. It can have human body. I mean it's a mind blowing. But for today's talk, I think going to focus on possibly on, on absolutely the effect it has on the liver and decreasing your ability to address toxins. So, so unfortunately a glyphosate makes itself very toxic, um, and other toxins, even more toxic. And what's amazing about, um, glyphosate is not even the most used, um, spray. You've got neonicotinoids for the, herbicides, the insecticides rather, which is also used in massive amounts.

Dr. Martin Katz: [09:26](#)

And so you're getting this further exposure to these toxins and once glyphosate gets in there, you're not able to handle the problem. So again, you've got this kitchen sink that's overflowing. Patients are coming in saying: "What do I do?" Hopefully they're going to a doctor who's interested in lifestyle cause if they're not, they're getting the mops and the sponges and the, u, different things that, um, current Western medicine uses to track, clean up the mess. But what are we forgetting is we need to open up the kitchen sink, open up the drain, and we need to turn off the taps. And Dean Ornish said that beautifully and it's

absolutely true. Today. We need to understand what the problem is and we need to address it and certainly want to talk about Nrf-2.

Jeffrey Smith: 10:10

So before we get into Nrf-2, which is really important and it's, this is actually very important information about what's going on in our bodies and how glyphosate amplifies all the other toxins. I just have to emphasize that stopping that. We're going to talk about sulforaphane. We're going to talk about how to unwind the changes, but I want to emphasize what you said and that is eliminating the source is important because if you don't eliminate the source, it's like you come into the doctor's office and you're hitting yourself with a hammer. He says, okay doctor, I've got this pain in my head. What do I do? Well, you could put a bandage on, but you might want to, you might want to stop hitting yourself with a hammer. Really you think? And it's like, it's like there are many, many physicians that I've spoken to who said, you know, if you don't change the diet, then whatever supplements or medicines you give may not work. And if you change the Diet, they may not be needed. So that's just to put the Diet context now and RF to most people have never heard of Nrf-2 give us some context as to why this is particularly important.

Dr. John Glidea: 11:12

Probably most people have heard of reactive oxygen species, as unpaired electrons that are, I like to use the analogy that it's like microwaving with the microwave door open. There isn't a molecule that it doesn't affect. It destroys proteins, it destroys lipid, it destroys nucleic aci everything. And so most people know that there's a strong connection between these reactive oxygen species and disease processes. And, but you may not know is that Nrf-2 is the transcription factor that turns on all the genes that take care of all of the reactive oxygen species.

Jeffrey Smith: 11:57

In other words, it's a good thing. In other words, if your body has the troops waiting in the form of proteins that are going to be created by the DNA. And so it's like they're the Nrf-2 is like the general that comes up and says: Release the Crackin" or you know, "Send out the troops" and then they go and take out the reactive oxygen species and you end up calming the situation and protecting. It's sort of like the general. Am I getting it right?

Dr. John Glidea: 12:26

Yeah, perfect analogy. Because each one of those enzymes is able to take care of many reactive oxygen species and there's a lot of different, they call it proactive oxygen species because there's a lot of different kinds of them. So you need multiple enzymes to do it. And we often use the analogy of vitamin C, of course you want to use vitamin C, but a vitamin C molecule will itself will inactivate one reactive oxygen species and then it's done. Then you have to, you know, recycle whatever.

Dr. John Glidea: 12:56

Vitamin C is a division commander, but not the top general.

Dr. John Glidea: 12:59

Absolutely. Okay. So all of those enzymes are so much more able to take care of the problem. Each one is made for a specific type of react, reactive oxygen species and they're made and they stay around for a long time.

Jeffrey Smith: 13:14

So then if, yeah, here comes the, the, the big question. What's the relationship between roundup and this Nrf-2?

Dr. John Glidea: 13:27

Yes. So we can skip forward to that to that slide. But um, maybe we should talk about the mechanism of how Nrf-2 is activated first.

Jeffrey Smith: 13:45

All right. All right. I'm not into order and I like to cut to the chase. I suspect that you have an order you want to bring us through. So why don't you take it from here. But believe me, we're, I'm, I'm, I'm wanting to know what roundup does to honor f two because if it does suppress it, that means that the whole army is sitting there with no general. And I want to know what's gonna happen to the body when the, when the red reactive oxygen species does not have a defense mechanism against it. And that might explain why roundup is linked to more than 30 diseases. But I'm jumping way ahead now. Okay.

Dr. Martin Katz: 14:19

I mean that we could stop talking right here. Jeffery, you, you just summarized it brilliantly, but we're going to go step by step. But that was brilliant.

Jeffrey Smith: 14:26

All right, well if you want to go step by step, go ahead.

Dr. Martin Katz: 14:33

This is, this is important to understand.

Dr. John Glidea: 14:37

So this slide, just to go over it quickly mechanistically, is that Nrf-2 the transcription factors, default state is to be degraded and um, it doesn't accumulate in the, in the cell until you get hit with a toxin. So there'll be a big toxin and then Nrf-2 gets activated. Okay.

Jeffrey Smith: 15:00

So it's, so it's a general on demand.

Dr. John Glidea: 15:02

Yes.

Jeffrey Smith: 15:02

So the general is as if this idea, and as soon as there's a thing of a sudden the hologram comes as it now in here and then it can go

Dr. John Glidea: 15:10

Right, right. And so that, that process of it being degraded is interrupted. It accumulates and then goes into the nucleus and then turns on all of the commanders that you were talking about. Okay. Completes the mission. The beautiful part about it is that it turns on whole classes of, of genes that is summarized here at Glutathion Transferases, Thioredoxin system. Energy system including NAD.

Jeffrey Smith: 15:41

I don't, I don't know what each of these mean. I mean they could be the Air Force, the Navy, the Coast Guard, Coast Guard. But where we want to know is eventually, and I know I'm jumping again, is that what are these, if these are not activated, what diseases or symptoms would we experience? So you can tuck that away if it's not handled. I want to come to that because again, I'm always looking for the mechanism between how Roundup is related to so many different diseases. And here we're talking about one specific motive defense against a reaction, a reactive oxygen species. So I get that it's a variety here.

Dr. John Glidea: 16:23

Yeah, perfect. So that's a good segue way to say that to say that any in the case of reactive oxygen species, that ROS molecule will stick around and definitely do damage if this is not turned on. All right. So, um, in the next slide you see that we can jump to our pièce de résistance.

Jeffrey Smith: 16:46

Ah, my question is answered.

Dr. John Glidea: 16:49

So, glyphosate does indeed lower Nrf-2 levels in liver cell line.

Dr. Martin Katz: 16:58

Well let me just say this is hot off the presses.

Jeffrey Smith: 16:58

So, all right, so, so I need to know, I'm looking at, I'm looking at two bars and the first bar is VEH. What is VEH?

Dr. John Glidea: 17:10

So vehicle is, whatever the reagent that you're putting into the model system. You want everything to look exactly the same except the drug in this case, glyphosate, so that the conditions are identical, between the two conditions minus the, the glyphosate insult.

Jeffrey Smith: 17:31

So, so this is almost still one third drop from glyphosate, glyphosate alone or combined with Roundup adjust glyphosate. All right, so that's intense cause roundup is up to 125 times more toxic. So if you, if it's close to a one third drop, the first question is, is: "Does it generally go up and down?" Is this within the normal range of the rollercoaster or is this some like, wow, we've never seen anything like this before. This is, this is the big problem.

Dr. John Glidea: 18:01

Yeah. So I mean, not to toot my horn, but I am really good at developing tests and most of the time the amount of this protein can't be seen. And so it's very, very, you have to have a very, very sensitive assay in order to see it go down. So in most papers you'll look at there's that because they can't see the basal level of NRF two, you can't measure the decrease.

Jeffrey Smith: 18:28

All right. No one knows because no one's measuring. So we just know this now. We do. All right. Okay. Gotcha.

Dr. John Glidea: 18:34

And so what it says though is that all of those downstream players will be lower. And that's the, that's the next slide is that we looked at downstream effect is heme oxygenase. A Well, a well known, uh, gene that's downstream of a inner f two, and it is also down. So you'd see, uh, you would see an effect from that amount of drop and heme oxygenase.

Jeffrey Smith: 19:04

Let's, let's convert it. I mean, as we're talking, because you know, I, from a generic standpoint, Hep G2 means nothing. Liver health means a lot. So if we have a reduction of Hep g two, what kind of liver symptoms or what kind of diseases can you tell might be the there if this were a chronic condition?

Jeffrey Smith: 19:30

Yeah. So HEPG2 are our liver cells. They're human liver cells that are the model of how you get rid of toxins in the body.

Dr. Martin Katz: 19:39

So even though this is just liver, you see this, this effect, you'd see this affect throughout the body. This is how the DNA level, not just at the look, not just at the liver cell. This is that happening at every cell level.

Jeffrey Smith: 19:51

This is really incredible. This is what you've talked about earlier, where you put a stopper on the sink and you can't get rid of the toxins. You know, there was a, there was a research paper that was hypothesizing that glyphosate damaged the p450 cytochrome pathway. Long name doesn't matter. But one thing that does matter about it is that it creates enzymes that helps the liver detox. And so I would say in my lectures that glyphosate is not only a toxin, but it's like the mother of toxins because yeah, we can help. It can block the ability if this theory is true for the liver to detox all the other toxins that are released through the liver in this same pathway. In this case, it's not just through the liver. This is the detox pathway. Did the model is throughout the whole body,

Dr. John Glidea: 20:46 Every cell.

Jeffrey Smith: 20:46

So what you're seeing is the entire detox mechanism for so many toxins is impaired when you have glyphosate. So in other words, it's, it's like letting all the inmates out of the prison and, and having them have their way in society. And it's just the person with the key and all the other toxins, whether it's the neonicotinoid seed treatments on, on the seeds or whether it's the atrazine or the formaldehyde or whatever. All of those are less effectively handled and can wreak havoc in the body amplifying the impact. So this is absolutely critical information. This means that if there was one thing that can really mess us up, it's glyphosate blocking the ability of the body to detox. Okay, go ahead.

Dr. John Glidea: 21:40

Yeah, that would be my prescription for disease. Lower Nrf-2.

Dr. Martin Katz: 21:43

Not a good prescription from the MD side of things.

Jeffrey Smith: 21:51

Let's change that prescription. Okay. So what's the next, what's the next step in this?

Dr. John Glidea: 22:01

We're waiting to see our next slide so we can follow up with the actual, the actual molecule sulforaphane.

Dr. Martin Katz: 22:09

Yeah. So sulforaphane again is a, is a molecule that's coming from a Broccoli, a not very high in mature Broccoli. You have to eat about seven and a half pounds of Broccoli to get the sulforaphane needed. And that's, and that's per day. Exactly. Thank you.

Jeffrey Smith: 22:27

This is a fun story that I'm going to break up the, I'm going to throw out, I'm going to risk it. Go for it. Sam TDOT claimed that the protein there was produced in a genetically

engineered highlights. Seen corn was proven safe because it was found in the soil. And since we eat soil, when we eat the residues on plants, it has a history of safe use. And so it should be approved without any testing. Well, someone calculated how much soil you would have to eat per day to equal the amount of that protein you would get just by having the average amount of corn in your diet as an American male. And it was 22,000 pounds of soil per second. A lot of soil. I don't think we want to eat 22,000 pounds of soil per second. I don't think we want to eat seven and a half pounds of Broccoli per day. But tell me about the Broccoli sprouts and what would be a good chemical clinical dose there.

Dr. Martin Katz: 23:22

So, so the important thing to realize here, we don't want to get too bogged down in details. I certainly love the big picture you're doing. But what we need to realize about sulforaphane is it's coming from precursor molecules and the precursor molecule of sulforaphane is a molecule known as Glucoraphanin. Marketing, very intelligently called itself sulforaphane glucosinolate. But those two things are the same. Sulforaphane glucosinolate and the precursor molecule Glucoraphanin. You have to convert that to sulforaphane when you bring together myrosinase. So when you're chewing the Broccoli -- again we were, we're looking at seed or we're looking at sprouting is when you, when you're chewing the Broccoli sprout, you're releasing this myrosinase from the cell wall. It's combining with Glucoraphanin again also known as self, sulforaphane glucosinolate and you're producing the self, your fein.

Dr. Martin Katz: 24:15

And I'll tell you, in our early days, we really struggled to find a seed, a Broccoli seed that was high in Glucoraphanin. And, and it's a huge variation in what kind of Glucoraphanin you're getting, which is very important to have high glucoraphanin see a good quality seed. Uh, I think there was one time we got a seed, we had to throw the entire batch out when we tested it. There was almost no Glucoraphanin. And so that is one precaution that I send out to people is make sure you're getting one, a very good quality seed, uh, an organic seed if possible and certainly one that is high in Glucoraphanin so you can get this molecule self, your fein. So that's the end product of this uh, breakdown and we'll return to the slide cause, um, it's very important to understand that and where, where we are as a, as a company. So I'm gonna turn it over to John again were, well I'll take this one. It's pretty much more of the same. Um, but there's something specific about self, your fan and the self high self hydro groups if you want to mention that John.

Dr. John Glidea: 25:20

Yeah. So the, this slide is to remind us that um, in a normal state it's actually toxins or reactive oxygen species that turn on this pathway as a protection against itself for itself. Um, but so for Athene, uh, does the same thing without the damage. So for Fein, uh, reacts with the Self Hydro groups on these keep one protein and it activates the pathway, but without the toxins. And um, if you get enough of Sulforaphane, it turns on NRF two. And what this reminds me here is that uh, NRF two at a certain level also goes on and turns on its own transcription. So this system, when it's turned on adequately turn, it gets turned on and then stays on for a while. And so that's another aspect of this pathway that is, um, it comes from

nature. It's a natural molecule, doesn't do damage by itself, but actually maximally stimulates this system and before faint itself.

Jeffrey Smith: 26:24

When you say it creates its own transcription, that's basically, it's like turning on a clone of itself. So it, it, it, when it's in large enough supply, all of a sudden it multiplies itself many fold. And because it's having the sale create many of itself. Yeah. And you can kind of envision why it would be that way is if you get a large dose of a toxin, you have to turn on this system and keep it on for a while in order to get rid of those toxins. Um, but this is mimicking that, but it's in a form that's actually not toxic. So it's kind of turning on that system and keeping it on maximally. All right. For our time.

Jeffrey Smith: 27:02

What, what's going to happen now? What kind of diseases and symptoms we're gonna get rid of. I'm still, I'm still trying to translate it into like, how do will I feel better?

Dr. John Glidea: 27:11

Okay, great. So the, this is a, the followup, adding a few more conditions to our model system of the liver cells have G2 cells. Um, if you add an amount of sulforaphane that's actually achieved in the bloodstream from BrocElite which is two micromole, um, you get a large increase in the amount of interact to produced in these cell lines. So in this case it's more than doubled. And then if you add glyphosate and Sulforaphane, it's still above, its baseline situation. So, it's not inactivated by glyphosate. So the sulforaphane really does bypass this problem.

Jeffrey Smith: 27:57

This is very, this is pretty critical. You know, it's like, when you can point out what glyphosate does and we will re we will link this to many diseases. We will, that's on our list very soon. If it is a major contributor, if this Nrf2 is a major contributor to the lack there of for all the 30 diseases or more that are linked to GMOs and roundup, then if you can block that action in the body, then it's far more than a bandaid. It actually can help dismantle a key negative effect of glyphosate. And this slide that you're showing is ridiculously significant--ridiculously significant in that it actually ends up higher than the control or the vehicle, which is amazing. Okay. Carry on.

Dr. John Glidea: 28:57

Very exciting. So the downstream molecule that we're looking at before heme oxygenase has the same pattern, which means that it also is functional. You're not just getting the transcription factor turned on, but the downstream molecules that are turned on by it also follow the same pattern. And so I'm pretty confident that we're able to bypass the defect that we've identified.

Jeffrey Smith: 29:25

Well, so this means that when the general tells the commanders to do a flanking move, they actually are successful. They're actually working. And it's not, they're not just like, yeah, whatever. They're actually at work. Great. Go ahead.

Dr. Martin Katz: 29:41

So here's where we get to the clinical implications. And you know, we're, we're gonna talk about autism for sure. It's one of those disease processes, which is likely multifactorial. And so when you get a molecule like a Sulforaphane, which is pleiotropic, one of my favorite words, it just has a significant effect in numerous different ways. And so we want to talk about autism, but what's striking to me is when we go to these medical conferences, you hear things like dementia, cardiovascular disease, cancer, and the underlying mechanism to so many of these things, again, is the things we talked about earlier. This kitchen sink, this oxidative stress problem, this inflammatory problem, the GI system going out of whack. So it's an oxidative stress and inflammatory problem that's

Dr. Martin Katz: 30:31

-creating so much of this disease. So autism is this problem that we're seeing an incredible increase incidence and the numbers speak for themselves. And so, when you look at autism and you see a change in autism and improvement in autism, it ought to strike you as being significant. And this was a study done at Johns Hopkins. Paul Taluy back in 1992 was one of the founders--the late Paul Taluy--was one of the founders of Sulforaphane, up there. Jed Fe came in as a biochemist and he's really educated us on the benefits of Sulforaphane, and a fair amount of the studies are thanks to him and he's broccoli sprout extract, which is very high in Sulforaphane. So this was a study done there at Johns Hopkins on autism and how it lowers this. And what's important to understand about this study was a 25 week study.

Dr. Martin Katz: 31:29

Sulforaphane was given for the first 18 weeks. It was in a group that's fairly recalcitrant to treatment and this was young men ages 13 to 27. So this is a group that doesn't often respond to treatment. And these kids based on their size were given different doses of Sulforaphane clinically significant dosing depending on their age and size. And what they saw was this incredible improvement in their autism scores from social interaction to verbal communication to abnormal behavior. And so here you see a couple four different boxes with red and blue on it. Red again is kind of what John was describing before that vehicle. It's the controls, the placebo. And so these are scores that on irritability stereotypically means this repetitive behavior that we see, in kids with autism, hyperactivity, lethargy. And you can see the red slide over that 1825 week period didn't change.

Dr. Martin Katz: 32:32

When you look at the Blue Line, the Blue Line goes down until that 18 week period quite significantly--certainly clinically significant--up until 18 weeks where a self urethane was withdrawn and the kids again returned back to their baseline back up to that control level. And so this is a significant study, a significant find as far as clinical significance. And again, when you look at Sulforaphane and its effect, again, I love this word, I'll use it as many

times in a day as I can, it's pleiotropic. So that's why we see those 39 different advantages. This again, looking at the gut, I'll give this one up to John to some degree, but when you look at autism, again, 80% of kids with autism have a problem in their gut. And again, is it glyphosate? One would argue, but I'm going to give this slide up to John. Talk about further.

Dr. John Glidea: 33:29

Yeah, we like this slide just because of sulforaphane effecting so many aspects of uh, the lining of your small and large intestines. And just quickly, it works on tight junctions, leads to increases in butyric acid, GLP2 is just a repair enzyme system that's necessary for rebuilding injured enterocytes, the, the cells that line the gut. It also decreases IL6, which is a cytokine that is involved in inflammation. And then of course increasing Nrf2 is affecting all those pathways that we were talking about before. So, in the important pathways, it's really working well.

Jeffrey Smith: 34:19

So this is again, IL6, interleukin six is what came up next. I just want you to know that, when I spoke at several medical conferences, I talked about interleukin six as one of the cytokines that moves in the wrong direction when animals were exposed to GMOs. We don't know if it was the GMOs in the roundup. Similarly, the tight junctions we know can be broken apart through glyphosate. Um, we know that the dementia and autism both have responded very positively to a removal of glyphosate from the diet. Similarly, autism and dementia and deaths from dementia are on the rise in parallel with the increased use of roundup sprayed on GMOs. So its very-- and also gastrointestinal disorders, uh, 85.2% of the people that we surveyed of 3000, 256 people reported getting better from digestive problems when they switched to a non GMO and largely organic diet. Again, eliminating GMOs and roundup in most cases. And so we can see how the Nrf2 could be a major delivery mechanism for some of the negative side of a nonorganic diet. Go ahead.

Dr. Martin Katz: 35:35

Yeah. And Jeffrey, let me just say, I thank so much for what you do there at IRT. It's just incredible. I don't think we can get rid of glyphosate fast enough. Um, based on the fact, again, we talk about the food system. Uh, but unfortunately this is a molecule that doesn't stop at food as you're well aware of. And so again, the water supply. And so thank you so much for doing what you do to help educate people and hopefully get this molecule out of use as quickly as possible, for sure. Thank you for that. Yeah. Yeah. So John,

Dr. John Glidea: 36:11

yeah, so that's our next test is we did a clinical study where we did a placebo controlled study. We have six individuals where we took a pre study measurement of IL6 in urine. On the first day we, took a placebo and then on the second day took BrocElite, the normal dose of BrocElite, and measured IL6 in the urine and within the first day can get a dramatic decrease in IL6 in urine, which means to me that likely, the inflammation in the kidney is decreased dramatically. And I know from your work before is that kidney disease for sure is one of the early signs of glyphosate usage, end stage renal failure. So, this next slide is basically saying if, if Nrf2 was super important, we would say, unbelievably sulforaphane

also inhibits at Kappa B, which is the main driver of inflammation. So the mothership. So what, there's a lot of molecules that affect, inflammation, but most of those molecules that affect them, um, have difficulties in bioavailability. Curcumin is really strong in this pathway. Um, but there's bioavailability problems with curcumin.

Jeffrey Smith: 37:48

So let me, let me, let me make that clear. Because curcumin is basically found in turmeric. Turmeric is known as anti-inflammatory, right? But like in [inaudible], they say, well you can, if you have it with black pepper or a different type of pepper, it'll help increase the bioavailability of it because turmeric alone may not get into the system. People have been fermenting turmeric, different ways to get the turmeric into the body. And turmeric is one of the ways that it creates anti-inflammation or one of the ways that it solves the inflammatory puzzle is with this pathway. And you're saying, sulforaphane, you don't need the turmeric necessarily if you take the sulforaphane thing because it acts directly on this. And so if, as long as it's bioavailable, as long as it does its work, it does what we're trying to get the turmeric to do.

Dr. Martin Katz: 38:40

There's some clarification on that. I still love to turmeric and specifically curcumin. You know, so about 3% David. The ghost voice may say 2%, but I'm just going with 3% of a turmeric is curcumin. And again, only about, um, just rough numbers, 10% of that is absorbed. You're not getting a lot of bioavailability certainly when you're using turmeric. In my clinic I liked to use curcumin. Um, I like to use bioavailable forms of curcumin and I would like to say stay in touch cause we're working hard on creating a bioavailable form of curcumin because it is so much, it's more effective at NF Kappa B. But again, because sulforaphane is a hydrophilic molecule absorbed very well, especially in the form we have it in, in BrocElite, very well absorbed into the body. It does do work on NF Kappa B, which again, going back to human disease, you're looking at oxidative stress balance and inflammation creating most of the problems. So if you can address that, that is, as you say, huge. Okay.

Dr. John Glidea: 39:47

Yeah, we like to, um, to also say that maybe the lack of bioavailability for curcumin is good in some cases because it does get into the cells lining the small and large intestine. So that's probably where the majority of its effect that I don't know if people are listening to this and say, well, I feel the effects of curcumin and it's probably acting at the small and large intestines. Um, but you, if you have a pain in your knee from inflammation, you're much more likely to, for Sulforaphane to have to affect that pain than curcumin.

Jeffrey Smith: 40:24

Gotcha. Alright. So, inflammation has made the cover of Time magazine as you know, years ago as the source of most diseases. And so if we can turn around inflammation. So just to recap too quickly, we have the sulforaphane not only increases Nrf2, which in turn turns on the entire army, get rid of the reactive oxygen species.

Dr. Martin Katz: 40:55 Let's not forget Navy, Coast Guard.

Jeffrey Smith: 40:57

No, yeah, yeah. There, yeah. Navy, Army,

Dr. Martin Katz: 41:00 Right

Jeffrey Smith: 41:01

Yeah. It all, but sir, if you're irrespective of the Nrf2, it also inhibits the big mean dragon inflammation through this other pathway irrespective of Nrf2. Nrf2 can just, even if that weren't around, it does this as well. Let's bring in the Marine Corps. Yeah. Alright. There we go. So what's next?

Dr. Martin Katz: 41:24

You mean that's it. That's all it does. Yeah. So again, we want to just go back to this idea of how we're different. And so John to my right over here, I'm the MD, he's the Phd. We make a great team, but this guy is remarkably intelligent. And so, you know, way back when we had a dear friend who was struggling with disease, we were able to get her cells cultured. We were able to put different nutraceuticals on herself and her cells responded very positively, uh, to sulforaphane. And so, um, unfortunately she passed away. We, we looked for sulforaphane, we tried to do broccoli sprouts. She was too sick. She wouldn't do Broccoli sprouts. We looked for it out there in um, the supplement world. And again, what we found was the precursor molecules. And this was a lady who was unfortunately, uh, ill.

Dr. Martin Katz: 42:21

And so if you're asking the system to convert sulforaphane glucosinolate, which again is Glucoraphanin to the stable molecules Sulforaphane, it's going to have a really difficult time and studies suggest that that's happening. Maybe 5, 10%. I think you mentioned that earlier. So before she didn't know she was going to pass away, but unfortunately she passed away. Uh, but before she did, she urged John to please figure out how to stabilize this molecule and get it to people who are really going to need it. And we would argue it's, it's a molecule that's needed with the toxic environment that we live in with looking at all of these increasing chronic diseases. And so John went to the lab and over a period of time he was able to figure out the stabilized form of sulforaphane. So it's not a precursor molecule, it's not myrosinase, it is the molecule you're after. And again, uh, I'll let John, uh, specify how a bioavailable it is. You want to talk to that a little bit?

Dr. John Glidea: 43:20

Yeah. So the, the bottom line is that sulforaphane is very bioavailable, upwards of 90% bioavailable or higher. Um, the precursor molecules there in the range of 2 to 5%. And, um, I like to add that I probably wouldn't want to make a huge amount of sulforaphane right in my colon if it's a antimicrobial. Um, so, sulforaphane is absorbed earlier in the digestive track and um, it doesn't have any problems with bioavailability. And um, just to go back, one step is, um, we have tested the stability of our sulforaphane and compared it to just straight sulforaphane and it is stable for the amount of time that we put on our label. So you're

guaranteed to have what's in the bottle, um, when you take it. Yup. Third Party testing, multiple third party testing, including Jed Fahey. Yeah.

Jeffrey Smith: 44:22

So let me, let me get this clear because this, when you guys told me about this, and I heard this from David a while back, it was really exciting to me cause I mean

Jeffrey Smith: 44:31

there's like 2000 articles about sulforaphane that make it this champion and you call it like a pleatropic, yeah, I call it the utility infielder, it can take any position and it actually works on every position at the same time. Um, so, uh, what I said, great. So now you're going to be telling everyone go and Google sulforaphane and buy it. But what you're saying is that if you just eat the Broccoli, uh, only 5%, maybe 10% of the, of the chemical will actually result in something that's bioavailable. But with yours it's actually stabilized and 90% is available. Um, is that, was that, did I get it right?

Dr. Martin Katz: 45:19

Yeah. Well, I mean, I would say, you know, in the rare case that somebody walks into my office and they're incredibly healthy and they are doing the right Broccoli sprout with the right amount of Glucoraphanin, they can possibly get 40%, but those are a lot of mighty ifs. So that's why we wanted to take that out of the equation. And, uh, because this is such an important molecule, um, and again, thank you so much for helping us get the word out. It's very, uh, it's a great privilege to be able to talk to this many people this quickly in this form to help them understand what an important molecule this is. Again, if you're, if you've heard of Turmeric, you're taking Turmeric, you've heard of Curcumin, you're taking Curcumin, there's no question in my mind, certainly that you want to be taking sulforaphane.

Dr. Martin Katz: 46:02

Because of the incredible effects it has on the human body and on chronic disease, which is affecting so many of us, our loved ones. And that's why we started the company. We were, we really wanted to make an impact on our loved ones, a loved one specifically. But, but obviously we all have loved ones and have an impact on our community. Which is how it works. And your, you're brilliant in your, in your delivery. We're not. So we appreciate, we're the scientists. We're just trying to get the word out. And so having, uh, incredible people like your round is a blessing.

Jeffrey Smith: 46:36

Thank you. Thank you. Thank you. And, and the thing is, I am moved by the story where this whole invention or discovery, cause it's a combination, was created specifically because of one person who had a life threatening disease and you did your best as we, you know, when someone has a life threatening disease, people just drop everything and then focus. And that tends to drive a lot of innovation. You know, that the emergencies, whether it's life threatening for an individual, whether it's civilization, whatever, um, you know, it's supposedly as happening with global climate chaos that we're exposed to come up with

things i don't know how fast that's happening. But so we have a situation where you dropped everything and said, okay, what can we do? Well, Broccoli sprouts didn't work. And then the everyone else's sulforaphane wasn't good enough because it was only giving 5 to 10%.

Jeffrey Smith: 47:29

And even then you don't know if it's 5%, 10% of what, because it may not have the right seeds because it wouldn't have that thing that begins with a g. That's Glucoraphanin. So, um, it's interesting how you solved or you went after a problem based on one person who pleaded with you to make it available. That is, that's a powerful way for something. Thank you John for making that happen. That's really, really deep for me. I mean that's like that's it could be looked upon in the future as the story as to how this, this molecule then was able to help so many people and and, and I want you to know that, I didn't mention this earlier but when I was reading all those diseases and disorders and we only got through less than half, every single one of those is linked to GMOs and roundup.

Jeffrey Smith: 48:26

Every single one of those, you can put into the epidemiological data where those diseases are on the rise in parallel with the increased use of GMOs and roundup, every single one of them has been reported in our survey and in 150 lectures where I interviewed audiences including two dozen in medical conferences where people described that they were, their patients got better from those diseases when they switched to an organic or non GMO diet. So, uh, I am very excited about the possibility that we have uncovered a particular mode of action of glyphosate that is linked to these diseases. And we at the same time have a counter measure because it's really a bummer to not have the countermeasure. It's like one thing, I don't want to say deaf disease, destruction and despair, GMOs and roundup. Goodbye. No, I want to, I want to give people an opportunity to try something to counteract it. All right, so go ahead.

Dr. Martin Katz: 49:29

No, I, we're so excited because we see the problem and you go to these conferences and you hear the problem and you're, you're cliffhanging what's the solution? And oftentimes you're not left with one, you know, and so we're really excited to be able to bring another solution to this problem, which is massive as you have pointed out.

Jeffrey Smith: 49:49

All right. So no, I think what's we want to remind people that they can get it available at a discount. Um, uh, okay. This here we are, how did I know David Roberts, our disembodied ghost voice is going to bring that up. You get 20% off. Um, and it gives you the code IRT meaning institute for Responsible Technology. So, thank you very much for your work and you guys can, if people are interested, they can just go on the link on the page where the, this webinar is held. Thank you very much for your time and attention on this, and I'm looking forward to as I always do because I've introduced various, um, healing from GMOs and roundup modalities and protocols and they always say asking people to respond to us as to what they've noticed. But in this case, it's going to be across the board because if it

actually helps counter the reactive oxygen species, if it helps reduce inflammation, then there's going to be a number of chronic conditions that might reverse or completely improve if this is, if this is your key molecule for you.

Dr. Martin Katz: 51:04

So yeah, I would say in my clinical study, what I've seen is patients definitely come in with very specific improvements in certain things. But I would say the biggest thing I've heard is improved energy, improved brain function, just feeling a lot better. And again, certainly hearing the very specifics as far as hand inflammation with OA or knee. Um, but overall I'll also say that we're happy if somebody, um, is dissatisfied with the product is 100% guarantee. So we feel very strongly about this product. And so if you have a problem, let us know if it's GI related, this is, um, a product that will, if, if your guts may be not that healthy, it can have an effects. I often encourage my patients if they're having a little upset, um, to take it with food. Drink a good amount of water, obviously. Um, good quality water please. And so making sure that you make that effort and I can't help myself, but make sure you're also not stressing out about this. You control your stress, you get enough sleep, you make sure you get your exercise, you eat well and please, please, please and thank you again for creating better communities. Cause uh, if you look at the blue zones, communities are incredibly important, so make sure you're doing all of those important things.

Jeffrey Smith: 52:18

The number two reported improvement in all the 150 lectures where I asked the question about the results of a organic and non GMO diet was increased energy and reduced brain fog. And it's interesting that the metabolic pathway that I was looking at this whole time was the mitochondria, which is the energy centers and we haven't linked sulforaphane to mitochondria, and I don't know if that's going to be related, but it would be interesting if we could, cause we do know that glyphosate is a mitochondrial toxin and we do know that it's an antibiotic, and we do know that it causes oxidative stress and genotoxicity and could possibly interfere with the, the um, production of neurotransmitters like Serotonin and can suppress digestive enzymes. There's a lot of other competing mechanisms to explain why it's related to the 30 diseases, but I'm telling you what you've described and the changes that occur both in the levels of the immediate change and also the impact on the detoxification pathway

Jeffrey Smith: 53:20

that's exemplified by the liver, but found in all the different cells that tells me that if we can get the body's detox working, I always talk about we need to detox, rebuild and repair. If we can just get that first thing going, the body has a lot of intelligence to do the rebuilding and repairing. If we can get the detox moving and then add that to inflammation and you've got a good combination. So thank you thank you doctors, John and Martin and I appreciate the energy and intelligence that went into the stabilization of this molecule. And I'm looking forward to hearing the results from people who decided to see if it works for them.

Dr. Martin Katz: 53:59

Thank you so incredibly much. Look forward to it.

Jeffrey Smith: 54:03

Safe eating everyone.