

# **A Case for More Carbs in Your Diet**

## **A Special Interview With Georgi Dinkov**

**By Dr. Joseph Mercola**

### **Dr. Joseph Mercola:**

Welcome over again. Dr. Mercola helping you take control of your health. And here today we are going to have a repeat guest, Georgi Dinkov, who is a major student of Ray Peat who passed away a few months ago, around Thanksgiving of 2022, and leaves behind a legacy of really iconoclastic wisdom on how to address pretty foundational strategies of how to optimize biological health that, really, were in stark contrast to a lot of the positions I previously held, being a strong firm advocate of keto and going into ketosis on a regular basis. And on a previous podcast with Georgi, we are in complete agreement that keto can be very, very useful initially in transitioning people who are metabolically flexible, which just happens to be about 95% of the population of the United States. There's virtually about everyone except for most of the people watching this of course, but virtually everyone would benefit from short-term of that.

But here's the problem. If you continue it long term, you're going to run into major problems, and almost everyone who's done this long term will testify to that. So, if you haven't tried that strategy, you just need to be really careful. So, we're going to talk about a lot of questions that I had in the last few interviews that we ran out of time, we didn't have a chance to discuss. But one of the responses we've had in the past, and I don't mean to put you on the spot, Georgi, but it's sort of the elephant in the room. I firmly believe that the strategies that you're embracing and teaching are foundationally accurate and will help just about everyone who integrates them.

But one of the major health challenges that we face as a nation and really, pretty much globally, is this struggle with optimizing our weight. And we're going to go deep into specifics of that. So, sort of the elephant in the room is, you being one of the main advocates of this, I'm wondering if you can help people understand what your struggles are with weight. Because it's unfortunate, but the challenges of you're teaching something and it looks to be a bit out of congruency. So, I'm wondering if you can address that right off the bat.

### **Georgi Dinkov:**

Oh, when I was actually doing keto, just as we discussed in the previous interviews, I lost quite a bit of weight for the first six months, and then I started rapidly regaining it. So, I ballooned to about 260 pounds. And I'm down after switching over to the Ray Peat diet, now I'm down to about 200. Now that-

### **Dr. Joseph Mercola:**

Wow. So, you've lost 60 pounds just doing the Ray Peat diet.

### **Georgi Dinkov:**

I have pictures that are older I can show you basically-

**Dr. Joseph Mercola:**

No, no, I believe you. I don't trust you – I don't [inaudible 00:02:51].

**Georgi Dinkov:**

Two times larger than it is now. And it wasn't bone or muscle tissue, it was basically edema and potentially fat as well. So, the question is what is the ideal BMI, right? So, we're struggling-

**Dr. Joseph Mercola:**

No, it's not really BMI. BMI is an inaccurate measure. I mean they use it for studies because it's simple and it's easy, but ideally, you want to use lean body mass, and BMI is a surrogate for that, a simple, easy surrogate so it's usually easy to put together when you're doing studies rather than measuring lean body mass [crosstalk 00:03:28].

**Georgi Dinkov:**

Right. So now they're trying to switch, I think, to the ratio of waist to hip, which [inaudible 00:03:34].

**Dr. Joseph Mercola:**

Yes, that's an accurate one too, right.

**Georgi Dinkov:**

Yeah, much better because it basically is the central obesity really that's killing us. And then a number of studies came out recently showing that hand grip strength is also a very reliable indicator of your overall health. So, if you look at the way the nation has been getting more obese, I mean, you can actually perfectly trace it to the introduction of the seed oils, and we're not consuming more sugar than we used to. In fact, if you look at the old ads from the 1950s of the housewives feeding their children, they were meeting eating tremendous amount of calories of sugar, and a lot of it coming from ice cream and soda. And we did not have that problem back then with obesity. Some people say, "No, well, it's because we used to move more." That's also not – actually, now we move more than we used to move in the '50s on average. And perhaps the greatest indicator there's something going on in our environment that's basically causing this obesity is that the fact that wild animals living in the vicinity of people are also getting fatter. So, I think that that pretty much [crosstalk 00:04:40].

**Dr. Joseph Mercola:**

And pets too, pets.

**Georgi Dinkov:**

Exactly. So, something's going on. So, what could it be? Well, these animals, I mean, there's probably the endocrine disruptors. And if we assume PUFA (polyunsaturated fatty acids) is also an endocrine disruptor, which it is, then it's got to be something in the food. And the one big change that occurred between the 1950s to now is the massive over consumption of seed oils in the expense of saturated fats. So, in terms of struggling with obesity, I think we mentioned probably in the first interview that my take is it's an endocrine problem. So, if you're struggling

with weight which you cannot lose, I think it's a good idea to maybe do some kind of a blood work for the steroids because they're the ones that mostly determine how much calories are out versus not so much where the calories in.

And every single person that has been struggling with excessive weight that has been emailing in their blood results, without an exception, their cortisol is either highish normal or above the range, both the AM and the PM value, their thyroid is actually worse than optimal, in fact, pretty bad for most people. They recently changed the TSH (thyroid-stimulating hormone) range. The upper limit used to be six, now I think it's down to three or something like that. So suddenly-

**Dr. Joseph Mercola:**

I think it was five. I think they had a five before.

**Georgi Dinkov:**

Yeah. But they almost have the upper limit of normal. So now, [you] suddenly have a very large number of people being basically hypothyroid. And this change occurred only in the last two or three years. I don't think people that were considered normal thyroid before their doctors saw the news and suddenly called in all of them and said, "Let's recheck you." Now, a lot of people are out there that are actually officially hypothyroid per the new regulations, but they haven't rechecked the results because they're thinking everything's fine. The doctor probably hasn't caught up yet with this news because it takes a few years for the story to propagate to the system. So, the fact that we're struggling with overweight issue as a nation is actually also mimicked by people who are adopting the so-called Western lifestyle and diet in India and China. I think China has the highest number of diabetes per capita if I'm not mistaken.

So don't worry, America, you're not the worst in this specific chart. And actually, India I think is second place. And then you have the United States and some Western European countries on a distant third. But, that that will be my take. I think we are eating the foods that are lowering our metabolic rate. We're living an excessively stressful lifestyle. That's probably not a surprise for anybody. And many people think, "Well, stress is good for you." Well, it's good as a hormetic response in an acute situation, right?

**Dr. Joseph Mercola:**

Lifesaving.

**Georgi Dinkov:**

But not when you have chronically elevated cortisol. Right. Every doctor will tell you, if you have a chronic elevated cortisol, you will develop the so-called spectrum of Cushing syndrome, which we also mentioned one of the first interviews. And one of the defining features of elevated cortisol higher than normal is that you have central obesity. So that, to me, is really the problem. We have higher than desirable levels of stress, suboptimal diet, and we're surrounded by a number of different endocrine disrupters which are now proven to cause, reliably, obesity in animal models even in very small amounts. Most of those are found in plastics.

**Dr. Joseph Mercola:**

Yeah. And you mentioned it was as an endocrine problem with the obesity, and it's further compounded by the fact that there's this massive confusion about obesity being primarily a calories in/calorie out issue, which we know is wrong. So, people adopt that. They go low-calorie, maybe a thousand calories, 500, 1,500 far lower than their metabolic needs. And then that further exacerbates the issue because their body just shuts down because they're thinking they're dying of starvation and they want to stay alive.

**Georgi Dinkov:**

Yep. And you shut down all the necessary functions that – everything that makes us human. You're down to basically a semi-slumber like semi-hibernation, and the only thing that remains is the heartbeat, which goes really low when you are actually fasting. And many people say, "Oh, that's great, means my heart doesn't need to pump as hard, everything's great." No, it actually is a very good indication that you have low levels of T3 in the blood. And they've confirmed that because when they gave these people a little bit of T3 while they're dieting, actually, their heart rate recovered to where it used to be before they started dieting. And I don't think anybody would argue that low T3, it's not a good sign. In the long-term, it's not a good sign.

**Dr. Joseph Mercola:**

Yeah, yeah. And probably most people would benefit from taking a T3 supplement, and I do view this as supplement. It's just an endocrine crutch, but it helps while you're getting your system back into line. Now you mentioned the fact that despite people who are having large amounts of ice cream and soda, they weren't gaining weight, as a culture, we weren't. I mean, some people were obviously, but that we hadn't seen the dramatic increase we had since the '70s. But I believe in the '70s, soda changed quite dramatically, that we had the introduction of high-fructose corn syrup. And that's a pretty foundational concept that's mind-boggling that most people don't fully appreciate. I think we addressed it in one of the previous interviews, but I think it's worth repeating here; the fact that there's a dramatic difference between high-fructose corn syrup and cane sugar. Why don't you review that and remind us of the differences there that is literally night and day? They're two different foods.

**Georgi Dinkov:**

If the high-fructose corn syrup is properly processed, means there's no remaining starch, then metabolically it's pretty close to sugar because it's about 55% fructose, 45% glucose. However, several studies took some sugary drinks that are sweetened with high-fructose corn syrup and started looking at the composition of the drinks, and then they found a tremendous amount of starch leftover, which wasn't accounted for in the actual calories listed on the label. So, let's say you take a can of Coke and it says like you're taking a hundred calories. In fact, when they took into account all of the starch that was in the Coke that was basically unprocessed high-fructose corn syrup because they used corn starch to produce it, then it came down to about 400 calories. So yeah, sure, if you're downing three or four of these a day, you're basically getting closer to the 2,000 calories while you're thinking it's only 300 to 400. And then on top of that, you are eating everything else.

Now, if this was pure sugar, in other words just 55% fructose, 45% glucose, it will probably not cause that much of an issue, assuming you're not loading yourself up on the PUFAs as well. However, basically, the starch that is in there is not only calorically adding to the equation but also, starch, because these are very tiny particles, they've been made that way in order to facilitate the conversion of the corn starch into the high-fructose corn syrup, they, actually, are capable of preserving through the intestine and into the blood system unprocessed. And this immediately triggers, at the very least, an allergic reaction. The body does not like starch particles in your blood. And in fact, it's a very well-established test for causing an allergic reaction by injecting undigested starch particles into animals, and then they give a antihistamines and whatnot to study the anaphylactic reaction.

There are reported case studies of people getting an anaphylactic reaction by drinking a drink sweetened with high-fructose corn syrup. I don't know of any case of a person actually being – a documented case of people having allergy to sugar, to the pure sugar, which is the cane sugar. But if this is triggering the allergic reaction, there's something else in there. It's not the sugar causing it.

And I think at this point, it's pretty conclusive established that it's the undigested tiny starch particles, nanoparticles, that are now present in many different pharmaceuticals as starch and other things. That's probably a separate discussion. And these are causing the anaphylactic reaction or at the very least a low-grade inflammatory reaction, which will trigger the release of histamine, the nitric oxide and the serotonin, which we discussed previously. And in general, you're going to have a situation where you'll be sneezing, you'll have itchy eyes. And you think, “Oh, it's normal.” Well, it's not normal if it's in the winter, right? If you're getting a year-long allergic reaction or at least the symptoms of it, something's going on around you, and it's probably the food that you eat. And the high-fructose corn syrup is perfectly capable of causing these things on a daily basis when you're eating. So, much more calories than what it listed on the label and basically starch in the nanoparticle form, but is capable of basically getting into your bloodstream undigested, which triggers all kinds of inflammatory and allergic reactions.

### **Dr. Joseph Mercola:**

And there's also the issue that the starch particles serve as fuel for bacteria in your gut and increases certain pathogenic bacteria, and the endotoxin from these bacteria contribute to inflammatory conditions.

### **Georgi Dinkov:**

Yeah. If it gets to the colon undigested, then basically that reaction will happen as well. Now, unfortunately, even though the high-fructose syrup, sugar, sugary drinks and foods are simple sugars that's supposed to be absorbing in the stomach and the upper portion of the small intestine, however, now people are having – a very large number of people are starting to get diagnosed with a so-called SIBO conditions, small intestine bacterial overgrowth. And that's not a good thing. You should not have bacteria in your small intestine. It should be as close to sterile as possible. And the question is, “Well, why is bacteria creeping up from the colon into the small intestine?” One explanation, one study made the claim that it's probably because a lot of people taking the proton pump inhibitor drugs, which are basically decreasing the amount of stomach acid you're producing, and the stomach acid that we're producing is there not only to help us with

digestion, but also to keep the bacteria, basically, down to an acceptable level.

So, if you're not producing sufficient amount of acid, you're going to get some bacteria colonize your small intestine either from food or creeping up from the large intestine. And that's not a good thing. Basically, you have bacteria everywhere. So now the portion of the intestine is supposed to be clean and just focused on absorbing food, now it's harboring a microbiome. And then if you give it any kind of a food that the bacteria can process, you're increasing the turnover and result in the endotoxemia that is now accepted to cause a large number of diseases, especially cardiovascular disease, obesity, because of the chronic inflammation that it causes, and now neurological disease. Alzheimer's is now basically – has been conclusively tied to chronic low-grade endotoxemia. They're still claiming there's a genetic component to it, but they're now admitting that endotoxin is a causative factor in Alzheimer's disease.

### **Dr. Joseph Mercola:**

So, this is a fairly controversial position, especially among people who embrace natural health. The commonly held belief in the vast majority of people who adopt this strategy is that sugar is a pernicious evil. And I held that view for a long time. There's a book written called the “Sugar Blues” by William Dufty in the '70s I believe. There are books that far preceded that that really heralded all the challenges with sugar, and they had their data to back it up. But Dr. Peat's position and yours is that not necessarily so. And yes, there are problems with sugar, but it's the high-fructose corn syrup primarily. And in fact, pure cane sugar can be a very useful strategy to counteract some of the challenges of the holes that people get them into by low-carb diet, and just adding regular sugar back in can be helpful.

Now, yes, fruits would be better, whole fruits, than processed sugar, but still there's not a lot of difference as long as it's not processed into high-fructose corn syrup. And I'm wondering if you can expand or either confirm or refute that. And if that's the case, people are looking for more calories and seeking to increase their carbohydrate intake and they just don't have access to fruit, which is probably the ideal form of carbohydrates. How problematic would it be to get sugar? And are there any cautions when identifying cane sugar and brown sugar? Is there a difference between brown sugar and cane sugar? And how frequently is brown sugar extracted or made from high-fructose corn syrup?

### **Georgi Dinkov:**

I think, well, first of all, I do agree that if the cane sugar, if it's pure, it has a very different overall systemic health effect than the high-fructose corn syrup. As they say in the military, be mindful of your weapon because it's always been built by the lowest bidder. Well, the same thing applies in the food industry. Be mindful of what you're eating because it's always produced with the least amount of cost. So, whatever gets the largest amount of profit for the producer, that's what is going to get used into the food supply, not necessarily what's good for you. And it just so happens at the high-fructose corn syrup, because corn agriculture is subsidized in the United States and in many other countries, that's really the main source of the simple carbohydrates we're getting in the food supply.

But because of the presence of starch and now because of the genetic modification of some of the corns, they're introducing these genes that in animal studies, when you're feeding them the

high-fructose corn syrup derive from the corn starch from the GMO-modified plant, it's triggering allergic reactions. So, we don't yet know the long-term health effects. Even if we take the large assumption that high-fructose corn syrup is similar to sugar, metabolically, it's not similar in terms the health effects that it causes, aside from the starch. It's now known to trigger allergic reactions. So, what's happening to these genes?

There is also the concept of horizontal gene transfer. It used to be very controversial, and people thought that it only occurs in plants, but now it's known to occur in animals, including humans, and potentially cross-species as well. So, the statement "you are what you eat" is very, very correct. So, you should be mindful of eating things that are known to be inflammatory, but also now coming from mutants that basically we haven't lived with, we haven't evolved to live with. And they may be causing systemic problems if you're ingesting them. As far as – yeah.

**Dr. Joseph Mercola:**

Okay, go ahead.

**Georgi Dinkov:**

As far as the sugar itself, how can you get it in the purest form? I think most of the sugar that's sold in the crystal form that's sold in the stores, especially the organic one, is pretty safe. I've actually done lab tests myself on various different brands, and there was only one that said it was imported from China that had higher than acceptable amounts of cadmium. And heavy metal contamination used to be a problem in sugar distillation in the industry that produces the sugar. But it looks like most of the Western countries have sorted this out. So only the one that's coming, because it's cheaper, that's coming imported from China that seems to be having that problem. So, if you're looking for the organic product, you should be okay.

Now, some people that have an issue with sugar are saying, "Well, it's just empty calories and whatnot." Multiple studies demonstrated that honey, which is very similar in composition to just the plain white sugar, does not trigger the normal hyperglycemic response that most of the other simple carbohydrates do. In fact, it improves the hyperglycemia in Type 2 diabetic patients despite being pure sugar. I think that's like the greatest confirmation that we have that sugar, it's actually not evil, but it depends how you're getting it and in what form. And an animal study demonstrated that rats, when they're given free access to Coke, in the form of Coke, sweetened with sugar, they were eating the equivalent of 8,000 calories daily. So, they quadrupled their caloric intake daily without gaining an ounce of fat just by drinking Coke. I'm not advocating-

**Dr. Joseph Mercola:**

Cane sugar Coke, not-

**Georgi Dinkov:**

Cane sugar Coke, yes, the Mexican type of the Coke. Mexican, but used to be the same in America. It's just now cane sugar is much more expensive, so they switched to the high-fructose corn syrup. So, sugar is not dangerous. It's perhaps the only nutrient that was purely designed and we evolved to actually metabolize for fuel. But the other two micronutrients, even though we can metabolize them as fuel, they come with a lot of strings attached if you start doing that.

Deaminating amino acids and oxidizing them, then turn into glucose and oxidizing that, that's dangerous, creates a lot of ammonia, a lot of autotoxic byproducts. And then if we oxidize fats, we covered it, I think in great detail, that if you're oxidizing PUFA, then all hell breaks loose. And if you're oxidizing saturated fats, it's less dangerous. But in the long run it still kind of puts you, due to the Randle cycle, into the semi-diabetic state because it decreases your insulin sensitivity.

So really, sugar, pure sugar is what we are meant to oxidize for fuel. And if you get it from ripe fruit, great. If you get it from honey, if you can get it from honey, probably just as good if not even better. But if not, then just the pure white variety, preferably organic that you get from the store, I think it's a very good source of most of the carb calories that you intend to eat throughout the day.

**Dr. Joseph Mercola:**

Well, I'd have to throw in a major caution here about the honey primarily because a large amount of honey is made from high-fructose corn syrup.

**Georgi Dinkov:**

Yeah, fake. Exactly.

**Dr. Joseph Mercola:**

I've concluded that if it says it's "raw honey," there's a high likelihood, especially buying from a local producer, that it's going to be the real deal. So, I mean, what's been your experience with identifying authentic honey that's not adulterated or made from scratch from high fructose corn syrup?

**Georgi Dinkov:**

So I taste a big difference and also sense a large difference in the metabolic effects. Unfortunately, even the organic version, and not many of you know, but there is no such thing apparently as organic honey.

**Dr. Joseph Mercola:**

Yeah, yeah.

**Georgi Dinkov:**

Many vendors will put it on the label, but I don't think the USDA recognize it or has certified any honey as organic. So, you're paying a lot more, but you're getting potentially the same thing. Which now they've gotten to the point they're so good at reverse engineering the foods that we're willing to pay a lot of money for that, just like olive oil, they can give you canola oil that looks and tastes just like olive oil, but it's actually mostly PUFA inside, I think they've basically re-engineered the process for honey as well. Because when I eat the refined variety, which is sold in stores, organic or not, I'm basically getting sort of like lightheaded, sometimes get indigestion and whatnot.



There are quite a few farms in the area outside of DC, here in Maryland, Virginia, there are farms and there are beehives there. So, you go and you buy the variety which sometimes comes with a wax on it, that's part of it. And when I eat that, I don't get the same response. I just feel good, eating the same amount that they eat from the store variety. So, something's going on with the industry-produced foods, that basically we're getting close to – nothing really can be trusted despite what it says on the label, which may be one reason why Dr. Peat said if you're going to be getting any carbs from the store, it better be just the pure white sugar, the cane sugar that is in the bags. Very little outside of that is trustworthy.

**Dr. Joseph Mercola:**

Well, the fruit in the produce department.

**Georgi Dinkov:**

Sure, yes. They haven't yet gotten to the 3D-printing fruit yet, but I'm afraid it's coming.

**Dr. Joseph Mercola:**

Yeah, that's for sure. So maybe we can just review one of the reasons to support your statement that glucose is the ideal fuel to burn because that was actually somewhat controversial too, and I actually countered to what I had promoted in my book, "Fat for Fuel." And I was confused because it seemed, metabolically, that fat would generate less free radical species in the electron transport chain as opposed to sugar. But the problem is that – and this is an additional support for the safety of sugar and glucose, pure glucose. I mean, if you didn't have glucose, you would be dead. It is one of the primary fuels of your body. Your brain requires it. Yes, it can use ketones, and it can use lactate as substitute fuels, but you still need glucose.

So, if your glucose levels are really low because you're on a low-carb diet, your body is going to make glucose, and it's that stimulus to make glucose that is really part of the problem because one of the ways your body does it is it secretes cortisol. And yes, cortisol is fine and great if you need it acutely. It'll save your life when you're running from an acute threat. But if it's elevated chronically, it is going to radically decrease your health, because that's chronic inflammation, which is not good. It's totally different than acute inflammation, which is necessary, and important, and healthy. So, you've got to have a certain amount of glucose, and it's best if you're getting it from your diet, rather than forcing your liver to make it by having glucose stimulate that, the liver.

**Georgi Dinkov:**

Yeah, I completely agree with that. I mean, when I say it's the ideal, the only macronutrient that was meant to be oxidized fuel is that, if glucose is oxidized properly going through glucose courses, the Krebs Cycle and electron transport chain, it generates more carbon dioxide per molecule of glucose oxidized than do fats.

Now, carbon dioxide has this also controversial role in medicine. Used to be considered a metabolic byproduct, which could potentially be dangerous. People with chronic obstructive pulmonary disease have higher-than-normal levels of carbon dioxide in the blood. But then, medicine started to look into this more closely, I think, over the last 10 years, outside of Dr.

Peat's research and everybody else and said, "Hm. Carbon dioxide seems to have a lot of positive effects in the body." One of them, one of which is the supporting vasodilation.

So basically, if you don't produce, in other words, if metabolism is not working properly, if you're not oxidizing glucose properly, you're not going to produce sufficient amount of carbon dioxide. Well, what happens then? Vasoconstriction. And since that is actually a problem, raises blood pressure and all kinds of other things, all hell breaks loose, then the body releases an emergency vasodilator, known as nitric oxide. And that is now acquiring a very bad reputation. Even in mainstream medical circles, they started seeing that people who are taking the drug nitroglycerin, which used to be, I think to these days, the mainstream drug for angina, for chest pain, for people that have cardiovascular disease, for people who have blood pressure. They will give nitroglycerin, and of course, you'll quickly lower blood pressure. But over time, the inflammatory nature of nitric oxide ensures that these people actually get worse. And in fact, most people who take nitroglycerin on a long-term basis die from a heart attack or ischemic stroke.

So, if you're not eating enough glucose, just as you said, the body will get it. And in fact, the primary evolutionary role of cortisol in the body, the acute role, is actually supplying, preventing blood glucose from dropping too low, because you will go into hypoglycemic coma. It's only afterwards in the longer run, when cortisol, actually it's secondary role, is to actually dampen down inflammation. So really, the acute, the lifesaving rule of cortisol on a daily basis is to prevent you from dropping into a coma because your blood glucose went too low. But we don't want that process because it's going to get the glucose from the tissues. So, we need glucose. It's definitely glucose.

I think even the ketogenic proponents are not getting to the point of they're saying, "Look, we cannot be always in ketosis. That's just in the long-term, it's not good." I think the reputation, the good reputation the ketogenic diet acquired, came from the studies with children with intractable epilepsy. But if you look at, and several of the doctors that were doing this study said, "Listen, we are doing this diet in a metabolic ward. These children are being monitored all the time. Yes, they're getting into ketosis, but we only are doing this for two, three months, and until they start responding to the antiepileptic medication. After that, we stop this diet. We don't recommend that this child should be on this diet forever."

I think this kind warning was lost when it got to the general public, and they said, "Oh my God, if this can treat intractable epilepsy, it must be great. If it's good for the brain, it's good for the rest of the body." Not necessarily a bad analogy, but it turns out, that if you're actually doing this on a regular basis, you are getting into this ketotic state, and people with diabetes, one of the defining states, is that they're in a state of ketosis most of the time. They even sell these test strips where you can test your urine for the presence of ketones. You can get it, you can get into diabetic ketoacidosis. And all of these things [are] actually relievable by giving the body a little bit of glucose.

So, unless you're completely insulin-insensitive, if you are in a diabetic ketoacidosis and you get to the hospital, one of the first things they do is they put you on IV drip of glucose. And for most people, that resolves the issue. So, I think that is a strong evidence that we shouldn't be pushing

our body too much into the direction of glucose deprivation and oxidizing primarily fats. And if we have to get the glucose, just as we mentioned, ripe fruit, honey, but mostly fake, make sure you get it from the local farmer. And if not, then worst case scenario is get the pure, granulated crystal form, the sugar that's from the local store.

**Dr. Joseph Mercola:**

Yeah. But ideally honey, raw honey.

**Georgi Dinkov:**

Yes. Ideally, raw honey.

**Dr. Joseph Mercola:**

Locally produced would be better. You can actually even use raw honey, locally, if you have allergies, because it can be a type of allergy desensitization. Because they're typically pollen that the bees collect from local trees or shrubs, the flowers, grasses that you might be sensitive to, in small doses of that over time can desensitize you.

So, I wanted to touch on the nitric oxide, which you mentioned. Generally thought of as to be helpful. And there's a lot of books, I know a few authors who promote that as a useful strategy to improve your health. But actually, nitric oxide is a free radical, and yes, we need some. But I'm wondering your take on the – because your body has to have it.

**Georgi Dinkov:**

Yeah.

**Dr. Joseph Mercola:**

But excess of anything is going to be a challenge. This is certainly true for nitric oxide. But there are foods that are high in the precursors of nitric oxide, and one of my favorite foods is watermelon, which is high in citrulline. Which your body, I don't recall a specific pathway, but it does allow your body to produce nitric oxide if you need it. So, I'm wondering, are there any parameters or cautions you have about taking precursors or to increase nitric oxide? And arginine would be another one, amino acid.

**Georgi Dinkov:**

Yeah. Arginine is the direct precursor. Citrulline gets salvaged through a backward pathway, converted back to arginine and increases the nitric oxide.

**Dr. Joseph Mercola:**

Okay. So, that's how it just really works.

**Georgi Dinkov:**

Yeah.

**Dr. Joseph Mercola:**

It increases the arginine levels. Okay.

**Georgi Dinkov:**

Yeah. So, both I wouldn't take as a supplement, but I think you're safe, because unless you are eating the watermelon rind, most of the citrulline is in the rind. It's not in the actual watermelon.

**Dr. Joseph Mercola:**

Oh, interesting. So the white part.

**Georgi Dinkov:**

Yes, exactly.

**Dr. Joseph Mercola:**

Okay. My chickens eat the rind. They love it.

**Georgi Dinkov:**

Yep. But maybe, I think they evolved to be okay with it. But you can monitor, actually, if it's good for them, if the eggs that they produce, if you're getting eggs from them, if the shell gets started yet really thin and fragile, that's usually an indication of increased inflammation in the chicken's body.

**Dr. Joseph Mercola:**

Oh, interesting.

**Georgi Dinkov:**

Yeah.

**Dr. Joseph Mercola:**

My chicken shells are good, but I was traveling recently in a foreign country and the shells, they were extraordinarily thin. You just look at the egg and it breaks and shatters. So, these, I'm sure they were CAFO chickens and caged. And in fact, I was in Mexico, and I bought organic eggs and they only had white yolks. White yolks. I've never seen them before.

**Georgi Dinkov:**

Yeah. Means that whatever the chicken is getting, it's missing riboflavin and iron, because these are the two things that give the yolk most of its bright orange color.

**Dr. Joseph Mercola:**

Yeah.

**Georgi Dinkov:**

And I mean, the reason this is a good surrogate, the shell is that, we know that when in chronic inflammation, our bones get thin and brittle, osteopenia and osteoporosis, right? But we don't excrete anything with bone in it, but the chickens do. So, the chicken egg is actually kind of surrogate of what the chicken bone looks like. And then we know that during inflammation, the chicken wants to keep its calcium for itself, because it helps to dampen the inflammation, and basically at the expense of the egg, the egg is considered something nonessential.

So yeah, the nitric oxide is actually something that, well, since almost any protein we eat is going to have some arginine in it, then I don't think there is a need to actually take additional as a supplement. There were several clinical studies that gave people arginine specifically to increase their nitric oxide. And I think there were several serious adverse events as they called SAR. One person basically fainted, probably from the extreme hypotension that increase of nitric oxide caused. Another person got a heart attack. So, you probably don't want to supplement with something that's sounds as benign as an amino acid, but it's causing these very serious problems in highly trained people. Now, these people, I think were bodybuilders, if I remember the study correctly. So, they're doing a lot of other stuff. They're taking steroids, God knows what else they're injecting and taking. But still, it's not a good sign when you see that these people are getting these serious adverse events from 2, 3 grams of arginine daily, additional to what they're already getting through the diet.

So, I don't think there's even a danger of us becoming deficient in nitric oxide. It's always there. The inducible nitrous oxide synthesis is expressed everywhere, and it's primary role of really, of the nitric oxide, is a pathogen killer. That's when it's released in very large amounts, to destroy any virus, bacteria and whatnot. In fact, it was used as an antiviral therapy, until they found that nitric oxide reactivates the herpes virus, which is dormant, lays dormant in the lymphatic system and the nervous system. And it can cause the, usually – not usually, but about 40% case of the so-called hepatic encephalitis, really not a good thing. Herpes sounds benign, but it can actually kill you if you're taking too much arginine. There have been cases published on that. So, no need to take it as a supplement is my position. You have plenty from the protein that you're eating on a daily basis.

**Dr. Joseph Mercola:**

Yeah. I've learned that clinically too, that if a person has a herpes outbreak, the last thing you wanted to have him take is arginine.

**Georgi Dinkov:**

Yeah.

**Dr. Joseph Mercola:**

But the counter to that would be lycine, of course-

**Georgi Dinkov:**

Yes.

**Dr. Joseph Mercola:**

-which seems to help resolve the herpes at a relative high dose.

So, one of the other controversial areas, especially with respect to glucose and carbohydrates, would be the treatment of cancer. Depending on your age group, I mean, cancer and heart disease are like the number one, number two, I think overall, heart disease is leading, but in many age groups, cancer is number one. The number one cause of death is cancer. So, the treatment for that – I'm sure everyone watching this is either had experiences with cancer themselves personally, or certainly, a friend or loved one has had it. And if they're not, they're going to have it real soon, because it's just pervasive.

So, understanding the overall metabolic strategies to address that would be very helpful. Very helpful. And I thought I had a good handle on it because I was so embracing keto. And Dr. Tom Seyfried, who's a professor of biology at Boston College, I've interviewed him a few times, I'm sure you're familiar with him, he's not too far from you. He wrote the book “Cancer as a Metabolic Disease,” and actually wrote a paper on that, many papers. But that was sort of a summary paper that you can get for free online with the PDF. But his theory is to keep a low carbohydrate diet, and also, low glutamine, which is another fuel that the cancers use. And it's all based on Warburg's work with respect to glucose as the primary fuel for cancer. And they're primarily using glycolysis. So, when you restrict the fuel, you're going to really sabotage or abort many of their strategies for reproducing.

So, this higher, pure carbohydrate sugar, like honey, and fruits, and sugar, and even raw non-high-fructose corn syrup sugar, seems counter to that. So, I'm wondering if you can walk through the arguments that oppose that. And then also, I want to dive into some of the strategies you think almost all of us should be applying to prevent cancer. Because no one's going to argue that prevention is the best way to treat cancer.

**Georgi Dinkov:**

Yeah.

**Dr. Joseph Mercola:**

Absolutely. And so I think it's wise, and it's a strategy I personally adopt, is to treat myself as if I had stage IV cancer, and that's how I live my life. I mean, that's the diet I'm adopting. That's the lifestyle I'm strategizing for. Because this is the most effective way to treat cancer, before you get it.

**Georgi Dinkov:**

I agree. I think some of the ideas that are around the evil glucose feeding cancer stem from two basic misunderstandings. One is that cancer is an evil cell, genetically mutated, and that your only chance, once you get it, is to kill all of those cells in the body because they're not going to go away by themselves. First of all, that's not true. Spontaneous remissions of cancer are known, they're being published in the literature, and they vary depending on the cancer. I think prostate cancer has a pretty high rate of spontaneous remission. It's a very slow-developing cancer, unless you have the very aggressive version. But about 30% of the cases, prostate cancer resolved by

themselves. There's no need for treatment. And that's one reason why doctors are now saying, "If you have prostate cancer, unless it's the high grade aggressive one, we recommend watchful waiting."

So is they're going to watch it as if it's going to do something spectacular, but they're going to give you the blood test for PSA. They're going to send you for ultrasound. And unless it's growing or pressing on a – preventing you from urinating, or doing something that's really interfering with your life, they're going to let it stay there. Right?

So again, the basic premise is cancer is a mutated evil cell. The only chance to survive is killing. Well, this is the very old idea, but now over the last, I would say 20 years, and culminating in a paper that came about five years and made a huge storm of discussion on Reddit, basically a very famous, I think it's from the cancer center, Anderson in Texas, is the one MD?

**Dr. Joseph Mercola:**

MD Anderson.

**Georgi Dinkov:**

Yeah. The one that published it said, "It's always been the position of medicine is that basically it's the mutations that happen, cancerous mutations, and after that basically, the cell becomes metabolically deranged." It looks like we've had it backwards. It's the metabolic derangement that happens first. And over time, this actually triggers the genetic mutations, because the cell, being in an energetic deficiency, it cannot properly maintain its structure. So, that was a huge admission. Caused the storm of discussions and arguing on Reddit. But overall, some other doctors chimed in and they said, "Yeah, it looks like it's a good theory, but it's backwards."

So, what we need to be doing here, is not trying to kill the cancer cell, because it is not a cancer cell. It is actually a normal cell that is metabolically extremely deranged. And if we could compare it to anything, you'll be basically a diabetic cell. Which means, diabetes is now known to actually be caused by hyperlipidemia, too much fat in the body, too much fat in the blood, and basically, the cells are getting, due to the Randle cycle, they're basically stuck in oxidizing fats.

And then the glucose that's floating around in diabetes, a good portion of it, because it cannot be metabolized. You're either peeing it through the urine – established test for diabetes, right? – or you get converting a good portion of it into lactic acid, because the body cannot properly metabolize it. And this paper said the exact same thing is happening in cancer. We are seeing an abnormal rate of fatty acid oxidation, and because the cell is stuck into the cycle, due to oversupply of fat actually, which is established in cancer patients already, then this glucose that's floating around the body, the "cancer cell," cannot actually metabolize it.

But because the cell needs its glucose for a variety of purposes, not just synthesizing energy, but synthesizing DNA and RNA, and I think those two units for cellular repair and growth of the tissue, can only be synthesized from glucose, not from fats. So, the cancer cell says, "Oh, I am in a state of extreme deficiency of glucose. Give me more." So, it increases the synthesis of these glucose transporters known as GLUT1 through 4. And basically, that's why when you give the body, a patient with cancer, if you give them a little bit of radioactive sugar, it accumulates

mostly into the tumor, because the tumor has a much higher capacity for uptake of sugar. However, in a key point, key difference here, has a much lower capacity for oxidizing that sugar. So, you're going to see a lot of radioactive sugar accumulation in the tumor, but most of it will get converted to lactic acid.

So, this paper that came out said, we need to do something that gets the cell out of its stressed state. And I think we already agreed, that excessive oxidation of fat is a stress state. Right? We don't want to produce lactic acid, and as long as we are over oxidizing fat, we will be producing lactic acid, and we will be uptaking more glucose. So, the study, the doctor said, "Okay, what can we do?" Well, several studies have come out since then. One of them here at NIH (National Institutes of Health), and they said, "Okay, how can we restrict the supply of fat?" Assuming the fat is the problem. There's only really two macronutrients that can go to the cell. Assuming cancer is a metabolic disease, and assuming a cell can only oxidize fat or sugar, then if it's not the sugar, it's got to be the fat. There's nothing else. Right? And if it's not the mutations, if the mutations are secondary to the metabolic arrangement, it's got to be one of these two macronutrients that we can manipulate to actually try to cure the cancer.

They already tried glucose restriction. In fact, there is even a molecule that I think it's called 2-Deoxy-D-glucose, that is very similar structurally to glucose, but it takes its place so the cancer accumulates that. And basically, they said, okay, and creates sort of like this even more glucose deprivation than what a normal cancer cell does. That did not cure cancer. It did have a sensitizing effect to chemotherapy, is what they're calling it, but it did not result in actual cancer remission.

So now, we're back to the other macronutrient, restricting the supply of fat. Multiple studies already. It's not one, not five, not even 10. It's more than that. I have at least 30 on my blog, and even more so on the other form, have shown that restricting lipolysis by administering beta blockers, very, very commonly used drug. I think it's called propranolol.

**Dr. Joseph Mercola:**

Propranolol. It's the first beta blocker, right?

**Georgi Dinkov:**

Exactly. The first beta blocker.

**Dr. Joseph Mercola:**

Inderal is a brand name.

**Georgi Dinkov:**

Exactly. Exactly. So very, very, very widely used drug for blood pressure. But the way it lowers blood pressure is by blocking adrenaline. If you're blocking adrenaline, you're also lowering lipolysis, because adrenaline is the primary activator of the hormone sensitive lipase enzyme. And basically, you're going to be restricting the supply of fat from your own tissues to the tumor.



Then what else can be done? Well, that's not the only source of fat. You're also getting it through the diet. Right? Other studies have tried doing low-fat diets for cancer, and are getting actually good results. Not cure, but good results. The propranolol induced full remission in the cancer.

**Dr. Joseph Mercola:**

Wow.

**Georgi Dinkov:**

Another study used a beta oxidation inhibitor known as Etomoxir, used for heart disease. And basically, that also induced full remission in neuro-glioblastoma, which is essentially incurable. John McCain, Senator McCain, Senator Ted Kennedy, I think both died from that cancer. It's got a very, very poor prognosis. I think is basically not, maybe 20% survive after five years.

So, these studies showed, okay, either restricting the supply of fat, or blocking the actual oxidation of fat inside of the cell, has [a] very strong therapeutic effect against cancer. And then subsequent studies afterwards, basically used variations because there are multiple drugs that do, they have antilipolytic or anti-beta oxidation effect, the pros of oxidating fat. All of them have confirmed these findings. So, I think a very recent study used the drug meldonium, which is now a doping drug. I don't know why they declare it like that, but it's used by athletes because it increases your exercise capacity. How does it do that? It basically restricts the transport of fats, long-chain fatty acids, into the mitochondria, by depleting your body stores of L-carnitine, the amino acid L-carnitine.

But the overall effect is still the same. It's basically forcing the, at least giving the cell the ability to get out of this excessive fatty acid oxidation state. And as soon as you do that, there's no metabolic damage that's preventing the cell from oxidizing glucose. It's all functional. If you flood the cell with fat, then basically, that's what the cell will oxidize, because it's relatively over abundant relative to the glucose that is getting to the cell. So, if you stop that process, or at least greatly restrict it, the cell starts oxidizing glucose again. And they're even older studies showing that direct injection of glucose into the tumors, in many cases, completely cured them. Yeah. Only animal studies that I don't think they ever been done in with humans, but we have a decent amount of evidence that cancer is essentially an extreme form of diabetes, if you call it diabetes Type 0.

But the very end stages of cancer and an intuitive Type 2, Type 1 diabetes are actually identical. Diabetic people get into extreme form of cachexia. Basically it's a wasting disease. And until the discovery of insulin, people with type one diabetes will invariably die. And they died from a wasting, basically they shrivel and they look like a parchment. And that's what a person with a very advanced stage of cancer usually looks like. And now we know that the drivers of cachexia are excessive cortisol, because it shreds your tissue to provide the glucose the cancer cell thinks it's not getting, and also the adrenaline and the excessive lipolysis, which, if most of it is PUFA, because we already discussed that we're storing the PUFA when you're flooding the body constantly from your fat stores with PUFA, or from the diet, you're creating a very strong inflammatory reaction. And that itself, has a wasting effect on the body.

So again, strong evidence that of the two macronutrients, it's the fats, especially the polysaturated ones that are actually the preferred fuel of cancer. And then it's the glucose that the cancer accumulates, because it senses metabolically that it's not getting enough of it, because it's not processing it properly.

**Dr. Joseph Mercola:**

Wow.

**Georgi Dinkov:**

Yeah. The way we should be treating dietary cancer, or at least preventing it, is that, make sure that you are not in an over-excessive state of fatty acid oxidation. There's always some going on, especially by the muscles at rest. And then supplying sufficient amount of glucose. Do not restrict glucose, because as we said, the body will get it in a bad way. Right? But also, because you are contributing to that state, if there's any cell that's, let's say cancer stage 0 in situ, slightly hyperplastic cell as they call it, not yet hyperproliferating, you may be getting the cell pushing it, nudging it towards the state where it's going to say, "Okay, I'm not getting enough glucose. I'm going to start sending signals," such as increased cortisol, right? Increased adrenaline. "Give me more glucose.", and it's actually become cancer.

**Dr. Joseph Mercola:**

Okay. That's a really helpful explanation. Thank you for sharing that.

So, in an effort to adopt this, I'd like to share a personal story. I've been convinced that the evidence that you've been presenting and Ray Peat is written about for decades now, that the carbohydrates are necessary and important. So, I've increased my carbohydrate intake to about 200, maybe 250 grams, depending on the day and the fruit availability. But what I noticed, I just got my blood work back last week, and my triglycerides were high. They were in triple digits, low triple digits, just over 100, which is abnormal. Typically, it's closer to 50. And in my clinical experience, that's almost – I think I understand what the answer is, but I wanted you to confirm it. It's almost always related to excessive carbohydrate intake, which sort of conflicts what you're just saying. But I think it's, the deeper explanation is that, if you're going to increase carbohydrates, you have to lower fat.

**Georgi Dinkov:**

Yes.

**Dr. Joseph Mercola:**

If you're not lowering the fat, then you're going to have a complication. And so, I lowered it, but I don't think I lowered it enough. So, maybe you can discuss the macronutrient ratios. And is it true that if you have too much fat with that increase in carbohydrates, you're going to run into problems?

**Georgi Dinkov:**

Oh, absolutely. In fact, most of the animal studies that we see say like, "Hey, high-sugar diet causes this. High-sugar diet causes that." If you look at their diets, these people, these animals

are already on a high-fat diet. All they did was add more sugar on top of it. Well, of course, in a situation like that, you're going to have increase in the triglycerides, increase in LDL cholesterol, because the body can synthesize cholesterol from the sugars. Right? So, you're going to get these biomarkers that are associated with cardiovascular disease to increase, but it's actually not really a fair comparison. What you should be doing, is keeping the diets isocaloric, the same. And also, not increase the total amount of calories, just replace that, some of that fat with sugar. And when you do that, I think that's – that was the rat study that I mentioned, that they gave them free access to Coke. So, they basically, they actually allow them to increase the Coke intake at the expense of fat. These rats did not gain weight, but they were eating eight times more calories than before.

Another thing that is probably important is that since there's always some baseline lipolysis going, and when you're increasing the carbohydrate intake, the excess that cannot get metabolized, of course, will get converted to triglycerides and then stored. When you are increasing the carbohydrate intake, you should be decreasing the amount of fat. If you're not, then at least you should be taking something that stimulates the oxidation of carbohydrate so that it doesn't result in the raising of triglycerides.

Aspirin, caffeine, especially vitamin B3 niacinamide, all of these are known to lower triglycerides and, by now, the consensus, which is a bad word, but the consensus mechanism of action is that all three of these components are increasing the oxidation of carbohydrates. That would be my take.

If you're increasing the carbohydrates and you're getting increase of triglycerides, two things, either eating too much fat or you're baseline metabolic rate is probably not where it should be, so you can use some metabolic stimulation from these substances.

**Dr. Joseph Mercola:**

I wanted to go into some of the supplements too. You mentioned some of the ones I wanted to discuss. In addition to helping increasing the ability to oxidize glucose as a fuel, I believe they have two roles. That's one. The other role is they could inhibit the oxidation of fatty acids, specifically linoleic acid, because clearly the most foundational strategy that anyone could implement for improving their health is to lower your linoleic acid, the omega-6 intake.

I also want to talk a little bit about the omega-3 because that's another controversial [topic], but let's, let's just stick with the supplement since that's what I started with.

You've got the aspirin, we'll take it one by one, is that also in decrease the oxidation of the fats-

**Georgi Dinkov:**

Yes.

**Dr. Joseph Mercola:**

-and in addition to increasing the oxidation of glucose?

**Georgi Dinkov:**

It lowers inflammation, which of course is great. We already know chronic inflammation is very bad for long-term health. But lower inflammation will also lower baseline cortisol, and we know the cortisol interferes with the metabolism of glucose. The side effects of cortisol, whether you take it as a drug or it's high-endogenous, they're listed there, go and look at it. It's basically obesity, diabetes, heart disease, dementia, osteoporosis, et cetera. By lowering inflammation, you will be lowering, probably, your baseline levels of cortisol.

In addition, aspirin, or its metabolite salicylic acid, has an inhibitory effect on the enzyme 11beta-hydroxysteroid dehydrogenase type one. Very long name, but it's basically the enzyme that synthesizes the active hormone cortisol from the inactive precursor cortisone. So, aspirin will actually lower your synthesis of cortisol directly, not just by lowering inflammation, but also lowering the actual synthesis of cortisol.

There's this famous human study giving diabetic and morbidity people the human dosage of 99.0 milligrams per kilogram daily of aspirin. Considering these people weigh more than a hundred kilos each, that's about 10 grams of aspirin daily each. That's a massive dose to most people. Now, it used to be kind of a commonly used dosage for things like rheumatoid arthritis, lupus, et cetera-

**Dr. Joseph Mercola:**

High-dose, you can get ringing in your ears, tinnitus.

**Georgi Dinkov:**

Exactly, yeah. It can cause some problems with the ears, but that was the only available treatment back in the day for chronic inflammatory diseases and people didn't balk at this at such dosages. Now, you talk about anything more than the top of the aspirin, your doctor will kill you, say, "Oh, you want to bleed to death or what?"

Anyway, the aspirin lowers the sense of cortisol and has been shown that aspirin is actually capable of decreasing the oxidation of long-chain fatty acids by up to 60% when it's in the body in a concentration of about 1 millimole per liter, which is achievable in humans with a single dose of about 2 to 3 grams of aspirin. So, you actually decrease-

**Dr. Joseph Mercola:**

Oh, that high?

**Georgi Dinkov:**

Yeah.

**Dr. Joseph Mercola:**

That's a lot of aspirin, still.

**Georgi Dinkov:**

But, you also don't need that much of a decrease of the fatty acid oxidation, 6.0%. A very recent study demonstrated that a much tinier dosage, the baby aspirin, 81 to 100 milligrams daily, decreased fatty acid oxidation by about 30%. So, I think that's a very good effect from a very tiny dose. Yeah, and of course-

**Dr. Joseph Mercola:**

Wow. It's almost the same dose as niacinamide, actually.

**Georgi Dinkov:**

Exactly, yeah. Aspirin does it through different... Oh, aspirin also has an anti-lipolytic effect, not as strong as niacinamide, but it's got these three different things that are basically helping to lower both the supply of fat to the cell and excessive oxidation of fats even at these tiny dosages. Due to the Randle cycle, assuming there is no other DA damage to the cell, which so far no study has managed to find any actual structural damage to a diabetic or cancer cell or whatnot, as soon as you restrict the excessive oxidation of fat, the cell says, "Okay, I can deal with glucose, give me some glucose." Then metabolism recovers, the oxidation of glucose recovers. And usually over time, very serious diseases can resolve. Fibrotic disease, which are considered irreversible up until recently, if you look at the studies on aspirin, they're showing complete reversible of cirrhosis of heart fibrosis, of lung fibrosis, et cetera.

All of these, even though that they were already established, so the thinking is, even if inflammation caused them, inflammation is no longer a factor because it's already established fibrotic tissue which cannot resolve. Well, if the aspirin managed to reverse it, there's something going on metabolically in the aspirin that allowing for this change to happen.

The recent studies are saying it's the improved oxidation of glucose that is allowing the body to process this fibrotic tissue and either get rid of it through macrophages or actually convert it back into normal healthy metabolic tissue.

**Dr. Joseph Mercola:**

Which is the best. That's the best, to normalize it.

So, you had mentioned earlier, salicylic acid. So, aspirin, for those who don't know, is acetylsalicylic acid. So, is aspirin the preferred route or would salicylic acid be just as good?

**Georgi Dinkov:**

Most of metabolic effects are coming from salicylic acid. The acetyl group on aspirin, which by the way was only created so it can be patented. When, I think Bayer was the company, when it saw the amazing effect that salicylic acid has on all these conditions, they said, "Well, we want to sell it, but we can't sell salicylic acid because nobody's going to pay a lot of money for that. Well, let's convert it to acetylsalicylic acid," and got aspirin. That's all it is.

**Dr. Joseph Mercola:**

Oh gee. So, is your preferred recommendation for this intervention salicylic acid then?

**Georgi Dinkov:**

For people who are taking it for things like if they've fever, it looks like the acetyl group is very important for basically dampening the fever, but for the overall metabolic effects, equally good. Either aspirin or salicylic acid, which can be bought easily as powder or you can get it from willow bark.

In fact, that's how the ancient Egyptians-

**Dr. Joseph Mercola:**

Sure, sure.

**Georgi Dinkov:**

-that's how they first got in touch with salicylic acid. They were eating willow bark by seeing that the goats that they were pasturing, had an inflammatory problem, they would go and eat the bark of the willow because it's very high in salicylic acid.

**Dr. Joseph Mercola:**

I want to stick with aspirin for a bit because it's somewhat controversial, and I was reading some of Ray's work on this and it seems like there was a strong effort, a big surprise from [Big] Pharma to discredit aspirin. Why? Because it was a direct competition to those nonsteroidal anti-inflammatories that they were introduced which were high profit, and aspirin is dirt cheap.

**Georgi Dinkov:**

Yes, exactly.

**Dr. Joseph Mercola:**

I'm sure you're aware of that. Maybe you can enlighten us further as to this. Is this true? That there was this discrediting campaign? It all started when they came out with the NSAIDs. Motrin of course, and ibuprofen being the first one,

**Georgi Dinkov:**

Exactly. So, ibuprofen and naproxen sodium, I think is the two most famous ones that are currently being sold, they were synthesized specifically to compete with aspirin because the company said, "Well, we can't allow Bayer to sell this," basically, "natural drug for obscene amount of profit. Let's see what it does, and let's create something in the lab synthetically that has the same effects."

So, the reductionist approach at the time led these doctors to look at aspirin and say, "Oh, it's just a COX inhibitor." The cyclooxygenase. In fact, it is a non-selective one. So, let us come up with a very selective, because the COX's enzyme has two units, one and two, "Let's come up with more selective COX inhibitors and we're going to sell them as better drugs, as the modern aspirin. They'll be much more potent and selective," which pharmacy loves, because one disease, one drug. One problem, one bullet.

Unfortunately, it doesn't work like this in real life, but they created these drugs and they started marketing them. It basically took off and people started taking them until, I think it was in the '80s when they started saying that people who are taking long-term ibuprofen or naproxen were having much higher rates of cardiovascular disease. In fact, sudden cardiac arrest was very common in these people.

Now, if you go to the store and you buy ibuprofen or an naproxen sodium, there's a warning. I think FDA (Food and Drug Administration) started putting warnings on the label saying that, "Talk to your doctor about long-term usage because in higher doses than what you're going to find in this box, in this bottle, these drugs may cause heart issues." The pharma industry got spooked, it tried to do these long-term observational trials to prove that aspirin also has the same risk. It did not.

No study, so far, has demonstrated that aspirin has the same risks, cardiovascular risks, that these NSAIDs do. All of them, the ones that are currently sold on the market. I think all of them do, but at least the two most popular ones.

In addition, these drugs, I think they already proved ibuprofen, and I think the naproxen, they tend to have an anti-androgenic effect in males. Now, they may not sound like much, but now we know that the chronic decline in androgens in males is related to things like, beyond the obvious ones, such as frailty or low muscle mass, but as we mentioned earlier, it's fat-free muscle mass that is a very good indicator of health, right? It's the hand grip strength, very good indicator of health. If you lower androgens in males, both of these are going to be negatively affected.

Ergo, one could conclude that taking these NSAIDs outside of aspirin has a long-term detrimental effect on the body, at least in males. But the same thing, the cardiovascular effects have been seen in females. Conversely, for aspirin for a long time, and I think to this day, actually, used to be the standard recommendation for preventing cardiovascular disease, but now because of the fearmongering about its bleeding risks and whatnot, I think now FDA is basically recommending against primary prevention.

In other words, they're saying, "Well, you can talk to your doctor about potentially taking aspirin for preventing heart attacks, but we don't think the benefits outweigh the risks." They're not bending it outright, but they've retracted their previous recommendation, which was, "If you're over 50, regardless of your risk factors or history of heart disease in the family, taking a baby aspirin is likely to reduce your risk of future heart attack." Now, they've retracted that. They're saying, "Now we think the risks outweigh the benefits, but if you want to talk to your doctor and take aspirin, please do. There's no such benefit ever established for the NSAIDs. In fact, it's the exact opposite. NSAIDs are known, outside of aspirin, to increase the risk of heart attacks and also heart failure." So yeah, aspirin is unique in that respect.

### **Dr. Joseph Mercola:**

Yeah, that reminds me. One of the first stories I wrote, I started my website in 1997, it was a long time ago, but one of the first big stories we broke was on Vioxx, which was a drug and it's an NSAID produced by Merck. I wrote a story about it in 2000. This was before it was on the market because the studies were showing that it radically increased the risk of stroke and heart

disease. As it wound up, they launched it despite of those studies and killed 60,000 people, died directly as a result of this. Merck was caught red-handed, and due to FOIA (Freedom of Information Act) requests and the depositions, they found that they knew this before they launched the product. They were suspected of time to go out of business because those lawsuits were like \$20 to \$30 billion. They wound up only selling it for a few billion. Of course, the lawyers figured it out for them, and they continued today.

**Georgi Dinkov:**

A bit of a peripheral, do you know why this drug killed all these people? What was actually behind it? The structure?

**Dr. Joseph Mercola:**

With Vioxx?

**Georgi Dinkov:**

Yeah. Vioxx is structurally a so-called, "steel beam."

**Dr. Joseph Mercola:**

Oh, okay. I did not know that.

**Georgi Dinkov:**

Very closely related to the natural molecule resveratrol, which is now also all over the news.

**Dr. Joseph Mercola:**

So, you're not a fan of resveratrol either?

**Georgi Dinkov:**

No. Absolutely not.

**Dr. Joseph Mercola:**

No surprise.

**Georgi Dinkov:**

Yeah, it's estrogenic. It's basically a natural estrogen.

**Dr. Joseph Mercola:**

Yeah, yeah.

**Georgi Dinkov:**

It's a phytoestrogen, and Vioxx is a very potent synthetic version of that. Estrogen is known to actually cause heart attacks because it clots the blood, but it's got other problems as well. So, think of Vioxx is taken on extremely potent form of an estrogen, not surprising that it cause all these cardiac events.



**Dr. Joseph Mercola:**

Wow, yeah. Now, does aspirin inhibit estrogen too?

**Georgi Dinkov:**

Yes, of course. It inhibits the aromatase, which is stimulated by the prostaglandins coming from linoleic acid.

**Dr. Joseph Mercola:**

Ah, geez. You just provided a very compelling argument to have many people consider it as a regular supplement. Maybe not aspirin, because a lot of times it's combined with other additives in the pill that are not that good for you.

**Georgi Dinkov:**

Yeah.

**Dr. Joseph Mercola:**

But, you can get a willow bark extract and get the salicylic acid and probably get similar if not the same benefits. It's a pretty potent story.

**Georgi Dinkov:**

CVS used to sell pretty nice aspirin, though. The only additive was cornstarch.

**Dr. Joseph Mercola:**

Oh, we love cornstarch!

**Georgi Dinkov:**

But, it was pretty benign compared to what they have now.

**Dr. Joseph Mercola:**

Yeah, yeah.

**Georgi Dinkov:**

Something happened just before the pandemic, and we both know what the pandemic – what kind of fake story there was. But anyway, CVS removed all of the so-called immediate release aspirin, which is just aspirin mixed with a little bit of cornstarch.

**Dr. Joseph Mercola:**

Wow. Sure.

**Dr. Joseph Mercola:**

Now they only have the extended release, which has various iron salts, various things like talc, titanium dioxide. Lawsuits about this all over the place.

**Dr. Joseph Mercola:**

Yeah, right. Magnesium citrate

**Georgi Dinkov:**

Yeah, exactly. On top of that, studies found that if you take the extended-release aspirin, you're actually at a higher risk of bleeding than if you take the immediate release. Now, they can only get the immediate release from the internet, and even there, there's a shortage. Amazon is now, I think, out of [inaudible 01:04:45], I think is the brand name, but it's the immediate release aspirin and cornstarch. The only thing that's left for most consumers if they go to the local store will be the coated aspirin that basically is-

**Dr. Joseph Mercola:**

Which you don't want.

**Georgi Dinkov:**

You don't want that, absolutely.

**Dr. Joseph Mercola:**

You do not want. That makes perfect sense. But yeah, thank you for expanding on that because like most things, the devil's in the details. If you don't understand that, you're going to make, what you think is ostensibly a good choice, but it's going to have unintended consequences. That's great.

So, let's get some of the other supplements. Vitamin E, I think we talked about this last time, it's also pretty similar with respect to its ability to inhibit lipolysis, I believe. Maybe you can expand on it. Does it have any impact on improving the metabolism of glucose?

**Georgi Dinkov:**

Oh yes, of course. Mostly through its antilipolytic effect, but also because it's an estrogen antagonist. The way vitamin E was known was-

**Dr. Joseph Mercola:**

They metabolize it. It's not an aromatase inhibitor-

**Georgi Dinkov:**

It is, actually.

**Dr. Joseph Mercola:**

Okay.

**Georgi Dinkov:**

It's also an estrogen receptor antagonist directly at the receptor.

**Dr. Joseph Mercola:**

Oh geez, you got to be crazy not to take vitamin E.

**Georgi Dinkov:**

I agree with that statement. I think everybody can use a little bit, assuming it's a good product, yeah.

**Dr. Joseph Mercola:**

Yeah, well that's good. Let's go on this like you did with the aspirin because it's important. I think the parameters were that most of it, that vitamin E should be a combination product. Should have some tocotrienols, it should have the different isomers of tocopherol.

**Georgi Dinkov:**

Tocopherols.

**Dr. Joseph Mercola:**

But, alpha being the most important, maybe half of the tocopherol should be alpha. Then you could have the beta, gamma and deltas.

**Georgi Dinkov:**

Yeah, so the pharma companies managed to bastardize even vitamin E because they saw how successful it was and they said, "We can do better!"

So, they synthesized alpha-tocopheryl acetate. In fact, they use the both-

**Dr. Joseph Mercola:**

Most vitamin E comes from Roche, doesn't it?

**Georgi Dinkov:**

Yeah. If you get a synthetic vitamin E, but if you get it the Allegro vitamin E from the pill in the store, most likely, it's actually a mix of L and D isomers with the L one being inactive. They're giving you racemic vitamin E, and on top of that it's an actual Ester so it only has about 50% of the activity of the real one. And if you divide that by two, because one of the isomers is inactive, you're getting about 25% of the activity of what real vitamin E should be getting if you're getting the synthetic one.

But anyways, back in the early 20th century, the reason vitamin E is called tocopherol, that's the name, tocopherol, it means pregnancy-promoting, so it's known as a fertility factor in both males and females and it was known that deficiency of vitamin E causes infertility in both males and females. If there was any problem with a couple having problem to conceive, they will give them a little bit of wheat germ oil, which is very rich in the old isomers.

Unfortunately, also very high on PUFA, but they thought for a one or two dosages, the benefits outweigh the risks. Only later they managed to start extracting just the tocopherols, and basically get rid of the PUFA.

Tocopherol, so fertility-promoting vitamin, but what causes infertility? We know estrogen does. In fact, most of the birth control pills on the market are a combination, used to be only pure estrogen, usually ethinyl estradiol, now they're doing combination progestin and estrogen. But long story short, if you give enough estrogen, the female cannot get pregnant. Now, they also know, know that estrogen is an antifertility factor in males. The people to have an expression of aromatase, there are some genetic conditions like that, the males cannot beget children. Conversely, if you give these people an aromatase inhibitor, then they become fertile again and they can beget children.

Vitamin E from very early on was noticed that it can actually cure or prevent many of the issues associated with estrogen, and also miraculously was able to prevent most of the damage done by PUFA. And in parallel, these researchers noticed that estrogen and PUFA have some remarkable parallels in terms of their metabolic and anti-health effects. Both, of course, one of them is a fat, both of them increased lipolysis and increased the oxidation of fats. Both of them promoted the effects of estrogen in the body, one of them being pure estrogen, but the PUFA, actually, by giving the animals PUFA, you increase their endogenous production of estrogen and the little estrogen that they produce synergize with the PUFA and becomes much stronger in terms of its overall effects.

Vitamin E was able to antagonize both of these effects for both of these nutrients, but the researchers noted that estrogen and PUFA, even though they look structurally a little bit different, they're both lipids technically speaking, they're kind of like the same component. And if you don't believe that estrogen is good, then you can't believe that PUFA is good either.

So anyways, vitamin E was starting to get studied a lot more extensively until the 1950s. They noticed that it has an antilipolytic effect and in fact it was used in very high doses by the Shute brothers in Canada, they're very famous naturopathic doctors, in doses of 5 to 6 grams daily it was known to induce remission in very severe cases of Type 2 diabetes.

They also used that as treatment probation of heart disease and they noted its very similar effects to aspirin. Then they said, "Okay, we know aspirin is anti-inflammatory. We know it's a COX inhibitor. Tocopherols have already proven to be as well. Aspirin is also a LOX inhibitor, the other pathway of metabolizing PUFA. Vitamin E is also." And by vitamin E, I mean all the four isomers of the tocopherols. We know that aspirin is antilipolytic, it reduces lipolysis. Vitamin E does so as well. We know that aspirin prevents the activation of aromatase by the prostaglandin. Actually, vitamin E is a little bit stronger, it directly inhibits the activity of aromatase.

Then, a recent study showed that vitamin E, because of its structure, it's got a phenol ring and a hydroxyl group, connected, combines to the estrogen receptor alpha and act there as an antagonist. It's similar to antiestrogenic drugs, clomiphene, tamoxifen, that we use for breast cancer. In fact, several studies from the same group said, "Why are we bothering with clomiphene and tamoxifen considering they're actually their synthetic estrogens? They're only

partially antiestrogenic, but they have estrogenic effects in other parts of the body. We should be using vitamin E." And I fully agree with that statement.

Through [a] remarkable parallel, vitamin E with aspirin and all the effects that it has, but in some respects, especially the opposition of estrogen and opposition of the effects of PUFA, I think vitamin E is stronger.

**Dr. Joseph Mercola:**

Yeah. So you make a very strong argument to take it as a supplement. But again, just like the aspirin, you've got to be really careful on which one you choose, because a lot of the vitamin in the market is garbage. As you mentioned, there's the racemic version, so you just want the D version. That's the only biologically active isomer. Then, you want to have the right dosage, not the dosages the Shutes were using for these pathologic conditions at 8 or 9 grams. You're probably looking at a hundred milligrams or units. It is pretty similar, right? Then with maybe 50 milligrams total of the tocotrienols. You need a relatively low dose, otherwise, it's not going to work as effectively.

**Georgi Dinkov:**

Yeah. One of the recent studies show that your needs for vitamin E can be directly calculated by your PUFA intake. So you need about-

**Dr. Joseph Mercola:**

Oh, interesting.

**Georgi Dinkov:**

Yeah, you need about 2 milligrams of vitamin E from all sources. Like, all isomers can do it. Two milligrams of vitamin E per gram of PUFA eaten. So, if you're eating 50 grams of PUFA daily, you need about a hundred milligrams of total tocopherol-

**Dr. Joseph Mercola:**

If you eat 50 grams of PUFA, you're in serious problems.

**Georgi Dinkov:**

Serious problems, yes.

**Dr. Joseph Mercola:**

That's 10 times higher than you should be.

**Georgi Dinkov:**

But unfortunately, most people, that's their daily norm for the diet. If you eat commercial food. Especially these buffets, guess what? They're only cooking with soybean and canola oil and sunflower oil, it's the cheapest stuff they can get.

**Dr. Joseph Mercola:**

Oh man. I think it's soybean, and canola, are the number one and number two used PUFAs. For the seed oils, actually,

**Georgi Dinkov:**

And unfortunately, they're the highest in PUFA.

**Dr. Joseph Mercola:**

Yeah. This is crazy. All right, I want to discuss the amount of dosage, but I want to divert into PUFAs because there's just no question. No one's going to argue, at least in our community, that the omega-6 needs to be essentially limited. I think we discussed previously the strong arguments that it's really not even an essential fatty acid because there's nine generations of animals that have been studied with essentially no PUFA diet and did just fine. Had no signs of an essential fatty acid deficiency because it's usually the other micronutrients that are deficient that you get. And if you supplement them back in, they're not going to have those symptoms. They're usually skin symptoms.

**Georgi Dinkov:**

If anybody's not convinced about PUFA, I recommend Google in the Israeli paradox, and then you can add PUFA as a keyword.

**Dr. Joseph Mercola:**

Well, search engine. We don't want to promote Google in any way shape or form.

**Georgi Dinkov:**

Oh, sorry. Yes, I'm sorry. Yes.

**Dr. Joseph Mercola:**

Yeah, he would know that. What was the name of it again?

**Georgi Dinkov:**

The Israeli paradox.

**Dr. Joseph Mercola:**

The Israeli paradox, okay.

**Georgi Dinkov:**

It's about the country Israel, which is the highest consumption of PUFA per capita in the world, and also has the highest rate of cancer of-

**Dr. Joseph Mercola:**

Wow, did not know that.

**Georgi Dinkov:**

-[any] developed country, yeah.

And you can argue any way you want, but it's attracted already attention. The reason it attracted attention is that PUFA used to be promoted as a cardiovascular, healthy food, right? It lowers your cholesterol, whatnot. And now they're saying, "No, it looks like it's – let's assume that it helps for cardiovascular disease, but it certainly does not help for cancer." But now we know the cardiovascular disease and cancer go hand-in-hand. So, if PUFA is promoting cancer, chances are it's probably not good for your cardiovascular health as well.

**Dr. Joseph Mercola:**

And diabetes too. So, the issue I wanted to discuss was, you're just continually saying PUFA, but that is a generic term, which includes not only omega-6, but omega-3-

**Georgi Dinkov:**

Right.

**Dr. Joseph Mercola:**

-which is the controversial portion of this, because there's a seal, just probably just every bit, maybe even the same people who are convinced that that glucose should be avoided at all costs, are people who believe that omega-3 should be embraced at all costs. Those same people, though, will acknowledge that, like anything, you need to be selective in the omega-3s you're eating. So, I have long advocated that taking most omega-3 supplements is a prescription for a disaster because they're essentially synthetic, they're highly processed, they're typically ethyl esters. They're not the typical omega-3. And that might be 90% of the omega-3 supplement industry. I don't know the numbers, but you might have a better take on that. But the central question becomes – I think omega-3s potentially are more toxic than omega-6s because they're more oxidizable and then they're more easily damaged. But does that mean they need to be excluded at all costs? I think not.

It seems to me, from my perspective, that if you get it from healthy food sources, and this is essentially a game-changer with respect to what are those healthy food sources because many people think the fatty fish are the best ones, but especially cold water fish like salmon can be, but the colder the water that the fish is grown in, the more omega-3 they're going to have because it's used to make the tissue not solidify at colder temperatures.

**Georgi Dinkov:**

Exactly.

**Dr. Joseph Mercola:**

So, it seems like warmer water fish, primarily from the tropics, like tilapia you can get from Columbia or Central America-

**Georgi Dinkov:**

Carp, especially-

**Dr. Joseph Mercola:**

-would be relatively low in omega-3, yet have enough, and especially not just the omega-3, but the peripheral additional micronutrients like the resolvins and the protectins that seem to provide some additional beneficial utility. So, I just wonder what your take is on it because it is an area of major confusion, especially once you start diving into this.

**Georgi Dinkov:**

So, the reason I think the omega-3 supplementation came up, at least in medicine and in the mainstream press, is that they started to see that omega-6 is actually a disease promoter. And because the fish oils that are sold commercially, actually they're an industrial byproduct. They're the waste product of the fish industry, so they needed a market for those. And they said, "Okay, yes, omega-6 are bad, but you still need the polyunsaturated fats because they're essential. But guess what, you should be replacing the omega-6 with omega-3 because it's the ratio of the omega-3 to omega-6 that really determines your risk of heart disease. And by taking more omega-3 at the expense of the omega-6 you'll be lowering inflammation and all good things will happen to you." Right?

**Dr. Joseph Mercola:**

Right, that's the theory. That's what they preach, right.

**Georgi Dinkov:**

Yeah. Part of that is correct because when you feed the omega-3s through these enzymes COX and LOX, which take omega-6s as an input, as a raw material, you will get a slightly less inflammatory versions of the prostaglandins and the leukotrienes. But that's not the whole story. Since as you mentioned, the omega-3s are much more easily combustible or peroxidizable. They're producing probably 10 times more of the toxic aldehyde-

**Dr. Joseph Mercola:**

Wow.

**Georgi Dinkov:**

-and other byproducts that the omega-6 are producing. So since many of those are directly carcinogenic, you would expect that a very high intake of omega-3 would actually have high correlations with several types of cancer, which has already been confirmed in the Scandinavian countries. They eat a tremendous amount of cold-water fish. There were very high rates of melanoma, which used to be thought of as a sun-related cancer. It is actually not.

And basically when they start feeding these omega-3s in clinical trials for disease such as autism, cardiovascular disease, Alzheimer's disease, Parkinson disease, Amyotrophic lateral sclerosis, all of them bombed. All of them, basically, were terminated after phase 1, not only because they were found ineffective, but because the people in the active group started having serious adverse events, is what the industry calls it. And if to this day, if you go and if you look at the clinical trials, I think there's a summary of article which said that fish oil – "Have We Been Sent Fishing" – I think that was the article, basically is that we got conned again, we got tricked for decades now into buying this industrial waste byproduct of the fish industry on the hypothesis



that it's less inflammatory than omega-6. So, it should be better for us than the omega-6.

Well, the question shouldn't be less harmful, it should be like if it's not beneficial then it should not be consumed. And even though they were partially correct on the less inflammatory claim, they're actually wrong and they never talked about the much more carcinogenic nature of the omega-3s because that they're so easily peroxidized. And basically all of these aldehydes, malondialdehyde, being probably the most well-known one. A known human carcinogen listed on the NIH site, listed on the European Health Agency site. Nobody will argue that having high levels of malondialdehyde is a good thing for you. Well guess what? The easiest way and the most effective way of raising your MDA, malondialdehyde, is by consuming omega-3s.

**Dr. Joseph Mercola:**

Wow. So, what's your take on having a small amount through warm water fish and seafood?

**Georgi Dinkov:**

I think that's great because we're eating them in the whole foods. There are many different nutrients that are present there aside from the saturated fat.

**Dr. Joseph Mercola:**

Yeah, and retinol can be in there too.

**Georgi Dinkov:**

Exactly. Retinol can be there too, which protects from some of the toxic effects. There is also the saturated fats in the tropical fish are going to protect from many of the – actually they'll protect the omega-3s from peroxidizing. Let's assume for a second that omega-3 does have some beneficial effect, but if it does exist, without a doubt, it's only in the form where it's not peroxidized. So, the saturated fats in the tropical fish will keep it in that state for a little bit longer. It will still peroxidize, eventually. It's so unstable. But it will keep it in this sort of precursor state if we assume that it has any benefit. But also, the seafood has selenium, has zinc, has other trace minerals, magnesium, sulfur, all of these things actually work together to prevent any potential damage that the omega-3 has and because in the tropical fish, it'll be such a small amount, chances are, actually, it will probably be digested by the stomach. I mean it'll be broken down by the stomach acid and will not even absorb. You'll be able to actually metabolize it before it gets to the tissues.

**Dr. Joseph Mercola:**

That's an interesting concept. It makes perfect sense though. And there's probably some proof to the fact that you can use your nose to help you identify, if the fish doesn't smell good, it's probably not a good idea to eat it.

**Georgi Dinkov:**

Even grizzly bears refuse to eat rancid fish. And they're evolved to – that's all they eat, especially the Kodiak ones, that's the main source of protein when the fish is migrating. They refuse to eat the rancid fish. And when you're getting these fish supplements from the market, I have not had a single case where I would get a supplement like that when I used to take it back in my paleo

[diet] years, and when I opened the container, there was not a single case where I wasn't hit by this disgusting, rancid smell. This means already what you're already getting is peroxidized omega-3. So you're not actually getting, even the things that studies claimed were good for you. It's already like the combusted stuff that we know is bad for you. Even the commercial drug, I think it's called Lovaza, is the one that got approved for lowering your triglycerides.

**Dr. Joseph Mercola:**

Really high-dose omega-3 supplement.

**Georgi Dinkov:**

Yeah, the ethyl esters, even they smell really bad. I don't know how they even managed to market them. I think they hired a – I don't know what the name is, but the person who is an expert in modifying odors so people find them acceptable. So, even during the trials, they said the active group didn't want to pick the Lovaza, so they had to trick it by putting some kind of thing, vanilla extract, it was, to conceal the smell. So, that's really what's been sold to us.

**Dr. Joseph Mercola:**

All right. So, because throughout this interview you've been referring to this PUFA, and I just want people to understand this not just to omega-6 from your perspective, it's really most all the omega-3s, so you want as low of a PUFA diet as total. So, why don't we go into some of the macro recommendations now. So, what do you perceive the ideal dietary recommendation is? It typically is a percentage of total daily calories or do you have a specific gram? It seems like anything over 10 grams, no matter how much you weigh, is probably not a good idea. You really want to go under 10. But I guess – what's the range that you were to advocate for?

**Georgi Dinkov:**

For PUFA in general?

**Dr. Joseph Mercola:**

For PUFA in general, right.

**Georgi Dinkov:**

Yeah, I would say 10 grams. I mean, if you can get it, there's a study showing that if you get it under 2 [grams], then these people almost never develop cancer. But at that point you'll be becoming probably orthorexic. It's next to impossible to get it there.

**Dr. Joseph Mercola:**

It really is. Yeah. Yeah. I mean it seems like it's really, it is hard to go below 5 [grams]. But it's relatively easy to get below 10 [grams], for sure.

**Georgi Dinkov:**

Yeah. And if you're concerned about it, let's say you're going to an event somewhere, it's going to be PUFA in the processed food there. Just take some vitamin E before that. Just a hundred units is probably going to be sufficient unless you're-

**Dr. Joseph Mercola:**

With the food?

**Georgi Dinkov:**

Yes. With the food. Yeah.

**Dr. Joseph Mercola:**

Okay. Yeah. That's vitamin E. There's a trick for everything. All right, so getting back to the cancer question or prophylactic therapy to prevent cancer. I'm just going to summarize it and you give me your feedback on it. It seems like you definitely want a low-PUFA diet and you just went over the recommendations. Clearly under 10 [grams]. If you can get to 2 or 3 [grams], that's great. It's really hard to do without becoming orthorexic, but you can try. I list that as number one. How would you rate that within everything else we talked about?

**Georgi Dinkov:**

Oh, that's definitely the number one thing that I would strive for. The second thing that I would strive for is if you going to be eating carbs, make sure they're not-

**Dr. Joseph Mercola:**

High-fructose corn syrup.

**Georgi Dinkov:**

[[crosstalk 01:25:13](#)] starch. Yeah, the avoid the high-fructose corn syrup because it is mostly starch and preservable starch, of all things. And then` eat the simple sugars that from ripe fruit. Raw honey, if you can actually confirm that it is taken from a beehive instead of re-engineered in a lab that's just high-fructose corn syrup with some flavors and colors and whatnot. And then if you cannot get that, then, basically, the third fallback option will be the pure crystalline sugar organic version. If you can get it.

**Dr. Joseph Mercola:**

Well, fruit before that, right?

**Georgi Dinkov:**

Yeah. Fruit and honey. So, the first two.

**Dr. Joseph Mercola:**

Okay, sorry, what's the general range of macro composition of proteins, fats and carbs.

**Georgi Dinkov:**

Ideally, most of the studies that are seen, I think Dr. Peat agreed with that on one interview said, that ideal is not known, but most of the studies that looked at it said that about equal amounts in terms of percentage.

**Dr. Joseph Mercola:**

So, 33% each?

**Georgi Dinkov:**

33%, 33%, 33%. Yeah.

**Dr. Joseph Mercola:**

Wow.

**Georgi Dinkov:**

For a healthy person. Now if you have metabolic problems or some kind of inflammatory disease, you probably need to be cutting down on the fats because as we said, even with your best effort, the more fat you consume pro rata, the more PUFA you'll probably be intaking.

**Dr. Joseph Mercola:**

And do you think if you have excess fat intake, is that going to impair your ability to optimally digest protein?

**Georgi Dinkov:**

I think it does because the bile acids, because when you intake fat, if your gallbladder and liver are working fine, you're going to be releasing a lot of bile acids. The bile acids actually interfere with the absorption of protein.

**Dr. Joseph Mercola:**

Interesting. That's fascinating. That is absolutely fascinating. So, PUFAs as low as possible. Vitamin E, the doses we discussed, and actually both of our companies produce a really good vitamin E, so we understand what the requirements are. And then aspirin or willow bark extract, which may be even better.

**Georgi Dinkov:**

Niacinamide.

**Dr. Joseph Mercola:**

Niacinamide, and I like the dose of about 50 milligrams, three times a day. You like a little bit higher?

**Georgi Dinkov:**

No more than a hundred milligrams, two or three times a day. I think the total, if it'll be kept under 300 several animals, that is demonstrated very good metabolic effects from that dosage only if you go higher, a lot of the metabolics, good metabolic effects kind of like plateau or even decline. There are other benefits, but for metabolic purposes, for most people, 250 to 300 milligrams daily, no matter how it's taken is probably best.

**Dr. Joseph Mercola:**

Yeah. I was basing it on the ability to improve NAD+, the oxidized version. The study I saw was like 2 milligrams per kilogram in divided doses. You don't want to take it all at once. That's the other thing. You need to separate it apart because this is not a one-dose-per-day deal. You can't take 300 milligrams think it's going to work. And the reason is the niacinamide is negative feedback for the sirtuins, which are the longevity proteins. [crosstalk 01:28:01].

**Georgi Dinkov:**

And it saturates the NAMPT enzyme, which synthesizes NAD. So if you give too much niacinamide, it's not going to get processed to NAD. It will inhibit its own conversion. Because a lot of things are giving too much.

**Dr. Joseph Mercola:**

Yeah. Yeah. That's what it is. Right. NAMPT is like the primary way that your body makes – 95% of it's made from that enzyme. All right. So niacinamide, and you can buy literally, it's a powder. We're actually going to make a 50-milligram tablet really soon. It should be out within a few months.

**Georgi Dinkov:**

I'll buy it. I've never been able to find 50 milligrams.

**Dr. Joseph Mercola:**

Wait you just – I'm going to send you a five-year supply. Okay. No, just give me your address, I'll send some to you. But you can buy – I mean you don't have to buy it from us. You can just get niacinamide powder and you get a five-year supply for \$15. It's pretty cheap, so is this salicylic acid or aspirin, the good type of aspirin. So, we knocked out some of those. The vitamin E, a little more expensive of course, but not terribly when you compare it to drugs. And then-

**Georgi Dinkov:**

Caffeine.

**Dr. Joseph Mercola:**

Caffeine. Oh, you like caffeine? I've just – yeah. So, that would be an argument for taking aspirin with caffeine.

**Georgi Dinkov:**

And there is a drug on the market, I think it's called – they sell it in powder form. It's called BCs or something. It is very popular apparently in the American South. The initials are BC and is sold as a drug for headaches. But multiple studies have shown that taking caffeine with aspirin increases the blood concentrations of both and prolongs the effects of both when taken together. So, you can get by taking much lower dosages, if your doctor is concerned about, let's say if you're taking more than a hundred milligrams of aspirin, then you can take 50 milligrams aspirin and 50 milligrams caffeine. Several studies show that raised the metabolic rate by about 7% and kept it elevated for up to 12 hours.

**Dr. Joseph Mercola:**

Wow.

**Georgi Dinkov:**

And those are tiny doses.

**Dr. Joseph Mercola:**

Yeah. That's fantastic. Fantastic. Really good pearl. Thank you. So, the aspirin, the caffeine, maybe together. Retinol, maybe 5,000 units. Unless you're really eating a lot of organ meat, then you don't need it of course. And I suspect you're a fan of copper too, right?

**Georgi Dinkov:**

Yes. It's the crucial cofactor for the finals, really the rate-limiting factor, cytochrome c oxidase, which is complex IV. And it's been shown that with aging, the amount of copper in that enzyme basically decreases while the iron increases. And the less copper you have in that enzyme, basically the lower your metabolic rate would be. But copper can be dangerous when taken as a supplement, depending on what salt it is and how much you take. You can probably get a decent amount of copper from ruminant liver or from seafood such as oysters and shrimp.

**Dr. Joseph Mercola:**

Yeah.

**Georgi Dinkov:**

And in general, basically many of the marine animals actually have a lot more copper in their tissues than the land ones.

**Dr. Joseph Mercola:**

So which form of copper supplement do you like? I've been recommending the bisglycinate.

**Georgi Dinkov:**

The bisglycinate is very good, very high bioavailability. The cheapest one, I think, is copper chloride, which you can get it.

**Dr. Joseph Mercola:**

Yeah.

**Georgi Dinkov:**

But I don't think our body can handle chloride well outside of the sodium chloride, which is probably the only chlorine [inaudible 01:31:31] you can do. And there's also a copper sulfate, which you can also get, a copper acetate.

**Dr. Joseph Mercola:**

Yeah, copper sulfate is what's used agriculturally. For sure.

**Georgi Dinkov:**

Yeah. But all of these-

**Dr. Joseph Mercola:**

That's actually a pretty good way to get it if you want to have it from foods. And that's the way I got most of mine was I have an acerola cherry tree, which gives me some good vitamin C, about 80 milligrams per cherry and I spray it with copper sulfate.

**Georgi Dinkov:**

So, you get also the copper as well?

**Dr. Joseph Mercola:**

Yeah.

**Georgi Dinkov:**

Or you can drop a penny in a glass of vinegar and basically after about a week it'll be bright blue and you can take a few drops of that every day.

**Dr. Joseph Mercola:**

Well, ideally that's a pre-1964 penny, because after that I don't think there's much copper in the penny.

**Georgi Dinkov:**

Oh, yeah, that's right. They started putting nickel, I think, which is bad.

**Dr. Joseph Mercola:**

Yeah, you don't want to get nickel-toxic, that's for damned sure. But yeah, pre '64, I probably have about 50 to a hundred pounds of pre '64 pennies my mom saved that I wound up with. Any other recommendations? Now all of these we're talking about prevent cancer. Why? Because they make the cell metabolically healthier, and as you referenced earlier, it's the cells that become deranged and their metabolisms is shifted, so they can't work normally. And then they become deformed and become cancerous. So, we want to transform them back to normal with the nutrients they need.

**Georgi Dinkov:**

And it looks like every single one of these, actually, is known anti-inflammatory compound, which brings us back to PUFA and the studies that showed if you really restrict PUFA, then you really don't develop cancer, which means that cancer is an inflammatory-triggered disease. And I think most doctors at this point will probably agree with that statement. Even though they say, "We don't know the exact pathway." They're not going to be willing or able to name PUFA as the villain. They'll say, "Yes, cancer eventually can develop as a result of inflammation." So, by either drastically restricting PUFA or in a more normal life, eating some PUFA, but taking these precautions, which all of them have an anti-PUFA, anti-inflammatory effect, I think that's the more reasonable way of preventing cancer.

**Dr. Joseph Mercola:**

Okay. Perfect. So, any other recommendations that you have overall? I mean, generically, as a protocol that almost everyone would benefit from.

**Georgi Dinkov:**

Looks like just lifestyle in general, avoiding routine and avoiding toxic situations. I mean, I don't think that avoiding toxicity is any news here, but the routine turns out to be a very powerful metabolic inhibitor.

**Dr. Joseph Mercola:**

What is that? Now, what is that?

**Georgi Dinkov:**

Just doing routine work.

**Dr. Joseph Mercola:**

Oh, routine.

**Georgi Dinkov:**

Just mundane – yeah, routine work that you don't like, you just go through the motions and you just say, "Okay. I just have to do it." So, if you find yourself-

**Dr. Joseph Mercola:**

Oh, okay. So, just be passionate about what you do.

**Georgi Dinkov:**

If you're kind of spacing out and you're kind of just going through the motions waiting for the day to end, it's probably time to look for either another job or another activity because it's very metabolically harmful by increasing the amount of serotonin. Serotonin is the master of routine and serotonin is a master metabolic inhibitor. [crosstalk 01:34:32].

**Dr. Joseph Mercola:**

That's a topic for another podcast because I know that we'd have to go really deep and I think you've had six or seven posts last night on your blog. And a bunch of them were on serotonin. But serotonin, you're right, that's a pernicious thing. And Ray was actually pretty big in – well, I think you got his Ph.D. in estrogen, didn't he?

**Georgi Dinkov:**

Yes. Estrogen and progesterone, because he said all the other disciplines when he approached the-



**Dr. Joseph Mercola:**

That's another topic we've got to talk about is progesterone, pregnenolone. We talked a bit in the past, but I want to be back for those and the serotonin. Because they're doing the exact opposite in the pharma industry, is they're putting these serotonin reuptake inhibitor drugs, the antidepressants primarily, and they're making things worse. And at the same time, they're working on drugs that actually are serotonin agonist.

**Georgi Dinkov:**

Antagonist to block the serotonin. So they sell you the poison and the remedy. Did you see the recent interview with the Pfizer director? Sounds like Pfizer has been doing this with many different interventions.

**Dr. Joseph Mercola:**

Yeah, yeah, they, they've climbed really rapidly. They weren't the biggest in the world, but they certainly are now. And they have pretty much all the damaging characteristics of a company that's not doing what it's supposed to.

**Georgi Dinkov:**

A nest of snakes.

**Dr. Joseph Mercola:**

Yeah, nest of snakes, for sure. All right. Well, so obviously you have your blog, which is I think Haidut, H-A-I-D-U-T, dot-

**Georgi Dinkov:**

Dot me, M-E.

**Dr. Joseph Mercola:**

Dot, me. Okay. And then-

**Georgi Dinkov:**

And that feeds into Twitter, which is Twitter/Haidut it's the same thing.

**Dr. Joseph Mercola:**

Twitter. And then what's the best way for people who wanted to dive into this to learn more? Fortunately, I mean, I'm really fascinated and one of my projects is to really digest much of what Ray has written because there's so much wisdom there. But it's a lot. I mean, I've compiled a lot of his articles and I think I must have 5 gigabytes of information, and I'm hoping – we got this new resource, and I'm sure you've heard about this ChatGPT, which is a large language learning model, and it's just going to get better and better. It is artificial intelligence, but it really is driven by the data that it's fed, and it's not been fed Ray Peat's data, so wouldn't it be wonderful to feed them the gigabytes of information that Ray's written over the years in the Ray Peat forum and digest that. And then you can ask it questions to get an answer.

**Georgi Dinkov:**

Within a few minutes of it being released. We already were discussing this in the forum, how can we convert Ray into digital form by training this model on his articles? And I think there's a project in the works, so we'll see. Yeah, it's a great technology, just very dangerous and be careful how you use it.

**Dr. Joseph Mercola:**

Yeah. Right. Yeah. Right now, the modeling is based on flawed data because it's controlled by the people who are controlling the narrative, but it can be used just like a weapon. It can be good or it can be bad.

**Georgi Dinkov:**

That's right. It's neutral. Well, it's up to the mind who's using it.

**Dr. Joseph Mercola:**

That's right. To me, that's the most exciting aspect is primarily for Ray Peat's work, but then generally natural medicine, because essentially these models are going to be alternative to search engines. Because with Google, who owns 95% of the search engines in the world, maybe more, maybe as much as 97%, literally, has obliterated – they essentially burned the library of Alexandria, which is the internet. Yes. The articles, I mean, the websites are still up, and you can get them if you know the URLs, but people find them the URLs through the search engines. And that has essentially been – most, all the good information in natural health has been censored. So, the workaround for this are these chat bots that have access to the same information, the uncensored web, and you can access it through them. So, that's a ray of hope. That's a relatively new ray, and I'm excited about that.

**Georgi Dinkov:**

I think in the next couple of years we'll see people releasing tools that will allow you to train your own bot.

**Dr. Joseph Mercola:**

Yeah. Yeah. I'm confident that's coming. There's no question about it. Yeah. All right. So, we'll be back again, and I really thank you for your time and your insights and your wisdom and providing such valuable information.

**Georgi Dinkov:**

Appreciate it. Thanks. It's an honor to be here. Thanks for inviting me again.

**Dr. Joseph Mercola:**

Okay.