The Role of Metabolic Health in Better COVID-19 Outcomes: A Special Interview With Dr. Paul Saladino

By Dr. Joseph Mercola

Dr. Mercola:

Welcome everyone. This is Dr. Mercola, helping you take control of your health, and we have a real treat today. We have a return guest, Dr. Paul Saladino, who was also known as the Carnivore MD. He's written a great book, which we've interviewed him for in the past, called "The Carnivore Code." It really is, in my view at least, the best book out there about the carnivore diet if you're interested in pursuing that for personal health goals, which is something you might want to consider, especially if you have autoimmune problems, I couldn't recommend it more heartily.

Dr. Mercola:

But today we're going to discuss something that he's also acquired a level of expertise in because Paul is a board-certified psychiatrist, believe it or not, but he doesn't do that, but he has OCD, he has obsessive compulsive disorder, so when he focuses on a topic, he just researches the heck out of it and becomes essentially almost an instant expert. And he's done a marvelous job of the science supporting the natural lifestyle strategies that we can take to optimize our immune system and essentially defeat, not only COVID-19, but virtually any other infectious agent that is a challenge to us. So welcome, and thank you for joining us today.

Dr. Saladino:

Thanks for having me on, that's such a great introduction. I'm honored and humbled, my friend. It's good to be here with you. I will also add, you'll appreciate this, that I just got board-certified as a physician nutrition specialist. So I have two board certifications now.

Dr. Mercola:

Wow. Congratulations. That is great.

Dr. Saladino:

So, and that was an interesting exam. So yeah, the psychiatry is interesting and the psychiatry was a jumping off point for thinking about how immune function and metabolic health affects mental health. And as you're suggesting, I quickly realized that everything in the body was connected and I couldn't just focus on the brain without focusing on the rest of the body, and that's led us to where we are today.

Dr. Mercola:

And let me just add one other characteristic for Dr. Saladino, is that he is fit, he's clearly within the one-tenth of 1% of top healthy, fit people who I know. I mean, he's totally not only committed to the optimal metabolic diet, but also engaging in a fitness program that keeps him healthy.

Dr. Saladino:

And we'll probably talk about that study.

Dr. Mercola:

Yeah, because the exercise is great. It's just like, “Whoa.”

Dr. Saladino:

Well, before the podcast, you were regaling me with stories of your own health and what you're doing right now is pretty impressive with that 315-pound deadlift, my friend, so [inaudible 00:02:34].

Dr. Mercola:

335, sir.

Dr. Saladino:

335? So, Dr. Mercola's not a slouch either.

Dr. Mercola:

Yeah. Three pounds, three plates plus. But yeah, it's fun, man. It's like normally resistance training, you're like, "Oh no, I have to do that again." But I just like, can't wait. I just like, “Whoa.” And there are a lot of cool things too. Like when you're doing resistance training with weighted belts, like doing pullups with belts, or even doing pushups with weighted belts, which is pretty intriguing.

Dr. Saladino:

Yeah. It's part of being a healthy human, right? It's one of those pieces of it all. So yeah, but I think should we start this discussion of metabolic health?

Dr. Mercola:

Absolutely. Yeah. So, the reason I wanted you on is that in my viewpoint, two of the most important characteristics that you could follow to minimize your likelihood of acquired infection is, one, optimizing your vitamin D level, which we don't have to discuss today because I'm going deep on that, and it's a whole campaign we're running, but then two, closely follow with that, is becoming metabolically fit, metabolically flexible, insulin-sensitive, all synonyms essentially. So, that's what I wanted to focus on, and I'm sure you've got a lot of slides you want to show us today and we're going to go deep, so people can understand it's not just a magic bullet pill you swallow with vitamin D, it's also the lifestyle you're engaging in that's going to go optimize your immune function.

Dr. Saladino:

Yeah. I couldn't agree with you more. I think that as we are faced with coronavirus, it's a reminder of the metabolic health and how critical that is for us as humans. I think that's so much of the media focus right now is on the next drug or the coming vaccine, whether the drug is hydroxychloroquine or chloroquine or ritonavir or remdesivir or the newest antibiotic, Teicoplanin or Ribavirin or whatever, but I think that all of those strategies, you and I would agree strongly, kind of miss the point, and the point is that those are just Band-Aids. If we find a drug, that's fantastic. It's always going to have a side effect, but no drug is going to protect us from the next infection and the next infection, and the next infection. And one of the things that we're going to talk about today, which is so eerie, but revealing, is that all of this data suggesting that coronavirus susceptibility is intimately connected with metabolic health.

Dr. Saladino:

We knew this when we were talking about MERS, Middle Eastern respiratory syndrome, when we were talking about SARS-CoV-1, which is the SARS virus, when we were talking about the flu virus from the

past. So we've known forever and ever that metabolic health, and we can more carefully define that term in a moment, is critical for the immune function. This is basically what I, and I believe you, consider to be one of the most important, if not the most important field in emerging medicine, which is immunometabolism, the connections between metabolism and metabolic health and the immune system. I just want to start sharp start with a couple of key slides to share here. So this is a study that you and I have shared in the past. I talk about this in my book, "The Carnivore Code."

Dr. Mercola:

This is a classic, everyone needs to bookmark this, and they can use it, because this is shocking information it has. I mean, and this is the literature support for this shocking characteristic of the United States and most Western cultures.

Dr. Saladino:

And so this is from NHANES, this is not some esoteric database. This is the National Health and Nutrition Examination Survey from 2009 to 2016. And they use criteria that we used to define the metabolic syndrome, syndrome X. They use a waist circumference of less than 102 or 88 centimeters for men and women respectively, use a fasting glucose of less than a hundred milligrams per deciliter, hemoglobin A1c of less than 5.7, a systolic blood pressure less than 120, a diastolic blood pressure less than 80, and triglycerides less than 150, in addition to an HDL of greater than 40 or 50 for men and women, respectively, as criteria for metabolic health. I think this is a great place to start.

Dr. Mercola:

And you left out an important point, and not taking any related medication.

Dr. Saladino:

Exactly. And what they found from NHANES, and this is really the point that is so striking, is that only 12.2% of people, metabolically healthy Americans, met that criteria, 12.2%. That means 88% of people are metabolically unhealthy or have at least one of these metrics that suggests that they may have some degree of metabolic unhealth. And if you-

Dr. Mercola:

Now, before you go on, that data is at least four years old.

Dr. Saladino:

Exactly.

Dr. Mercola:

So, what do you think the real stats are?

Dr. Saladino:

Even higher. And these next slides from the CDC (Centers for Disease Control and Prevention), the percentage of adults age 20 and over with obesity, and obesity is just an arbitrary measure of a body mass index, 39.8%. And this goes to 2016 as well, so about the same timeframe as the NHANES data. The percentage of adults age 20 and over with overweight, including obesity which is a little bit more broad, 71% in 2016. So, if you doubt those numbers, you have to pay attention. You can't ignore the CDC, which four years ago, 71% of our population was overweight or obese, which so often correlates with

metabolic unhealth, metabolic dysfunction. And that NHANES survey says only 12% of the population is metabolically “elite,” metabolically healthy.

Dr. Saladino:

Now, it's not so much an indictment on our population, it's an indication, it's a real call-to-arms to say, "This is what we should be talking about," and it's a real jumping-off point for discussions about how metabolic unhealth has repeatedly been connected with worse outcomes, COVID-19, the disease associated with SARS-CoV-2, SARS-CoV-1 and MERS, as well as seasonal flu. It's just such a huge piece of it, and I don't know about you, but I haven't really seen much media coverage of this at all.

Dr. Mercola:

No, I was just going to address that. So, what the media says is that the comorbidities are obesity, diabetes and age and being of color, and they don't talk about the true issues, which are vitamin D deficiency and insulin resistance.

Dr. Saladino:

And if you look at it, insulin resistance often underlies many of those comorbidities, and I'll show data to suggest that as we age more of the population becomes insulin-resistant, probably because we become a little less resilient to nutrient deficiency and we become a little more sensitive to the lifestyle factors that make us insulin resistant in the first place. But with aging, we see a direct correlation with insulin resistance.

Dr. Mercola:

This is a key point because many clinical characteristics of aging humans are ascribed to aging.

Dr. Saladino:

Exactly.

Dr. Mercola:

But I want you to expand that because I don't think that's necessarily true.

Dr. Saladino:

I don't think it is either, to tell you the truth. And you and I have also talked about this paper from David Sinclair.

Dr. Mercola:

Yeah, I loved that one. I know you didn't particularly care for it, but he does a nice review of the-

Dr. Saladino:

He does. It's a great review. And David is a friend of both of ours and I've had him on my podcast, and I know you've talked to him as well, and David is – but I think that the point that I really want to make and sort of highlight here and really put a fine discussion on is exactly what you're suggesting. But aging, the immune compromise, the insulin resistance that comes with aging is not inevitable, it's an assumption because everyone else does it, because 88% of the population's metabolically healthy. But the narrative here is very important because if we can escape the immunologic sort of dysfunction and insulin resistance that so often accompanies aging, then we can totally change our lifestyle. It's an empowering perspective versus an inevitability, and that's my fear, is that David's perspective is not highlighting

enough of what we can do to avoid these things in humans, and that's the only issue that I take with that article from him. But I think it's amazing work in general.

Dr. Mercola:

He's not OCD like us, but he's a smart cookie for sure.

Dr. Saladino:

He's definitely a smart guy, and I think that for better or for worse he sometimes benefits from collaborations with people like us who can discuss a little more of the context of all this stuff. So, in this study, it's definitely a detailed study, but this is exactly what I'm talking about. This is from Nature Medicine and it was published, I believe, even this year or last year, and they're doing what is called "multi-omics," it's high-dimensional longitudinal monitoring. And what they're looking for is immune age and metabolic age, and you can look at multiple measures of immunologic aging by looking at different varying proportions of immune cell subsets. And we'll probably into that in more detail later, this is all very esoteric and it looks kind of complex on the screen, but the takeaway, the very high level from that paper is that immune aging is associated with relative changes in different types of immune system response. And what's very interesting is we see the same types of immune system response changes mirrored in people who have more severe coronavirus outcomes. And I'll just clarify that to make sure everybody understands.

Dr. Saladino:

So, one of the pretty classic changes that we see associated with insulin resistance, obesity and metabolic syndrome – these are all synonyms – is overactivation of the innate immune system with decreasing activity in the adaptive immune system. Set another way or characterized another way, we can look at the cytokines associated with different T-helper subsets. I don't want to get too granular here, but what we generally see at a high level is that certain cytokines for T-helper 2 tend to predominate over T-helper 1, and you get changes in the way the innate and adaptive immune systems are responding to invaders. And that's what we see in people as they age. That's associated with activation of different inflammasomes, like the NLRP3 inflammasome, which is kind of more associated with that innate immune system. So, I'll just pause for a moment.

Dr. Saladino:

Most of your listeners will know this. The innate immune system is the stuff that's always activated, it's always on the front row, it's dendritic cells, it's macrophages, it's natural killer cells, it's neutrophils. The adaptive immune system is T cells and B cells. And so basically what we're seeing is-

Dr. Mercola:

Is also your physical barrier, the epithelial cells that prevent the organisms from coming in.

Dr. Saladino:

Yeah. And so what we see in immunologic compromise, what we see in insulin resistance is that the innate immune system gets overactivated at the expense of the adaptive immune system. And you might say, "Oh, that's good. One part of the immune system is more activated." But what you have happening is that the adaptive immune system isn't able to be activated properly and the resolution of the inflammation doesn't happen in the way it should.

Dr. Saladino:

And this is exactly what we see with coronavirus in so many people who are so tragically perishing, or having severe outcomes, they're having this cytokine storm. And that's when you get an overactivation of one part of the immune system and the other part of the immune system can't really calm it down. Your body sets a huge fire, and none of the firemen who are supposed to come and set it, kind of quell the blaze, show up, and your immune system goes overactivated. So, that's just kind of a little dipping-the-toe-into-the-water here and foreshadowing what we'll talk about today. But the overarching principle is that it's not biologic age in the sense of how many years we've been alive, it's biologic age in terms of immune and metabolic age. And those are more malleable than we are led to believe.

Dr. Saladino:

And that's something that both you and I believe strongly, but then Western medicine hasn't caught on yet. I'm taught in medical school, you were taught medical school. I'm sure, "Hey, it's just a disease of aging." And I said, "No, no, no, no, no, no, it's totally malleable. And we can change that."

Dr. Mercola:

That's great. Yeah.

Dr. Saladino:

So, and from that perspective, we have a totally different way to attack or way to think about coronavirus. If you look at the news media, like I said, it's a lot of fear-based messaging. It's a lot of fear that's aimed at saying, "Hey, here's a new spike of the virus." Even today, as we're talking, the news media is reporting on new spikes of virus and, "It's popping up here, it's popping up there," but nobody's really talking about what you can do to change your susceptibility to this virus. And that's what I want to empower people to understand is that this immunologic tolerance, this insulin resistance paradigm has not been discussed at all despite the fact that there are tons of evidence that it's really, really important. And I mean, you and I have already shared articles that speak to this, and you will recognize both of these articles.

Dr. Saladino:

So, this is one of the most striking ones, the "Association of Blood Glucose Control and Outcomes in Patients With COVID-19 and Pre-Existing Type 2 Diabetes." And basically what they're finding is that when the blood sugar is well-controlled and there's less glycemic variability, people do better with coronavirus. Okay, that makes more sense. But when people do have much higher levels of glycemic variability, that is presumed more insulin resistance, worse in control, they do much worse. And so there's really no question at this point that glycemic variability, overall metabolic status, overall metabolic health are critical, and then you-

Dr. Mercola:

But the mistake here is not to get that control with drugs and pharmacological-

Dr. Saladino:

Exactly. How do we do that with lifestyle? And we can talk about that for sure. So this is another paper that you and I have talked about, you and I have shared, and it's a great easy index, the triglyceride to glucose index. And imagine that, there's an association of the insulin resistance marker, the TyG index, this is fasting triglycerides, fasting glucose, with the severity and mortality of COVID-19. This should be, in my opinion, mainstream news headlines, and the headlines should be, "You can be stronger against coronavirus. You can have a stronger immune system. You can decrease your risk of having a severe coronavirus outcome." But instead it's mostly fear, it's, "Hide in your homes. What's the next drug that's going to save us?"

Dr. Mercola:

That's an unusual marker. I mean, we know about the triglyceride-to-HDL ratio as being probably one of the most accurate predictors for heart disease, but the triglycerides-to-fasting glucose was a new one for me. I hadn't seen it before.

Dr. Saladino:

Yeah. And in my book I talk about triglyceride-to-HDL ratio. I think it's a great ratio. As an aside, so many physicians or people in the health space get so hung up on LDL, but most people miss the importance of the other lipid markers that are super easy to get. Triglycerides and HDL tell you so much, especially the ratio in the majority of people. I think in the near future we're going to get some clinical indices of HDL function, which are going to make LDL obsolete because there will be so much research that shows a discordance between levels of LDL in individuals who are doing low-carb diets or who are metabolically healthy and may have a higher LDL, but also a higher HDL and a lower triglyceride, and I think in those people, you will see a very robust HDL function. And all of the scientists in the lipid sphere will be left scratching their heads and saying, "There's so much discordance here. How can people have a high LDL and yet very good HDL function and low cardiac risk?"

Dr. Saladino:

And I think that that will hopefully be the beginning of sort of the dismantling of the LDL-centric hypothesis or LDL-centric paradigm for cardiovascular disease. But as we said in the beginning of this show, what we know very clearly is these are all connected. And this is what's so interesting to me is trying to connect the dots and understanding that cardiovascular health is immune health. That is immunometabolism. That's exactly what we're talking about here, that what you do to improve your heart health is also what you do to improve your immune health, is also what you do to improve your brain health, is also how you decrease your risk of Alzheimer's, is also how you decrease your risk of seasonal flu and every other single infectious illness that you will all encounter for the rest of your lives. It's one thing rather than 60 different drugs that the pharmaceutical industry is trying to just Band-Aid on top of Band-Aid, on top of Band-Aid, which is why that paradigm doesn't work.

Dr. Mercola:

Absolutely. No question about it.

Dr. Saladino:

And so that's just such a scary thing. Now, since we're on the topic of LDL, I want to share a little bit about that, that I saw with coronavirus. And what you'll see here is also pretty striking that when people go to the hospital with coronavirus, low levels of LDL are associated with more severity of COVID-19. And so, here are the results. LDL-c and total cholesterol levels were significantly lower in COVID-19 patients as compared with normal subjects. There were significant and gradual decreases in LDL-c and total cholesterol in all of the groups, so severe and across all three groups. And so to me, this is just a really interesting idea in two ways.

Dr. Saladino:

In the book, “The Carnivore Code,” I challenged this LDL hypothesis, this LDL-centric hypothesis of cardiovascular disease and I share a lot of data about how important in the immune system LDL actually is. And I think that's exactly what we're seeing in this study, that when your body is doing an immunologic thing, when your body is fighting a pathogen, it totally makes sense that the LDL would be a part of that in either LDLs consumed, or those who have lower LDL are more susceptible to infection. And this is something that we see over and over, and there are even genetic syndromes of very low LDL,

specifically one called Smith-Lemli-Opitz syndrome involving a genetic polymorphism in an enzyme that makes cholesterol. And in this situation, people with this syndrome have very bad infections and they can be rescued by giving them egg yolks. So these people are given cholesterol in the form of egg yolks, or they're given supplemental cholesterol and they do much better.

Dr. Saladino:

And it's pretty clear that cholesterol, which is packaged into this LDL lipoprotein particle is intimately involved in the immune response. And so, in someone who is metabolically healthy, a higher LDL above a hundred or 150, or even 200 milligrams per deciliter might not be the horrible thing that we've all been taught it is, especially if the HDL, the triglycerides, the triglyceride to glucose index, that glycemic variability, are all pointing toward metabolic health. And papers like this, I mean, multiple papers like this have come out with coronavirus suggesting that those with lower LDL do worse. And the second part of this that I really want to just point out to people-

Dr. Mercola:

Before you jump in, let me give you an anecdotal confirmation and testimonial.

Dr. Saladino:

Yeah, please do.

Dr. Mercola:

I've got beta thalassemia, and as a consequence of that, I was convinced for the first 65 years of my life that this was responsible for producing the low cholesterol, because my dad had low cholesterol too, and there was nothing I could do to increase it. But I started a carnivore-ish diet.

Dr. Saladino:

I love it.

Dr. Mercola:

I wasn't completely carnivore. And for the first time in my life, my cholesterol rose over 200. I mean, it's like 150. It was as low as 75 when I was younger, which is insane.

PART 1 OF 4 ENDS [00:23:04]

If I didn't know anything to do to correct it so that is interesting, because I didn't recall reading that in your book about the low LDL being a risk factor for infection. I was so grateful that it normalized by following a carnivorous diet.

Dr. Saladino:

I think that that's such an interesting alternative narrative because most physicians would say, "Joe, you've got a cholesterol of 75. That's great." Here we might say-

Dr. Mercola:

Yeah. That was total cholesterol.

Dr. Saladino:

That's incredibly low. That's incredibly low. Here now we can say, "Is that higher cholesterol, both LDL and other particles?" HDL, we know, has an immune role too. That's probably giving you an immunologic protection and these are epidemiology studies. I note many studies in the book that associate longevity and persistence of mental function and mental clarity with higher levels of LDL as people age. There's the Leiden 85-plus Study.

Dr. Saladino:

There are many studies like that, that say that, "Hey, if you look at people who are over the age of 65, those who live the longest have the highest cholesterol." Doesn't that just break the model and really challenge the paradigm that there's definitely more to heart disease than just a "high LDL equals heart disease?" The hypothesis that I advanced in my book and in my work and other people also suggest is that, "Hey, it's about metabolic health. It's about context."

Dr. Saladino:

This LDL is a valuable immunologic particle and we can't just get so myopic looking at LDL. We have to think about it in terms of all these other measures, just like we do with coronavirus. That is what's so interesting, is that, "Hey, we're thinking about these things in the same way for all these diseases, whether it's infectious, metabolic, cardiovascular, et cetera." Super interesting stuff.

Dr. Mercola:

What I neglected to mention in your intro is that you've also started this regular series Controversial Carnivores, is it? Isn't it?

Dr. Saladino:

Controversial Thoughts?

Dr. Mercola:

Controversial Thoughts. That's what it was. Yeah, by Carnivore MD. If you wanted to – because you're pretty good at shooting from the hip with respect to some of these. If you can address some of the most egregious items you're perceiving now as a result of this planned "scamdemic."

Dr. Saladino:

Yeah. Yeah. Going back to coronavirus, what we're seeing now is a virus, SARS-CoV-2, which is homologous to SARS-CoV-1, which is homologous to the MERS virus, which is homologous to other coronaviruses that we've seen throughout human history. Like other viruses, every virus is going to have a certain level of infectivity and a certain level of virulence. I think that we're now many months into the coronavirus pandemic and I think it's important for all of us to try and understand the data.

Dr. Saladino:

Throughout all of this I've been struggling or just really working hard to understand the reality of what's happening with this virus and how to move forward with all of this. Because it's quite a challenging time that we're in now. We've had lockdowns for months and months. We've now come out of lockdowns. As we're coming out of lockdowns, most mainstream news media outlets are suggesting that the virus is spiking again. Yet, if we look at the numbers, at least at this point in time, what we really see is that deaths are not spiking.

Dr. Saladino:

Hospitalizations are bumping a little bit, but it brings me back to this question that I think we should all be asking. Again, this is just a question that we should all ask is, “What is the news media's real intention here and what are the motivations?” I think that I don't believe in necessarily conspiracy theory without examining it. I think in today's world, nothing is conspiratorial because we don't even know what's true. We can't often say what's up versus down and so I'm going to consider all the theories that I can and examine them closely.

Dr. Saladino:

When I hear the news media say, "The coronavirus cases are spiking." I go to the numbers. I go to Worldometer. I go to other numbers repositories. I look, and I see the actual number of cases across the United States isn't really spiking that much. The number of deaths in the United States isn't spiking, and so what's going on? I'm seeing a discordance between those things. I just want to point that out to the listener or the watcher, that if you're concerned about coronavirus, listen to the mainstream news media narrative. It's almost all fear-based.

Dr. Saladino:

This is what we've been talking about in this podcast. There's been so little discussion of what are the malleable things that we can do as humans to make our immune system stronger, which should really be the majority of the focus right now. Instead, it's, “Now, are we going to need more lockdowns? Should we be doing more social distancing? When is the next drug coming? What about this drug? What about that drug? When are we going to get a vaccine?”

Dr. Saladino:

Nobody's talking about how to actually change your metabolic health in a positive way. As you're saying, Dr. Mercola, the importance of vitamin D. I know you're going to do a whole series on that and I can share a couple of articles about vitamin D but-

Dr. Mercola:

No. It's not just a series. It's a project.

Dr. Saladino:

A compendium.

Dr. Mercola:

No. It's not. No. No. I mean, we're going to elicit your help too, but all the major natural health sites, it's a collaborative effort to spread this message to the elderly and the people-of-color community. Our target is over a hundred million people. Maybe even 200 million people. It's a really big project that we're anticipating.

Dr. Saladino:

I love it.

Dr. Mercola:

I want to get back to the discordance of the numbers that you mentioned.

Dr. Saladino:

Yeah.

Dr. Mercola:

Because it appears that there are many people, and I would include myself as among those, that believe that this is an effort by the conventional media to promote, essentially, propaganda. One of the reasons that we're seeing an increase in the COVID-19 – not COVID. The SARS-CoV-2 prevalence is because there's simply increase in the number of tests.

Dr. Saladino:

Yes.

Dr. Mercola:

What's most important is the number of deaths. What's your take on that?

Dr. Saladino:

Yeah. I agree with you completely, most of the news media outlets are adding that. It's like a little caveat at the end of their statement. They're saying, "There is more testing being done, but-" Yes.

Dr. Mercola:

If they put that in there at all.

Dr. Saladino:

If they put that in there. Right. Yeah. I mean, right now, when we're talking at this point in human history, most of the news media outlets are claiming that there's going to be a second wave or they're preparing for a second wave. If you look at the data, it's just not showing up. It's just not showing up. The numbers are not spiking across the United States or other countries, and deaths are not spiking in the United States or most states or other countries either. I can show you my data [inaudible 00:29:46] that.

Dr. Mercola:

You would anticipate that in the summer. I mean, if this disease or infection is going to follow similar infections in the past that typically in the summer, the rates go down for a wide variety of reasons. Certainly vitamin D levels being one of them. I think we might get a more accurate view of what might happen to us in the fall and the winter if we look at Brazil, which is in the Southern hemisphere and is actually going through their winter now.

Dr. Saladino:

Exactly. I think there is a question of whether we're going to get a spike in the fall, which is again, why it's so interesting for me. We have months of summer right now, and the messaging I think should not be, "Don't go outside," or "Let's do a second lockdown." The messaging should be, "You have sun right now. For the sake of your life, your children's life, your grandparents' life, your parents' life, go in the sun. Go outside and eat these foods and understand how to become metabolically healthy."

Dr. Saladino:

That should be the messaging that I think we're seeing and we're not. I agree with you that in the fall, we probably will see another surge, or we might see another surge depending on how deep into the fall we get and how much sun people are able to get this summer in the United States. It's a challenging thing. That brings us into discussions of immune tolerance or rates of infection and rates of infectivity. I think this is kind of a complex discussion. I'd like to share a little bit of data regarding-

Dr. Mercola:

Well, before we go there, hold that thought. I want you to go back because I neglected to ask you for your specific recommendation. That if you were in charge or at least a consultant for the propaganda that conventional mainstream news is putting out. They accepted the fact that really probably would be a sound idea to become metabolically flexible and less insulin-resistant. What would you recommend as the top two or three strategies to achieve that goal?

Dr. Saladino:

Yeah. It's a great question and it's incredibly simple. It starts with eliminating processed carbohydrates, processed sugars and processed vegetable oils. I think that from a food perspective, those are the key evils that are really wreaking havoc on our metabolism. If you look around at what people in the grocery store are still buying and what the majority of our population eats, it is those foods.

Dr. Saladino:

Processed carbohydrates, processed grains, processed sugars and processed vegetable oils. The processed vegetable oils would be things like corn, canola, soy and safflower. I want to share something else.

Dr. Mercola:

Which are probably the most pernicious.

Dr. Saladino:

Yes. Yes.

Dr. Mercola:

I mean, if you had to eliminate only one set of foods, I would say it would be the industrial processed omega-6 vegetable oils. That they are – you've done really good podcasts before on that.

Dr. Saladino:

Look at this Joe. This is from the WHO (World Health Organization). They want you to eat soy, canola, sunflower and corn oils. The WHO is recommending this. They're saying don't eat saturated fats from fatty meat, butter, palm, coconut, cream cheese, ghee and lard. Don't eat natural animal fats. I mean, fish, avocado, nuts, olive oil, way better than these following ones right here, soy, canola, sunflower and corn oils? That to me-

Dr. Mercola:

Well, the first four though were okay, but they mixed in the bad ones.

Dr. Saladino:

Exactly. They're confusing people.

Dr. Mercola:

Oh, absolutely, because there's a little truth and that's the way to confuse people. You give them a little bit of truth and mix in the bad stuff with it.

Dr. Saladino:

I think that if you look at that list, it's very clear that – well, my concern is that healthy fish, avocados, nuts and olive oil are much more expensive than soy, canola, sunflower and corn oils. If you give that as a mainstream recommendation from the WHO, what are most people going to eat? I think that just in terms of availability, they're going to get corn, canola, soy, safflower and peanut. Really, the devil's in the details here. The devil's in the details.

Dr. Saladino:

Those polyunsaturated vegetable oils, highly oxidizable and very metabolically damaging. In addition to processed sugars, really problematic and so I think, yes. Start with the vegetable oils. I did a podcast with Dr. Cate Shanahan. Talked about that. I also talked about that with-

Dr. Mercola:

Oh, that was great. We should put a link in the article on that, because it was a really good interview. I like Cate. She's really great.

Dr. Saladino:

Yeah. She's great.

Dr. Mercola:

Part of the reason these fats are so problematic is unlike sugars, which you burn off pretty quickly. You might get a spike in your insulin levels and maybe raise your glycosolated hemoglobin, but it's short-term. It's a few hours at most. Whereas those vegetables persist for months and they get embedded in your cell membranes and become a structural part of your body that you have to replace at some point in the future. In the meantime, it's damaging your body every time it's in there, every moment it's in there.

Dr. Saladino:

That's such a great thing. I think hopefully the listener and watchers will visualize that, that when you're eating vegetable oils, they become a part of you. Every cell in your body is made of these membranes. If those membranes are composed mostly of polyunsaturated fatty acids, especially these omega-6 polyunsaturated fatty acids from processed, bleached and deodorized seed oils, you have little firecrackers in the cell membranes of every cell in your body that are just waiting to be lit.

Dr. Saladino:

They're just so susceptible. I mean, they're just going to explode and create all this oxidative stress, all these free radicals. That's essentially one of the pathways by which humans develop insulin resistance and metabolic dysfunction. There are many pathways, but one of the pathways is inflammation and oxidative stress. In fact, that's how our body signals that there's an overabundance of calories.

Dr. Saladino:

If we're over consuming calories, especially in the form of processed foods, which is where the processed vegetable oils, the processed grains and the processed sugars come into play. When we over-consume foods like that, which are much easier to over-consume because they short circuit our satiety mechanisms, and we get this overabundance, this excess calories, then our body actually puts the brakes on insulin signaling and says, "Hey, insulin, don't come and signal at this cell because we're already full of nutrients."

Dr. Saladino:

One of the ways it does that is with reactive oxygen species. You can synthetically create a state of insulin resistance by creating more reactive oxygen species in your body in a way that mimics your own endogenous, your body's own internal biochemical signal to insulin to say, "Hey, wait a minute. I'm already full of nutrients." You can get insulin-resistant by overeating mixed macronutrients, fat and carbohydrates together, which are very easy to overeat, especially when they're processed carbohydrates and processed sugars and processed vegetable oils.

Dr. Saladino:

Or if you just eat a whole bunch of vegetable oils and you create this state of excess polyunsaturated fatty acids in your membranes. It's just so unstable that it can become very damaging and that can create inflammation in the human body as well.

Dr. Mercola:

Could you address this extensible paradox that those who eat a low-fat diet shades of Ornish or Pritikin prior to him, seem to do pretty well? I mean, even Type 1 diabetics or those who eat a low-carb diet seem to do pretty well. As you just referenced, when you combine high-fat, high-carb, it's a metabolic disaster. Just give us a short summary to take on, because you actually interviewed two Type 1 diabetic clinicians who teach this. It was a very interesting dialogue you had with them.

Dr. Saladino:

Yeah. At a metabolic level, you're absolutely right that high-carbohydrate, low-fat diets can improve insulin sensitivity. There are many studies of overfeeding of exclusively carbohydrates that show that you can overfeed bagels for instance, and you really won't gain a lot of weight, but only if you have bagels, right? Only if you're very-

Dr. Mercola:

Or potatoes.

Dr. Saladino:

Right. Only if you're very low-fat. It is true that a very low-fat high-carbohydrate diet can improve metabolic health. Now, my problem with that type of diet is nutritional and it's micronutrient-wise. This is my concern for people who have been doing that program or doing fruitarian diets. We see this over and over. This is my concern with plant-based diets, which often become high-carb, low-fat.

Dr. Saladino:

Metabolically, you may improve in the short term, but nutritionally, you will become deficient almost 100% of the time because plant foods don't have all the nutrients that humans need. You can get some nutrients from plant foods but as I talk about in my book, they're much less bioavailable in plant foods. Really, animal foods are the king. Plant foods may be used as survival foods by our ancestors or by humans today, until we can get more bioavailable, more nutrient-rich animal foods, especially the organ meats.

Dr. Saladino:

To construct a diet that is exclusively high-carbohydrate, low-fat, like a fruitarian diet or a strict plant-based diet, you are going to get nutrient deficiencies. I've heard over and over sad, tragic stories of people who do this type of diet, who work with these clinicians who I interviewed. They have catastrophic metabolic and nutritional consequences long-term, whether it's resurgence of autoimmune disease, whether it's profound nutrient deficiencies.

Dr. Saladino:

This is a big deal and perhaps this is a great segue to talking about the nutrients that our immune system needs to be ideal. We can wrap it back into coronavirus because-

Dr. Mercola:

Sure. Yeah. Go for it.

Dr. Saladino:

One of the most important nutrients that you and I have both talked about is zinc. We can talk about zinc with regard to hydroxychloroquine. We know that the chloroquine and hydroxychloroquine are zinc ionophores, which means they help zinc get into our cells. Even independent of the mechanisms of these drugs, which may be beneficial, we're still waiting to see in coronavirus, humans need certain minerals and vitamins to have a healthy immune system.

Dr. Saladino:

Earlier in this talk, we talked about the immunologic signaling at the level of the metabolic milieu. What we talked about there was the importance of insulin sensitivity. We can talk about why that's important in a moment. The other piece of the equation that I think is so critical, is that we need certain nutrients for our immune system to function well. I really see this as a two-pronged attack. This is just one great summary paper, "Immune Function and Micronutrient Requirements Change Over the Life Course."

Dr. Saladino:

In this paper, they talk about the many nutrients that can compromise immune function. I want to highlight this for people, particularly vitamins, A, C, D, E and B2, which is riboflavin; B6, which is pyridoxine; B12, folic acid, which should be folate – that's actually a misprint in this study – iron, selenium and zinc. Let's just look at this list. Where do humans get these vitamins from? They get them from animal foods predominantly.

Dr. Saladino:

Vitamin C, robustly found in plant foods. The rest of these vitamins, A, D, riboflavin, pyridoxine, B12, folate, iron, selenium and our friend zinc-

Dr. Mercola:

Folate is high in animal foods? I thought it was mostly plants.

Dr. Saladino:

Which one?

Dr. Mercola:

Folate.

Dr. Saladino:

Oh, well bioavailable folate from organ meats like liver and kidney.

Dr. Mercola:

Okay.

Dr. Saladino:

You can get folate from foliage, but we can talk about the potential problems with that in terms of bioavailability of that folate. In terms of bioavailable vitamins, and again, we talked about this in my book, "The Carnivore Code," vitamin A, riboflavin, B2, B6, B12, iron, selenium and zinc. You really can't get those from plant foods. If you want to have a robust immune system, you want to be metabolically healthy. You don't want to be insulin-resistant and you need to have nutrient adequacy in your diets.

Dr. Saladino:

How do you get nutrient adequacy? You get these micronutrients from bioavailable sources in organ meats and in the muscle meat of animals. As we talked about in the first episode, organ meats are things like liver and kidney and other more exotic organ meats, which not everybody's going to eat. One of my greatest passions that I'm super excited to share with you and the audience is that I've gone ahead and created these as supplements in my own company now, so that people can get desiccated organs that have liver and heart, and kidney, and pancreas, and spleen.

Dr. Saladino:

If people want to do that and they're interested in getting organ meats as a source of these micronutrients, they can check out HeartAndSoilSupplements.com. That's my new passion. In general-

Dr. Mercola:

The raw materials are sourced from, I'm assuming, organic grass-fed animals?

Dr. Saladino:

Grass-fed, grass-finished regenerative animals-

Dr. Mercola:

Okay.

Dr. Saladino:

-in New Zealand and we're developing a supply chain in the U.S. Very soon we will be the only company producing desiccated organ supplements that has a U.S. regenerative-based supply chain. You know Will Harris of White Oak Pastures and these really great farms doing amazing work. We're trying to support those regenerative farms in the U.S. like we're already supporting them in New Zealand. These organ meats are so hard to get.

Dr. Saladino:

What's so interesting is if you put it in a pill and you desiccate it, you lower temperature and dehydrate it, these nutrients are preserved. People can really get more of these critical nutrients. I mean, obviously eat the organs as freshly as possible if you can, but if you can't get them, these desiccated organs are so valuable. I had to. We're trying to do this.

Dr. Mercola:

It is true. How many tablets do you need or you suggest? Is it 50, 100, 200 a day?

Dr. Saladino:

When you desiccate an organ, it's low-temperature dehydration, meaning that you lower the pressure in the system and then you can pull the water out at a very low temperature. Most people may be familiar with the way that organs are dehydrated. You raise the temperature to 140 degrees. When you desiccate, you can keep the temperature of the organ at room temperature because you lower the pressure. This is one of these laws in physics.

Dr. Saladino:

If you lower the pressure, then you can decrease the temperature and dehydrate something very easily and so it preserves the nutrients. You can take an ounce of liver and compress it, dehydrate it and desiccate it into about six capsules. Six capsules a day of liver. We have one supplement that's liver and bone marrow together is about equivalent to a half an ounce of liver and half an ounce of bone marrow.

Dr. Mercola:

That's good.

Dr. Saladino:

Six capsules a day would be a great start.

Dr. Mercola:

Is it capsule or a tablet?

Dr. Saladino:

It's a capsule.

Dr. Mercola:

Okay.

Dr. Saladino:

Yeah.

Dr. Mercola:

Is there a reason you wanted capsule? Because typically you can fit more material in a compressed tablet.

Dr. Saladino:

Oh, just because if we use a capsule, we don't have to use any binders and we didn't want to use any binders. We just want to use a gelatin capsule, sourcing the gelatin as well as we can. Then you just take this desiccated material and you put it in the caps so you don't have to bind it in anything. It kind of sticks better.

Dr. Mercola:

Good. Good.

Dr. Saladino:

Yeah. That's the idea that we need these nutrients from animal foods. To your original question-

Dr. Mercola:

It's probably the best multivitamin supplement you can get.

Dr. Saladino:

I couldn't agree with you more. Like I said, if people can eat real liver or real pancreas or real spleen, then do that. The supplements are just meant to be there as a supplement, as an adjunct for people who are traveling or people who can't get it normally. I agree. I've said the same thing. You're echoing my sentiments exactly. That animals eaten nose to tail, that's the best multivitamin that humans can ever get. That's what our ancestors got.

Dr. Saladino:

So much of the research for my book and the research with this company, this Heart and Soil company that I've developed, has just continued to show me that eating animals nose to tail is such a really incredible piece of our heritage as humans. It makes us so strong. I mean, where do you get bioavailable vitamin A if you're not eating liver? You might get it from egg yolks, but you get a lot of it from liver. Or where are you getting riboflavin from? Riboflavin just isn't present much in the plant kingdom.

PART 2 OF 4 ENDS [00:46:04]

Dr. Saladino:

It's not that present in muscle meat, but it's very present in heart and liver. And it just really rounds out human nutrition and helps us be so much better. I think our ancestors knew this, and they got an animal. They ate the organs first. They treasured them. It was such a huge part of their life. And for our immune system, it's this missing link, right? The first piece is, don't eat processed food, don't eat processed carbohydrates don't eat processed sugars, don't eat processed vegetable oils, and then the other piece is nutritional adequacy and where do you get your nutrients from.

Dr. Saladino:

Where do you get those nutrients that paper is talking about? If you really dig into it, the best source is animal meat and especially animal organs. So that to me is so – I think it could change the world. And as you're saying, it's the best multivitamin ever, and it's really a food.

Dr. Mercola:

Yeah, that's great. Hey, before we go to the next part, I wanted us to skate back to the metabolic flexibility and some resistance treatment. And you didn't mention a time-restricted eating compressing the window of which you're eating food as an effective strategy. In my viewpoint, it seems to be a powerful strategy-

Dr. Saladino:

So important.

Dr. Mercola:

-even if you're not eating healthy food, that's what the animal studies show. But if you're eating healthy food, it's like crazy good. So I'm wondering with your broad experience, both personally and with the people you counsel, what you've noticed with respect to improving insulin resistance by implementing time-restricted eating?

Dr. Saladino:

I couldn't agree with you more, you're hitting on this great point, so thank you for mentioning that. I think it starts with food and then the next part is lifestyle. And a huge part of that lifestyle is being in the sun and exercising. And perhaps the most important part of that lifestyle is time-restricted feeding. And you're absolutely right. Animal studies show that, if you just do time-restricted feeding, you can even feed those animals, not the best diet and they get improvements. Well, imagine what happens when you feed someone a good diet, a diet that's rich in animal foods, non-processed plant food, if you want to include them, especially organ meats or desiccated organ supplements, and you do it in a small window.

Dr. Saladino:

I do it every day, Joe. I found that I sleep better. I just feel better when I stop eating by three or 4:00 P.M. in the afternoon, which means that my time-restricted feeding is a breakfast meal and then an early dinner, and I eat two meals a day and I'm trying to get at least 16 hours. What's that?

Dr. Mercola:

Well, you go for eight hours of restricted.

Dr. Saladino:

If I can do seven, I'll do seven but sometimes it's eight.

Dr. Mercola:

Yeah.

Dr. Saladino:

Yeah.

Dr. Mercola:

I'm not a little more rigid. I really eat from 10 to 2 [P.M.], and it's easy for me to do. There's absolutely no hunger, I don't crave foods at all, but I'm not sure that's particularly healthy for the long-term. And I think you need to go to extend it to six to eight hours occasionally, because I just don't think your body's going to like going without food for 20 hours a day.

Dr. Saladino:

It's powerful medicine that cannot be overused.

Dr. Mercola:

Yeah.

Dr. Saladino:

But what's so interesting is that when we discover powerful medicine, we have to then discover how we dose it.

Dr. Mercola:

Yes.

Dr. Saladino:

I've definitely had clients who were doing one meal a day, which might be considered to be the best example of time-restricted feeding. And their testosterone went down. And then when he started eating twice a day and including more calories, his testosterone tripled. So there was a middle young male, 35-year-old gentlemen whose testosterone went to three or 400 as a total. And I said, “eat more, eat more often,” and his testosterone went back to 900 on a carnivore diet. So when people say that their hormones are dropping on either a ketogenic low-carb or carnivore diet, the first question I have is, “How much are you eating?” And, “How often are you eating?”

Dr. Saladino:

And I think that for most people you can find that sweet spot around six, eight hours, which isn't going to affect your hormones, but it's still going to give you this really large window of time-restricted feeding. And I think that in our circle and the people who listen to this podcast and this show, we're an elite group. I think that a lot of people listening to this are in the 12% of metabolically healthy people. And if they're not, they're going to be closer to it after this podcast. But-

Dr. Mercola:

Yeah. And interestingly, the other 12% is that 12% of the population eats more than 12 hours a day. There's probably a correlation between the amount of time you're eating food and metabolic flexibility.

Dr. Saladino:

Yeah. And I think that even – so one of the things that I've been experimenting with recently, and you and I have had conversations about this is including some carbohydrates in my carnivore diet, occasionally. I did a whole episode on my podcast about continuous glucose monitoring. There's this great company Nutrisense that is now offering CGMs (continuous glucose monitor) to people direct to consumer. And so I wore a CGM, a continuous glucose monitor for a month. And I included honey in my diet for a couple of reasons that I can talk about. But what I found was that, by having some honey a couple of days a week, my blood sugar would bump a little bit, but then would come back to normal very quickly suggesting very good levels of insulin sensitivity.

Dr. Saladino:

That's what you want to see, and doing that for extended amounts of time did not cause me to develop insulin resistance. My blood glucose response was still exquisitely sensitive, but what I saw was that my overall fasting blood sugar was lower when I included some carbohydrates. And this gets back to the metabolic piece and metabolic flexibility that if we do a ketogenic diet for too long-

Dr. Mercola:

Mm-hmm (affirmative).

Dr. Saladino:

I think the human body has adapted to this evolutionarily, but we will start to see that fasting glucose creep up and up and up. And if you just give your body some glucose occasionally or glucose and fructose, I think it's totally reasonable in small quantities. You will see that fasting glucose go much lower down to a level of 70 or 80 some thereabouts. So I think that's a much healthier level for a fasting blood glucose. In the continuous blood glucose monitor podcast that I did, you'll see an example in the YouTube video of someone who was doing a zero-carb diet for five years, and their fasting blood sugar is always 120. It’s always 120.

Dr. Saladino:

So you have to think, “Wow, how much more glycation is happening to natural killer cells?” The cells of the immune system that we really want to keep as agile as possible with a fasting blood sugar of 120 all the time. Your body can do it, but is it ideal? And so, also from an electrolyte preservation perspective, I found that occasionally eating some, I would say ancestrally consistent carbohydrates. You might even consider honey to be an animal-based carbohydrate in some ways, since it's from bees, that seems to allow my blood sugars to be much lower when I'm fasting, I'll get small bumps maybe 30 to 40 milligrams per deciliter.

Dr. Saladino:

They go back to baseline within an hour, and they stay very low. And my overnight blood sugars are very low. And overall what I see with my blood sugar is that a little bit of carbohydrate coming in occasionally, allows for much more metabolic flexibility for me. And I think that's what it's all about. I think ketogenic low-carb diets are super valuable, and if we leverage them, like we found this powerful medicine, now we figure out how to dose it. Just like we do with intermittent fasting. You can overdo it, I think you can overdo a low-carb diet, you can overdo intermittent fasting.

Dr. Saladino:

Overdoing intermittent fasting, but essentially straight starvation and then people – so we know it's a U-shaped curve for many things, but that's to your point of metabolic flexibility, flexibility handling glucose, so that we don't get to the point of physiologic glucose sparing, or glucose refusal all the time. And that came up also in the podcast that I did with those folks who are fruitarians, we talked about the differences there. So I think that's a great strategy for people, but incorporating that time-restricted feeding, so valuable, such an incredible measure, which I think is what we see with the wild success of all discussions of fasting and time-restricted feeding in the media.

Dr. Saladino:

But as you're saying, the real, the real win is eating good food, eating the highest-quality food that allows you to be the most insulin-sensitive in a time restricted-feeding window. And just going back to that original point about fat and protein or fat and carbohydrates together, as I said, you can eat a lot of low-carb, or you can eat very low-fat, high-carb, but you will likely become nutrient deficient if you do that, because you're going to have to eat so many carbohydrates. So I think that, and the reverse, as you're saying, you can do high-fat, low-carb, but the long-term problems with that one are metabolic and flexibility.

Dr. Saladino:

So, where's the sweet spot? I think the sweet spot is eating. In my opinion, it's eating an animal-based diet, not exclusively animals for all people, but realizing that animal foods have been incorrectly vilified. They're an integral part of the human diet, including these organs and including some of the healthiest carbohydrates, the non-processed carbohydrates, into your diet occasionally and not going either low-carb, high-fat all the time or low-fat, high-carb all the time. Having a mix but having a robust amount of protein throughout and then getting those micronutrients. I think that's a sweet spot for most people. And if you deviate from that, if you get that high-carb, high-fat meal, for many people that's going to be a processed food meal, and that's really going to affect society negatively. And that's the first step on the road to insulin resistance for many people.

Dr. Mercola:

Yes, indeed. Well, thank you for that summary. And I wanted to go back to the hydroxychloroquine/zinc that you recommended.

Dr. Saladino:

Yeah.

Dr. Mercola:

Just mentioned that of course the hydroxychloroquine by itself or especially given late in the disease will not work at all. And that's why a lot of these studies show it doesn't work, but it has to be given really early and with zinc. But interestingly in the day that we're recording this, the FDA (Food and Drug Authority) I believe has just taken away any indication for using this drug in COVID-19 or coronavirus. So that probably means you can still prescribe it as a physician, but there's absolutely no insurance coverage for it. I don't know how expensive it is, but it's interesting. The FDA has come down on it.

Dr. Mercola:

But the alternative that I wanted to mention is that you can use quercetin, which is a polyphenol, a plant-based bioflavonoid, but it has a lot of benefits. It's actually a [inaudible 00:56:11] too, it works pretty well, which might be helpful with immuno-senescence. But as a short-term crutch, I guess our Band-Aid is pretty safe and effective, especially if it's used with zinc. And thank God that we can use that instead of hydroxychloroquine.

Dr. Saladino:

Yeah. I definitely think that there is benefit to plant molecules as medications. I think that there's this – sometimes when people hear me talking about a carnivore diet or animal based diet and they think, well, what about aren't plants valuable as medications? Absolutely. But is that the same thing as using them as food? That's the nuance that I draw. Now I'd like to talk a little bit about glutathione as well, because I think that wraps together a lot of these conversations. I did a podcast on my show, Fundamental Health, and one of the most striking articles that I came across in preparation for that podcast was this one, which I'll show people. They can find it here.

Dr. Saladino:

"Endogenous Deficiency of Glutathione as the Most Likely Cause of Serious Manifestations of Death From Novel Coronavirus Infection (COVID-19): A Hypotheses Based on Literature Data and Own Observations." So this is just a hypothesis from this MD, Ph.D. gentlemen in Russia. But what's so interesting about this paper, is that they present a small number of cases, but there are four cases here of individuals age 34, 47, 44 and 56 and what you'll see here, is that the reactive-oxygen-species-to-glutathione ratio, predicted the severity of the COVID outcome very well. And so, this is exactly what we were going to talk about before.

Dr. Mercola:

[inaudible 00:57:49] It's a clinical assay. I never knew that was possible. Serum ROS-

Dr. Saladino:

I think it's one of these like research-based assays. That's not widely available, but it could be, right?

Dr. Mercola:

Yeah.

Dr. Saladino:

If you actually look at the total plasma reactive oxygen-

Dr. Mercola:

[inaudible 00:58:03] I wonder which ones they're measuring?

Dr. Saladino:

I can look in and see here. Yeah. But what you see in the ratios is that, when the person has a low ratio, reactive oxygen species to glutathione, this is reduced glutathione, the GSH 1.2, the patient became positive and the fever disappeared on the fourth day without any treatment. So very easy case, right? And this patient, patient number three, also age 44, so even younger than this other patient with a very low BMI, 22.5-

Dr. Mercola:

That's normal.

Dr. Saladino:

Look at the ROS-to-GSH ratio, 34.6. 34.6 is a very high reactive oxygen species relative to glutathione. This patient developed air hunger on the fourth day, they had a significant fever, hoarseness, myalgia and fatigue persisting for 13 days. And their glutathione was very low.

Dr. Mercola:

Did they die on day 14?

Dr. Saladino:

I don't think they died, but they might've. And this patient is a similar thing. The reactive-oxygen-species-to-glutathione ratio was 6.9, and they had very severe – she was hospitalized, characteristic radiologic signs of COVID-19 pneumonia. And I guess what's so interesting for me about this is, this evolving understanding of the oxidative stress that coronavirus, SARS-CoV-2, COVID-19, is involved in. And this wraps into the zinc story too, right? That zinc could be involved in many ways in mitigating this huge oxidative stress reaction but, my takeaway from that paper was, why do those people have such low glutathione in the first place, probably nutritional, either underlying oxidative stress that is causing them to be – they don't even know about it, whether they're smokers or they have heavy metal toxicity or some other reason to have oxygen stress like eating lots of processed vegetable oils, or being insulin-resistant, or lots of processed sugar could cause it, that could cause low glutathione-

Dr. Mercola:

Or EMF exposures.

Dr. Saladino:

Yes. EMF exposures could cause it, nutritional inadequacy of glycine. So, as people will know, if they've heard you talk or me talk, glycine is this critical amino acid that occurs in the connective tissue of animals in collagen. And that is one of the three amino acids in both collagen and glutathione. And so for glutathione deficient – when we get coronavirus, there's a real concern that that could be a very severe outcome and, it really shouldn't come as a surprise.

Dr. Mercola:

Tangent question on collagen. Any concerns about taking collagen if you have a problems with oxalates?

Dr. Saladino:

I think it's-

Dr. Mercola:

Glycine and hydroxyproline, it increases oxalate production and excretion in the urine.

Dr. Saladino:

I think it's very small and most people, unless you have a pyridoxine deficiency. So if you look at that glyoxylate pathway, the pathway that determines where hydroxyproline and proline and how the glyoxylate is broken down in the human body, pyridoxine deficiency and may create more oxalates, but I think that is a very rare complication. I think most people [crosstalk 01:01:28].

Dr. Mercola:

Okay.

Dr. Saladino:

Just fine with collagen. The very real problem with oxalates, is people who are eating lots of spinach and rhubarb and-

Dr. Mercola:

Almonds.

Dr. Saladino:

And almonds. Yeah. And so people should know in the book in "The Carnivore Code," there is a list of high oxalate foods and chocolate is very high in oxalates. Always taking lots of turmeric powder could create a lot of oxalates, as could medicinal mushrooms. There's conflicting data, but I really believe that chaga, if you overdose on chaga too much, you could create a lot of oxalates. So that's the real problem for people-

Dr. Mercola:

Oxalates are a significant issue. It tends to become an issue when people following the carnivore diet, because they've usually been eating high oxalate foods their whole life, and then they're excreting them because they're not eating anymore, and that can cause a significant flare up. So you have to be really careful.

Dr. Saladino:

Yes you do. In "The Carnivore Code," I found some really striking data that, you'll find oxalates deposited in the breast tissue of women. There's concern that they may be an impetus or "anitis" as we say in medicine toward the formation of carcinoma in Cy2 or precancerous breast lesions in women. When you inject oxalates into the memory fat pad of mice and rats, they will develop cancers in those tissues. And oxalates are also found to be deposited in the thyroid gland of humans when they have no physiologic role there.

Dr. Saladino:

And then if you look at people who have Hashimoto's thyroiditis, they actually have less oxalates in the thyroid and you scratch your head at first, but then you think, "Oh, is it possible that part of the immune response in Hashimoto's thyroiditis is the immune system coming in and clearing out the oxalates from the thyroid?" We don't know but systemic oxalosis, the deposition of oxalates in the human body, not

physiologically normal, it happens in primary hyperoxalosis, PAH, which is a genetic condition with a polymorphism or a mutation in an enzyme in that glyoxalate pathway.

Dr. Saladino:

People with PAH get severe kidney stones. They often develop renal failure. They get systemic oxalosis and so, you can actually get levels of oxalate in the urine and the blood that are equivalent to someone with primary hyperoxalosis , by eating something like a green smoothie. So, this is, if you eat a green smoothie, don't just put almonds and spinach and rhubarb and all those things in there, be careful.

Dr. Mercola:

Yeah. I have another one for you, I read a study a few months ago that shows that the oxalates can actually deposit in the conduction pathway of the heart, can lead to arrhythmias.

Dr. Saladino:

Wow.

Dr. Mercola:

Go figure that one. I like to look that PAH up and see if they have problems with arrhythmias. That would be interesting.

Dr. Saladino:

I wouldn't be surprised. I wouldn't be surprised at all. It's quite striking, isn't it?

Dr. Mercola:

Yeah.

Dr. Saladino:

Oxalates should not be in that part of the [heart].

Dr. Mercola:

It is definitely an issue and most people aren't aware of it.

Dr. Saladino:

When I was a raw vegan, I ate tons of kale, which is moderate oxalates, but I had lots of almonds. Spinach always bothered my stomach but, this is the idea with plants, right? Plants don't want to get [crosstalk 01:04:44].

Dr. Mercola:

Swiss chard too. Swiss chard.

Dr. Saladino:

Swiss chard. You know what's so funny Joe? Is when I used to eat Swiss chard as a raw vegan, it bothered my throat. It burned my throat and I never understood it, but I think it was the oxalates in the chard. I would juice the chard. I remember going to Portland one time to run a marathon, and I brought my juicer on the plane and Swiss chard with me, and here I am just drinking chard juice. And I just, I didn't like it, it burned the back of my throat. And this is probably the oxalates in the chard.

Dr. Mercola:

I have a similar story. I had a planted one of my first gardens about over 20 years ago and, I was doing the same thing, juicing chard every day and I planted way more than I needed. I probably had 100 square feet of it, and I just got deathly sick from it. And I thought I developed an allergy to chard, but it was just toxicity is what it was.

Dr. Saladino:

Accumulated toxicity and so, this is the message here. The interesting hypothesis that I've arrived at that, "Hey, humans can eat some plants for a short amount of time in a survival situation, but you don't want to make them the majority of your diet." And that's the idea of a carnivore-ish type diet. It's so cool to hear that you're experimenting with carnivore-ish. I talk about that in my book. The idea that if you are eating mostly animal foods, and you are getting the least toxic plant foods, that in my opinion would be the non-sweet fruit and the fruit from plants, the parts of plants that plants don't really – they're not trying to defend the fruit as much.

Dr. Saladino:

Plants don't want their stems and leaves and roots to get eaten and especially not their seeds, where we find lectins and oxalates. But, if you're eating the fruit occasionally, avocado, olives, berries seasonally, squash. As you tolerate, those are the least toxic parts of plants. And I think those can be used as reasonable adjuncts to animal foods for most people. I realized that many people may want to include some plant foods in their diet, and those would be the best ones and in the winter I'll have a cookbook coming out, and I'll have all sorts of recipes with those carnivore-ish foods.

Dr. Saladino:

But in general, plant foods are survival foods and animal foods are the foods that we thrive on, both in terms of nutrients, nutrient adequacy, the organ meats, all that stuff but, we've got a few more slides on glutathione and inflammation, if that's okay. I think it's pretty interesting stuff. So, I want to share this one. I'm sure that you've seen this, Joe. There's a large amount of data now about the pulmonary vascular endothelialitis. So this is New England Journal of Medicine, quite a prestigious journal. Thrombosis and angiogenesis. So what's going on here?

Dr. Saladino:

What do we actually know about what coronavirus is doing in the human body? Well, this is a SARS-CoV-2 virus that appears to enter in the lungs. I'll come back to that study in a moment. It's a SARS-CoV-2 virus that appears to enter in the lungs in the Type II alveolar cells via the ACE-2 receptor. But then it also interestingly, it also appears to have some pretty darn negative effects on the endothelium. And the endothelium are these lining cells of the blood vessels. And this is what I think is so interesting and scary. So this is an article from Science, and it's just showing that, there's a new hypothesis suggesting that SARS-CoV-2 attacks the endothelial cells that line the blood vessels surrounding the lungs' air sacs, or alveoli.

Dr. Saladino:

A spiral of damage can result in injured endothelial cells causing leak of fluid. So in this example, this is the alveolus. This is the great cluster of grapes sac in the lungs where air is exchanged or oxygen is exchanged with the blood. Here's a blood vessel where these cells here is the endothelium. This is a Type II alveolar cell. This is a Type I alveolar cell. SARS-CoV-2 appears to come into the Type II alveolar cell via the ACE-2 receptor, but what also appears to happen, and this is an illustration of the pathology here, is that there are ACE-2 receptors in the endothelial cells of our body.

Dr. Saladino:

These cells also have ACE-2 receptors. And so this may be accounting for, is the virus also getting into endothelial cells, and causing this pathology that we're seeing as clots. There's now increasing pathology findings that are showing that in people with COVID-19, they're having more blood clots in their lungs.

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Dr. Saladino:

In this one specifically, they looked at seven lungs obtained during autopsy from patients who died from COVID-19. They compared them to people who died from influenza A, H1N1 and 10 age-matched uninfected control lungs. And what they found is people who had COVID had a histologic pattern in the peripheral lung with diffuse alveolar damage perivascular T-cell infiltration. And they also, in the COVID-19 patients, had distinct vascular features – severe endothelial injury associated with the presence of intercellular virus and disrupted cell membranes, the pulmonary vessels in people with COVID-19.

Dr. Saladino:

Widespread thrombosis and microangiopathy, little blood clots everywhere, alveolar capillary microthrombi nine times more prevalent in COVID-19 patients as in patients with influenza. Really kind of scary until we think about why this might be happening. And I think this relates back to glutathione and it's really just showing us, again, the critical importance of optimal antioxidant status in this specific virus. So we know that glutathione is involved in immunity and inflammation of the lung. And what I fear is happening here is that people who are suffering severely from coronavirus are both metabolically unhealthy, they have insulin resistance, which could contribute to more oxidative stress, lowering levels of glutathione in their body, and making them susceptible to this endothelial injury arising from the coronavirus infection.

Dr. Saladino:

So it's a scary thing. Now, zinc is involved in that. In order to get proper glutathione status, we need zinc. We need zinc to affect sort of some antioxidant redox balance in the human body and selenium is important, glutathione is important. We know that there are many enzymes involved in glutathione production, which are selenium-dependent. And there's this interesting paper, but there's an association between regional selenium status and the severity of COVID-19 outcome cases in China. And what does it show? It shows that the lower the selenium status, the worse the glutathione status, and you can see that here, based on this population with the city. Here, population of selenium along the X axis and the cure rate here, meaning that the lower the amount of selenium in the hair, the lower the cure rate.

Dr. Saladino:

Why is this? It's probably because glutathione peroxidase and thioredoxin reductase are selenium-dependent enzymes, and these enzymes are intimately connected by controlling this antioxidant redox system. So what we're seeing is this huge immunologic injury, this imbalance and the innate and adaptive immune system, we're seeing insulin resistance, and we're seeing diffused oxidative damage, and it's all stuff that can probably be controlled with lifestyle. That's the huge takeaway. People may have also seen this set of studies-

Dr. Mercola:

Before we go on, there's another element in that too. As I understand, when you had the infection with the SARS-CoV-2, you actually have a release of von Willebrand factor and they actually formed these dimers. And one of the precursors for glutathione is NAC, n-acetyl cysteine, and actually administering n-

acetyl cysteine, NAC by itself, can disrupt those dimers of von Willebrand, which would actually improve the clot, or decrease the clotting potential. And it can be used therapeutically in addition to serving as a precursor for glutathione.

Dr. Saladino:

Absolutely. I think that, I hope that in the future, I mean, everyone's running around trying to find a magical pharmaceutical. I don't know why we're not studying.

Dr. Mercola:

We got more than what we need.

Dr. Saladino:

I know.

Dr. Mercola:

They just refuse to accept it.

Dr. Saladino:

Yeah. We should be doing larger trials of vitamin C, we should be doing larger trials of glutathione, we should be doing tons of this. I mean, we should be using NAC. It's a completely safe thing, n-acetyl cysteine.

Dr. Mercola:

It's interesting, there are some innovative hospitals. There's a physician, Dr. Roger Seheult, he is, I know you're double-board certified, he has four boards certified. He runs MedCram. I think you were on a podcast with him if I'm not mistaken. I think Newsmax had you both on and he's a sharp cookie, I'll tell you.

Dr. Mercola:

And he's an internist and he's a critical care pulmonary medicine. So he monitors these people on the vents, but in his hospital, they're using all these measures, the vitamin C, the vitamin D, NAC, zinc, hydroxychloroquine. It's so great. It's like, you just hit the jackpot if you wind up in his hospital.

Dr. Saladino:

You want to go to his hospital if you get sick. But hopefully after listening to this podcast, you won't get sick in the first place.

Dr. Mercola:

Yeah, that's the key. Hopefully we're preaching to the choir. People are already doing this, but the key is and the point is preventive medicine is so much easier and more effective than treating a problem once you already have it, then it becomes real challenging, it can be too late actually.

Dr. Saladino:

As you're suggesting with hydroxychloroquine, a lot of times it's being administered too late, right? It's much harder to put that fire out. It's much better to prevent that fire. I couldn't agree with you more, but this is my great disappointment with coronavirus is that the news outlets are not talking about preventive

medicine. They're just talking about reactive medicine and hiding from the virus. And I just don't think that we're going to be able to hide from nature. As we said, there are going to be more infections.

Dr. Saladino:

There are going to be more issues. And if those who are susceptible to coronavirus with insulin resistance and diabetes are able to use this as a wake-up call and change their metabolic health, they will change the quality of life for the entire time that they're living. My dad is a perfect example of this, Joe, he's 70 years old, he's a retired internist, and I'm going to get him a continuous glucose monitor. And he's a little concerned about coronavirus, but-

Dr. Mercola:

He should be.

Dr. Saladino:

He should be, he's 70 years old and he's not as metabolically healthy as he should be, but I'm encouraging him-

Dr. Mercola:

Not as healthy as his son.

Dr. Saladino:

I'm encouraging him to improve his metabolic health. And the beauty of that might just be that if coronavirus is the impetus, if coronavirus is the trigger that he needs to change his metabolic health, to use a continuous glucose monitor, to show himself his glycemic variability, and to understand how much risk that puts him at, or just to give them an indication that he's a little insulin-resistant because he's eating bread or vegetable oil, or not getting enough of these nutrients, and he makes the change, he's decreasing his risk of coronavirus, but he's also decreasing his risk of seasonal flu, diabetic complications, coronary artery disease, hypertension and stroke. I mean, the list goes on and on. Think about the-

Dr. Mercola:

Cancer.

Dr. Saladino:

Yes. Cancer, Alzheimer's disease. So that's what you and I are about. And that's what I think that it's all focused on.

Dr. Mercola:

See, I would put him on a KAATSU system too. I mean, that would be a great tool for him.

Dr. Saladino:

It would be so good for him.

Dr. Mercola:

It would change his life, so easy to do.

Dr. Saladino:

Yes, KAATSU. That would be absolutely great for him because he doesn't work out enough. So I should get him those two things for his birthday, which is coming up. A CGM. A CGM and KAATSU. Just a few more here that I think are so interesting, endothelial cell infection and endothelialitis with COVID-19. More of the same kind of data that COVID-19 is ending up in endothelial cells and the take home is just that, "Hey, this is an inflammatory issue in endothelial cells," and that is connected with an imbalance in the oxidative reductive system in the human body, probably due to underlying deficiency of glutathione in many of these patients.

Dr. Saladino:

This was a very scary headline that came out a few weeks ago, "Doctors Race to Understand Inflammatory Condition in Kids". Same thing in my opinion. It's looking like Kawasaki disease, which is an autoimmune, sort of, attack on the blood vessels, especially the large blood vessels in kids. But I think that if you look at this, it's going to be synonymous or it's going to be basically the same, not synonymous, but it's going to be analogous to what's happening in these people with these vascular endothelialitis presentations we're seeing-

Dr. Mercola:

Or COVID toes.

Dr. Saladino:

Yeah. COVID toes. We know that it's all connected with this endothelial dysfunction, insulin resistance, oxidative stress. It's all the same. I just hope that people listening will hear this and be able to counter the fear in the mainstream media and understand how to take action. We're really not powerless. That's the message that I just want to get out to people, we're not powerless. And you know, this might be my favorite study. I pulled up so many for us today. I think that this is one of the cooler ones that I've found, and this doesn't have anything to do with coronavirus, but I think it shows us the real take home point.

Dr. Saladino:

And this is from Dr. Robert Lustig, and a number of other people. And it's a number of years old, 2017. But what you see in this study, is if you restrict dietary fructose in children with obesity in an isocaloric model, meaning that they had 41 children who had all their meals provided for nine days. So they controlled everything. All of these kids were obese and they took away all the fructose. They made the fructose very, very low. They didn't change the macronutrient ratios or the calories. Short-term isocaloric fructose restriction decreased liver fat, visceral adipose tissue, de novo lipogenesis and improved insulin kinetics in children with obesity. And their conclusion is these findings support efforts to reduce sugar consumption, which I would agree with.

Dr. Saladino:

But these findings also support efforts to say to people with coronavirus like my dad, "Dad, you can improve your metabolic function in as little as nine days." So much of what I hear from people on Twitter is, "Paul, I'm 100 pounds overweight, what am I supposed to do?" And I say, "Don't worry about the weight. We know that independent of weight, we can improve your insulin sensitivity," with the things that you and I are mentioning, Joe, with intermittent fasting, with changing your diet, with improving your insulin resistance markers, cutting out fructose, cutting out vegetable oils, getting in the sun, and moving a little bit, that would change the world, that would really flatten the coronavirus curve.

Dr. Mercola:

Game-changer for sure, absolutely.

Dr. Saladino:

That would, yeah.

Dr. Mercola:

Now, this has been extraordinary. I just deeply appreciate your time and review of the important components. So people want to know more about the carnivore diet and actually you have moved now. You used to be in San Diego and used to surf out there, but now you're in Texas. Is it Austin, that you're in?

Dr. Saladino:

Austin, Texas.

Dr. Mercola:

Austin. So yeah, it's becoming a popular area. Certainly much, much better than California and their oppressive tyrannical democratic regime and putting people in forced lockdown. I bet that must have been a real reprieve to get to leave California a few weeks ago. I mean, what was your greatest observation in the transition?

Dr. Saladino:

Yeah, I just think that it's so interesting. I think that our country is a lot of little, it's a lot of little countries. It's almost turning into Western or Eastern Europe and the culture is very different in different States. And I so appreciate the people of Texas and they're so friendly and welcoming, and there's just not as much fear here. And you're able to just live responsibly and if you're not infringing on anybody else's rights, you're able to make your own personal decisions without people telling you what to do in a different way.

Dr. Saladino:

And so, I moved to Texas to be closer to friends and be part of a growing community here of people who are thinking outside of the box. Florida is another good spot. That probably would have been my other choice.

Dr. Mercola:

Best in the United States, I think, so I'm biased.

Dr. Saladino:

But yeah Texas is-

Dr. Mercola:

I'm biased because I love being in the ocean every day. So it's hard for me to be in Texas because I would miss the ocean, but you've got a lake out there and you can do your surfing on your board.

Dr. Saladino:

Yeah.

Dr. Mercola:

But, so if people want to find more about you, the new book, when will it be out? You had a revision of it because you self-published initially and now a big-time publisher picked you up because it did huge. It

was incredible. It was a bestseller in spades, which is people should know is very, very difficult to do, almost unheard of and extraordinarily rare, but you did it. And then you were picked up by a big publisher.

Dr. Saladino:

Right, yeah. I'm so humbled and honored that people found the information in the book to be valuable. And the first edition did great, it was a bestseller, and then Houghton Mifflin [Harcourt] picked it up. And so the second edition, which has a different cover and an index added to make it easier to find all those scientific terms, will be out on August 4, 2020. And you can go to TheCarnivoreCodeBook.com to order that everywhere. It's ebook, print and audio. And the goal here is just to get more of these type of thoughts out to a wider generation of people, a wider group of people.

Dr. Saladino:

It will be in Target, in Walmart, in Hudson, in the airports. And I just want it to reach as many people because books are so amazing as you know. Somebody can spend $20 and get years and years of your research or years and years of my research and it just, they can change the world. And I hope that they change the world for the better and that people will be able to use the knowledge that I share in the book to just challenge the mainstream media or challenge the mainstream paradigm, which I think is hurting people. There's so much more for us to learn.

Dr. Mercola:

Yeah, so that's one place. And then the other where I subscribe to your podcast and I listen to most of them. What is it? It's on YouTube. It's Carnivore MD?

Dr. Saladino:

Fundamental Health. So right here, Fundamental Health.

Dr. Mercola:

Fundamental Health, okay. Or you can type in your name it'll come up too, because as of this time, I don't think you've been censored yet, have you?

Dr. Saladino:

I have been a little bit censored, a little bit.

Dr. Mercola:

Well, not like us. We're completely out.

Dr. Saladino:

That just means you’re doing good work.

Dr. Mercola:

But you're partially censored only.

Dr. Saladino:

Yeah, I did get censored a couple of times when I talked about glutathione for coronavirus. Imagine that, something that's really safe-

Dr. Mercola:

Imagine that.

Dr. Saladino:

Yeah, imagine that, really safe. And when I talked about the non, like how low the asymptomatic infectivity rates with coronavirus were, I got censored there too.

Dr. Mercola:

Well, make sure you upload to BitChute too, so that you can at least have people go to your site and find the BitChute one.

Dr. Saladino:

Yeah, I'll do that.

Dr. Mercola:

BitChute does not censor, there are a lot of us who are uploading to BitChute.

Dr. Saladino:

Yeah, so I'm on YouTube, people can look at that. My podcast is Fundamental Health on iTunes and my website is-

Dr. Mercola:

That's free, man. That's great. Incredible. I mean, it goes deep and you have really a lot of interesting guests on there. So kudos on doing a great job on that.

Dr. Saladino:

Thank you so much. That means so much to me and like this, all of my podcasts, I just try and use screenshots and share real data and studies that people can look at. And I try to really get pretty granular. And then my website, CarnivoreMD.com. People can go there and find a listing of all my podcasts and link to all the articles and blog posts. And then I'm @carnivoreMD on all the social media spots.

Dr. Mercola:

Alright, well, that's great. You're doing an awesome job. You sort of came out of nowhere, just relatively recently. And you're just a breath of fresh air to have someone who's so healthy and committed, and objective, and not really – you're a learner, so you make a strong effort to avoid confirmation bias so you're open to new information, which is a rare commodity. I really admire that about you and you have the courage to take a stance. So congratulations on everything you're doing.

Dr. Saladino:

Thank you so much. It's such an honor, and I've so appreciated all your support. And I think that last thing you said is perhaps the greatest compliment that I can receive. I realized that all of us, anyone who's really thinking independently is always going to have to change their opinion, and is always going to need people in their life, like you and my other colleagues, to share information with. And that's what it's about and saying, “Hey, you know, I was a little bit of wrong about this.”

Dr. Saladino:

And so, I really do try to not have the confirmation bias as much as I can, but we're always learning and I'm learning and evolving. And I think that that's the way that I want to be. I want to be someone who people can really look at as being kind of independent and not tied to any particular dogma and willing to admit when I'm wrong and just advertising, or at least advocating for people to get this information in the best way possible so that they can improve their health.

Dr. Mercola:

Yeah, you're doing a great job. And then, one other question I had that I neglected to mention or request information, is that you mentioned those supplements. When are they coming out and how do people get ahold of those?

Dr. Saladino:

So it's HeartAndSoilSupplements.com. They will be live in August or July. So I imagine by the time this podcast comes out, you can go to the website, HeartAndSoilSupplements.com, and we have an array of supplements.

Dr. Mercola:

Can they preorder them?

Dr. Saladino:

They could. Yep. You can probably preorder. Yep. And they're from grass fed, grass-finished regenerative farms.

Dr. Mercola:

Good job.

Dr. Saladino:

Exciting stuff.

Dr. Mercola:

Totally consistent with what you're teaching.

Dr. Saladino:

It is, and it's just my-

Dr. Mercola:

It's important to be congruent.

Dr. Saladino:

Yeah. And it's just my message to just – I just want people to be able to get this nose-to-tail nutrition and really reclaim their health. Everyone has this ancestral birthright to radical health. And I just want people to be able to live that. You're living that, I'm living that, I want my mom, and my sister, and my niece, and my nephew, and my dad to live that. And that's what gets me so excited is getting people back on that path to health. I think that's what you've always been about, which is why I always appreciate your work.

Dr. Mercola:

Absolutely. Now, in closing, I'm going to turn the tables. What is the most radical thing you've done recently?

Dr. Saladino:

I love it. So I – there was recently a-

Dr. Mercola:

For those who don't know, Paul asks all his guests this at the end of his interviews, typically. Are you still doing that?

Dr. Saladino:

I do. I always ask people that because I love that. I just love the word radical. I'm a child of the ‘80s. So there was recently a tropical storm in the Gulf and I went down to-

Dr. Mercola:

Carmela, or what was the name?

Dr. Saladino:

I think it was Cristobal. And I went down to the Gulf and I went surfing at a place called Matagorda. So I surfed in Texas a couple weekends ago and it was radical. It was really warm water. I was in-

Dr. Mercola:

How big were the waves?

Dr. Saladino:

They were about 4 to 5 feet. So for Texas, pretty good.

Dr. Mercola:

It's good for Texas.

Dr. Saladino:

Yeah. Pretty good for Texas. There were a lot of jellyfish, it made me tough. I kept getting stung by jellyfish, but I got to surf.

Dr. Mercola:

The water's a little warmer than California, you probably didn't have to wear wetsuits.

Dr. Saladino:

82 degrees.

Dr. Mercola:

You didn't have to wear wetsuits?

Dr. Saladino:

No, no wetsuit. It was great. It was just nice to be in the saltwater on the beach and playing out there in nature. And it was really cool to share it with friends. So that's the most radical thing I guess.

Dr. Mercola:

That's pretty radical.

Dr. Saladino:

Yeah.

Dr. Mercola:

Alright, well thanks again. People got your contact information if they want further information, but I couldn't endorse your book more strongly. It's a great job and keep up the good work.

Dr. Saladino:

Thank you so much, my friend.

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