THE MODEL HEALTH SHOW

EPISODE 870

Is Vegetable Oil Actually Good For You?

With Guest Dr. Cate Shanahan

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SHAWN STEVENSON: There's an interesting cycle that happens with food and nutrition when it comes to ultra processed foods. When they hit the scene, best thing ever. We got this brand new TV dinner. It's gonna make dinner so much easier. Park your behind in front of the television. You don't gotta cook for these little monsters. Pop this in the microwave. We've got you. Portable breakfast on the go. You no longer have to slave over a hot stove, making fresh food for your family. Pop these little toaster pastries right into your toaster, and you'll get a piping hot, fully functional, nutritious meal to start your day. It's got enrichment.

It's enriched with all the vitamins and minerals the body needs. Kick that butter and animal fats to the curve. We've got Crisco for you. Belongs in every kitchen. Matter of fact. Don't just fry your chicken in Crisco once. You can do it again, and again, and again. No harm, no foul. There's no cholesterol in this. You're gonna be just fine. We've got your back. Ah, and that nutritious bowl of honey nut Cheerios is part of a balanced breakfast. It's heart healthy. It's right here on the box. These are all sentiments that's been delivered to us and even affirmed by government agencies straight from the ultra processed food industry.

Now we know today, it's taken decades, that many of these claims are not just false, they're outright dangerous. And we're still dealing with the wake of it. You know, we're still swimming behind the boat and just dealing with the ramifications. As these food companies are driving on and making pivots and trying to be more creative in their marketing to keep these things on store shelves as long as they can until their hand is forced to change. And so one of the things that's gotten a resurgence recently, that the food industry and oftentimes well meaning experts are now popping their head out of the water again and saying that Ultra processed, "vegetable oils and seed oils" are not only not bad for you, there's no science to affirm that, they're actually beneficial for you.

Look at what the science says. And today, because of this, and because of the newly selected choice for heading up the USDA. One of the highest offices in health here in the United States is someone who headed up advocacy for the vegetable oil slash seed oil industry amidst other popular changes in the health space and really empowering health conversations being had in the political sphere. But no one has all this stuff, right? And so we want to keep in mind

that we need to be empowered and educated in our own choices. And because of all of these changes and people popping their heads up again and saying, Hey, ultra processed seed oils, they're good for you. I hit the button. I put the seed oil signal in the sky that sent out to the world leading expert on this subject matter. All right, there's the bat signal, then there's a seed oil signal. When that's hit, she's coming to save the day. I've got the one and only Dr. Cate Shanahan for you right now.

We're going to cover some of the peer reviewed studies affirming how dangerous vegetable oils actually are. We're going to cover what actually makes vegetable oil the very definition of an ultra processed food. We're going to talk about some of the studies affirming that vegetable oil is good for you as well. We're going to pass that baton over to Dr. Cate and have her dissect what the data is showing. That and so much more with our very special guest. Cate Shanahan, MD, is a family physician, scientist, and New York Times best selling author. For over two decades, Dr. Cate has been standing up to corrupt health authorities and leading the charge to reverse diseases naturally. Together with NBA legend Gary Vitti, she created the Los Angeles Lakers Pro Nutrition Program, which has been emulated by elite championship teams around the world. Her latest book, *Dark Calories*, focuses on the hidden harms of seed oils, empowering a new generation of health practitioners to truly heal their patients. Let's dive in this conversation with the amazing Dr. Cate Shanahan.

The one and only Dr. Cate Shanahan, one of my favorite people, truly. I'm so happy to see you. Thank you for joining us.

CATE SHANAHAN: Well, thank you for inviting me on. And I'm really excited to dive into this meaty subject.

SHAWN STEVENSON: What I did was, I have the bat phone, so I hit the button, and I put up the symbol in the sky to get you. And it's because something crazy is happening in Gotham, and we'll just use the world as metaphor Gotham, alright?

CATE SHANAHAN: Perfect right now.

SHAWN STEVENSON: Right. Unfortunately, right now, a lot of our colleagues, even some of our friends, are still saying there's no evidence that seed oils are bad for you. In fact, they're good for you. And here's the thing, no evidence. We have a wonderful meta analysis published in the journal BMJ Open Heart that found that these vegetable oils can be a major culprit behind organ failure, cardiac arrest, and even sudden death. On top of that, and I've talked about this several times, and this is something we're going to circle back to and dig in deep on this. But there's research published in the journal Inhalation Toxicology finding that even smelling the fumes of vegetable oil while cooking can damage your DNA.

The biggest offender, as noted in the journal Environmental Science and Pollution Research International, was the inflammatory fan favorite canola oil, aka rapeseed oil. Coming in with the highest level of polycyclic oxygen. aromatic hydrocarbons emitted into the room during cooking. These compounds are implicated in everything from cancer to autoimmune diseases, but there's no evidence. So part of this deflection, and this is why I'm so grateful to have you here, is that our colleagues are using this deflection point of focusing on the omega 6 content of these oils, saying that that's not bad for you, but you say that they're focusing on the wrong things. Let's talk about it.

CATE SHANAHAN: Yes. Thank you. Because that, that, what they should be focusing on is the fact that these oils are promoting toxin formation in the factory. They promote more toxin formation as they sit on the shelves. When you cook with them, when you open the bottle, more toxin formation. And when you cook with them, more toxin formation. Why is that happening? It has to do with their chemistry. They're fragile. They, when they are heated, they react with oxygen, they oxidize. Oxidation is a burning reaction, right? Oxygen burns wood. And you are unfortunately a little bit too close to knowing what that experience is like right now they're in LA, but oxidation is extremely dangerous when it gets out of control.

And when we've gone a lifetime of eating seed oils, we have so much of these toxins in our body that their ability to control all the oxidation It gets lost. And so we lose the ability to control oxidation in our body and we're subjected to all diseases because all diseases are related to excessive oxidation that word is called oxidative stress So it's kind of like, you know, oxidation is a burning reaction. Like when you slice an apple and you see it change from white

to brown, that's also oxidation. That's the, when you slice the apple, you break cells and you start the membranes in those cells. They start to oxidize and slowly turn brown. So we can see oxidation reactions all around us. We just can't see them in our body because we can't see inside our body.

We can't see what's going on at that cellular, you know, level, but you can test the toxicity of a food, you can text the toxicity of your own bloodstream after you've eaten the food. And when you see the same toxins in that were in the food showing up in your bloodstream, that's not good. And that is evidence that we are eating toxins. Now if anybody tells you that's just theoretical, okay, I would say, okay, sure. Toxicity is theoretical, right? But you know what? The evidence trail doesn't end there. I mean, that's a ridiculous thing to say, to consume toxins and have them show up in your blood and your tissues. Like they found toxins in sperm, like, you know, they find toxins in intestines.

When people are eating a lot of junk food, they find these same toxins. They get into your brain. They pass right through that barrier that's supposed to protect your brain and the toxins from these seed oils get into your brain. They're going to cause oxidative stress in all these tissues. And we also, so what I, when I say the evidence doesn't end there. We have evidence that people who consume these oils, people, humans, who have been exposed to these oils have myriad different types of diseases. So for example, you already mentioned the fumes. Well, there in China about 2006 a group of scientists published a paper showing that people cooking in restaurants there or street stands that were using the soy oil, the vegetable oils, these highly polyunsaturated, hateful eight seed oils, and were exposed to them all day, were developing cancer at alarming rates.

Like we're talking about young people in their 20s and 30s who did not smoke, developing lung cancer because they were inhaling the volatile toxins. So, these toxins are not just in our food, they're in the air we breathe. And there are so many types of them, that if you're not testing for the right one, and you're not, and you're checking somebody's blood, and you're saying, well, these toxins, you're looking to see, do these toxins get into the body? You can test for the wrong toxin and not see that particular toxin get into the body, but many types of other ones will. So you hear all kinds of claims about there's no evidence along every step of

the way. It's because it's very complicated and if you don't know how to look for it and have your heart in the right place, you're just going to you know, go with the standard party line, do whatever is easier.

You're going to look for, you're not going to understand the errors of your science. And sure, some science appears to show that these oils are at least not harmful. I don't see any credible science that says that these oils are helpful. But some science, sure, appears to show that they're not harmful, but that science is flawed. It's flawed because the people doing it don't understand the subject well enough to design the study properly. And it may be that there's also some nefariousness. You know, some people wanting a certain outcome and there's huge bias or cognitive bias or financial bias. For anyone who says there's no evidence, that is an outright lie.

SHAWN STEVENSON: We're going to cover some of these studies that point to you know, again, these oils are actually really good for you. First and foremost, I want to go through and talk about a couple of these key points. You just mentioned that process, like wood in and of itself. And you talk about this in your book as well, Dark Calories. Required reading at this day and age, by the way, Dark Calories. And how wood in and of itself, a tree isn't toxic. That wood isn't toxic, but when it's burned, those fumes can make you very sick, right? And the process by which these vegetable oils, seed oils, are created, this is, to, to just speak on, on the, on a parallel of them being burnt is an understatement.

Alright, we've got that, we've got the deodorizers, we've got the bleaching agents, we've got all these synthetic chemical interactions that are creating compounds that never existed. And then we are consuming those things, right? And, for us to throw up a red flag and to say, okay, listen, I know we don't have this huge body of, you know, double blind crossover studies and all this stuff. It's very difficult to create these kind of studies with something toxic and feed them to humans, by the way, so we've got to make that sidebar. But for me, this is one of those stories where there's enough very, very strong, credible evidence on this and usually it's decades later when it's all considered out.

We, of course, that's, we always knew that, that's how it is, and they were dumb back then, right. And so I want to talk about this devolution when we came up with Crisco, for example, and we had these solidified versions of vegetable oils. And then suddenly, oh, it's bad for you, right. Suddenly after decades of use, a matter of fact, marketing support by scientists. Support by institutions, major institutions of health. And then we get to a place where, okay, if we, we're gonna jump, we're gonna, we're gonna do, I'm from St. Louis, we're gonna do an arch, alright.

We're gonna jump over here to where we are, because what we're talking about, oh, the fumes, it's just the fumes, just don't, just don't burn it or whatever, don't cook it too hot, right, then that, that's why it's bad. But in the middle here, we've got this liquid form where it's like this is still being promoted as health affirming, or at least not bad for you, right? And so let's talk about this devolution with solidified versions of these fats. Why they were suddenly determined to be bad for you, and then we moved away from them socially. But then, this huge influx of the liquid versions, which is what we're dealing with now, which is a huge part, huge percentage of the average American's diet today.

CATE SHANAHAN: Yeah, so the idea that we're talking about is that way back when the oils first became a source of food, this was at the turn of the 18th 1900s, like 1900, right around then, and the first oil was cottonseed, and that oil was inedible as the oil, because it contained a natural plant toxin called gossypol that would kill, you know, cows that would cause internal bleeding. It could not feed it to humans. Of course, it would kill any, you know, a mammal. So what they did was they didn't originally even want to try to feed it to anything. They originally were just trying to make it a substitute for soap or a sub, a sub, a substitute for tallow that made soap, a substitute for the fats that were making candles.

Right? So they were just originally trying to make it, you know, burn or be a detergent. They weren't looking to feed it to anyone. So they were tinkering around with the chemistry quite a bit. And one of their goals was to make it more solid, right? Cause it's liquid and we like bar soaps and candles have to be solid. It's easier to transport them than liquid. So they did a process called hydrogenation and that process was extremely intensive, and it solidified the

oil, it added a hydrogen group to one of the double bonds and made it, instead of being liquid, it made the individual molecules more straight, and that turns liquid into solid.

So, it's pretty cool, and they're very proud of themselves. And they were, they were fantastic candles and soaps, but then what happened was electricity. And so there was a less need for candles. And so they wanted to diversify what they did where it's this hydrogenated cottonseed oil. And it turned out they discovered that the process of hydrogenation and all the other refining that was done eliminated that toxin. So now suddenly they could start feeding it to animals or people. And they played around with it and you know, as they were playing around with it, they noticed that at one point when you tweak the recipe, it comes this like it's not rock hard like wax, but it's semi solid and it looked like it could be work for butter or lard.

And so they chose to do it as a substitute for lard, which is white, because it was white. If you want to make it look like butter, you also have to colorize it, and they just didn't want to bother that. Other companies did. So they made fake butter substitutes out of cottonseed oil too. So that's how it entered the food supply, and it was cheaper than lard, and they advertised it cleverly, like, it's It's clean or AIDS digestion. They were able to make any kind of statements back then. There was no law whatsoever and there was no food safety testing. So that's really the problem is that it was never tested on humans before it was released into the human food supply. And so it took a long time for folks to even think about testing it.

Right. And, you know, for the, it took about, two generations, I would say, of scientists. Finally, in the 70s and 80s, the scientists were like, look, I really think this is bad. And they started testifying before Congress and making waves in medicine. And then it took another 30 years after that for the regulatory change to occur, that would actually eliminate it from the food supply because there was so much money being made. You know, that was in so many foods. It was in, you know, shortening was not just in your tub of shortening in your cupboard. It was in the fryers. It was in all of the, like, baked goods, it was in crackers, you know, it was in Oreo cookies, it was in Twinkies, it was in so many things. And so to alter, to remove it, they would have had to alter the recipe and that just took a long time.

But now it's gone. And is anything better? Is our health better? Ha ha. No. And that is something that no public health official has come out and said, wait a second, we removed the trans fat, we're still dying of heart attacks. In fact, for the first time in something like 70 years, the rates of heart attacks are on the rise again. Now that we've removed this heart attack causing trans fat. Huh? What's going on? Well, the thing is we substituted it with liquid vegetable oil, which is as it turns out worse. So like that is a that is evidence like what we just discussed. It's observational evidence of a of what happens to a population on a population level. When you eliminate trans fat, but you simultaneously double the amount of the hateful eight oils.

We're eating twice as much of these oils than what we were before the trans fat ban. So before the trans fat ban in 2020, the average person ate about 30 pounds per year of the sum total of the hateful eight, which maybe you should want to list that out in the show notes or something. People need to know those. And now in 2020, when we're eating almost zero trans fats, we are eating 60 plus, probably, pounds of these hateful eight seed oils. So we've doubled that. And our, our health was supposed to improve by eliminating trans fats. But what has improved? We're having more heart attacks, more cancer, more diabetes, more mental illnesses, more infertility, more depression, more major psychiatric disorders.

It's quite something to ignore all of that and claim that, that is not evidence. Just because your favorite type of evidence happens to be a meta analysis of randomized human interventional trials. That is one type of evidence, and for someone who is a scientist to say that that's the only type of evidence that matters? That person is revealing either a bias or a vast knowledge deficit.

SHAWN STEVENSON: Got a quick break coming up. We'll be right back.

If you want to dramatically reduce the frequency of you getting sick and accelerate your recovery, if you do, I want to make sure you and your family are utilizing what was highlighted in a meta analysis published in the Annals of Clinical Biochemistry. The study was titled Electrolyte Imbalances in Patients with Severe Coronavirus Disease and it analyzed five studies with nearly 1500 patients with COVID 19. And found that both sodium and potassium

were significantly lower in patients with severe COVID 19 and improving people's electrolyte balance dramatically improved their recovery.

Now this is known in the hospital setting, but we don't need to be severely ill to get the immune system support of electrolytes. In fact, a peer reviewed study published in the European heart journal titled Sodium intake, life expectancy and all cause mortality revealed quote observation of sodium intake correlating positively with life expectancy and inversely with all cause mortality.

Shocking to the researchers and the scientific community at large, higher sodium intake than conventional beliefs about sodium is associated with a longer average life expectancy and reduced all caused mortality. This was a huge meta analysis, by the way. This is the data from 181 countries, but the question should be why? Well, sodium is required to help conduct impulses of your nervous system. It's required for muscle contractions. It helps all of our cells, tissues, and even your brain maintain proper fluid balance. It's deeply involved in every aspect of our immune system function, the generation and utilization of energy, and the list goes on and on.

But the most important factor is getting the right ratio of these key electrolytes. Sodium, potassium and magnesium, and that's what you get in the number one electrolyte supplement in the world. It has no sugar, no artificial dyes, and results that you notice. And right now, not only can you try their popular drink mix that's now being used by dozens of professional sports teams, they also have an amazing new electrolyte sparkling water. And with every purchase, you'll get a free sample pack to try out their classic drink mix flavors. I'm talking about the amazing electrolytes from LMNT, and as always, element has a no questions asked, money back guarantee. So you have nothing to lose and only better hydration, performance, immune system function, and overall performance to game.

Go to drink LMNT.com/model to take advantage of this right now. That's. Drink L M N T.com/model to get your free sample pack with any purchase, including their new electrolyte sparkling water. Again, go to drink LMNT.com/model. And now back to the show.

SHAWN STEVENSON: What I wanted to do was to really illuminate. A very obvious, but easily looked past fact, you know, again, many of our colleagues who are still promoting vegetable oils, seed oils as health affirming and definitely not harmful to health. They are usually well meaning and what you're saying, number one, the data being constructed in a certain way is a part of the issue here. But these same individuals, again, many friends, colleagues are very, very adamant about teaching the public to reduce or avoid their consumption of ultra processed foods.

CATE SHANAHAN: Yeah.

SHAWN STEVENSON: Right? They're very passionate about that because we've got a massive body of evidence on this with, again, we didn't have that previously with that being said, can you please share enlighten us on how these seed oils, how vegetable oil, canola oil. How are they the very definition of an ultra processed food?

CATE SHANAHAN: Because they are the very definition of an ultra processed food. Because there is nothing in the food supply that is more altered by factory refining than vegetable oil. I can't think of anything other than that. Except for the other frankenfats that we're now dealing with, right? Like the inter esterified fats and some of the other things that they're coming up with to really, because of the missing solidifiers, being the trans fats that are now out of the system. They have to find something else that has the same like cooking properties, the same solidity. So they're creating all these other frankenfats, but they're consumed still in small amounts.

So the most important thing to pay attention to are the main ingredients in what we're eating. And people haven't, your friends, my friends who are talking about how unhealthy ultra processed food is. Have you ever asked him, how do you define ultra processed food personally? Like, what is your criteria for recognizing it? So, because if you can't say what it is, how do you know when you're even avoiding it? Right? And I went through this. I went to actually a medical meeting recently and I asked a bunch of doctors. I just did like a man on the style interview, man on the street style interview. Like, what do you think is unhealthy about processed food and none of them agreed with each other.

They all said all different things. They said, oh, well It's been in a factory. That's one. Okay, olive oil's been in a factory. That's healthy And I think they make butter in factories, and I'm pretty sure that, you know, vegetable soup, which a lot of people would say is healthy, that's been in a factory, right? So, maybe it's, you know, maybe that's not enough. Maybe there's some details of what happens in the factory that really matter. And that's where my research focus is, is what's going on in the factory. And I can tell you that the, so the other things that the doctors came up with was too much salt. That's ridiculous.

Salt is a nutrient too much saturated fat. That's one of those ideas that was never supported by evidence still isn't. And that is what these evidence based people should be focusing on. Cause that's what, you know, we've been told for so many years that we need to avoid saturated fat yet. The evidence for that is extremely weak at best. And they say things like too many ingredients, preservatives. All of those are valid points that deserve scrutiny. And what I'm saying is a lot of them have been scrutinized, saturated fat, that's been proved wrong. Salt. No, it's not the salt in the junk food, it's the vegetable oil. When you look at a sack of potato chips, it doesn't have too many ingredients.

It's got three ingredients. Potatoes, oil, salt. It doesn't have preservatives. So why is that considered ultra processed or why is that considered junk food? Because it's got vegetable oil, like, because in, in our intuitive sense of this thing that sits on a shelf in a sack without changing for a year, that can't be as nutritious as like a perfectly cooked, juicy steak. Just can't be, or a fresh salad if you're on the plant side of things, right? We just know that intuitively. And so that's why for many years we've used this term junk food, right? What is junk food? Well, we never demanded a precise definition of junk food either. It's kind of like, well, I know it when I see it.

Candy and, you know, soda and lollipops and the sacks of snacks. Pretzels, right? Ultraprocess, this new term that people are saying is so important. That's the same thing as junk food. We have not made it any more scientifically clear what is ultraprocessed food than we ever did with junk food. And what I do in Dark Calories is I say, look, the problem with our food supply is very simple. We're getting 30 percent of our calories from real food. That's it. And the other 70 percent comes from three very refined ingredients that have almost no nutrition after the

refining. They're essentially just refined macros, right? Macros being fat, protein, and carbs. So vegetable oil is the refined fat and the refined carbs are the flours.

And the sugars, those two together is almost 70, 70 percent of the average person's total daily calories. Just those two things. And then the third thing is not very prevalent right now in the food supply. It's the refined protein powders like soy protein isolate and that sort of thing that are about 3%. Those are the problem because when you take of food like say you take milk and you remove everything, but the whey protein, you don't have the vitamins anymore. You don't have the minerals anymore. You don't have the phospholipids. You don't have the cholesterol. It's a nutrient, believe it or not. You don't have the lecithin.

You don't have the choline. You don't have the other things that are in there. So many other things, important things. You just have amino acids. Human beings cannot live off of a combination of amino acids. carbohydrate backbone molecules and triglyceride fats. We can't do that. So those three things right off the bat, no nutrition, empty calories. But the reason that seed oils are the worst of the worst, the defining feature of these ultra processed foods, we need to avoid seed oils because they are also full of toxins as we've been talking about, right? Sugar doesn't have toxins. It's not contaminated with aldehydes or weird polycyclic aromatic hydrocarbons.

It's just glucose molecules. But a bottle of canola oil or soy oil, when you purchase it off the shelf, already has dozens of weird chemicals in it already. I said already, because just wait, there's going to be many more because of the factory refining, how it removes the stabilizing factors in these oils are chemically unstable. So it's truly, it's a chemistry set that you buy when you buy canola oil, and it's not a chemistry set. That will sustain life. It's a chemistry set that will destroy life.

SHAWN STEVENSON: Can you take us through really briefly, and we talked about this on our last interview, our last conversation, which we'll put in the show notes for everybody. But can you take us through a brief description of how these seed oils are, become ultra processed? Take us through that because you are very, again, adamant about saying it's not, it's not the seed. This is not the problem. This is not what's "unhealthy". It's what's done to it. So can you

take us through what's done to it? How is, for example, canola oil made? Just a brief summation of it.

CATE SHANAHAN: Sure. Yeah. So farmers do a lot of work to grow canola seeds, right? They fertilize the soil, whether it's organically or not. They're always checking temperature. They do so much work to create these little seeds. They pluck off the canola seeds tons at a time, and those canola seeds have vitamins and fiber and protein and essential fatty acids. And all kinds of good stuff in there. So they enter the factory as a whole food. The refining factory. This is a different factory than where we make olive oil. Very different. They enter the factory as something that could nourish maybe not humans, but at least mice and rats. You know, animals that are designed to eat little tiny seeds.

And by the time it exits the factory, things, important things have been stripped off. So the first step is to, to heat it and loosen the oil from the seed and pressurize it. And when you create that first pressed oil, they call it crude oil. It is rank because it's just you've overheated the seed is also imagining imagine like burning a whole bunch of seeds in a pot, you know, cooking them or throwing it, you know, throwing like sunflower seeds in the oven at 450 degrees, and then squash it until they're kind of like.

Nearly burnt and then squashing it all into a mush and adding pressure to it. That's not going to taste good. It's going to taste like burnt, yucky things. And that's what the crude oil is. That's what crude canola oil is. That's what crude soy oil is, crude sunflower. It's burnt, yucky things. It's a mush. There's oil in there, but they have to, now it's separated out. And they have to do many more processes to mechanically separate the oil from the rest of the mush. And doing that involves steps like you've got to de gum, de wax, deodorize, and you know, bleach. There's just so many things that have to be done to remove all of the weird stuff that develops when you over, when you basically burn seeds and pressurize them.

It's not an, it's not, they're not making food there. They're trying to extract the oil the same way that you would in motor oil refining plant. They're not trying to make food. They just want to make different things come out of that crude oil. That's very different than the way they make olive oil. They don't do that de waxing. They don't do the high heat. They don't do,

there's also solvents that are involved. in the oils when they are not organic, like hexane, right? So, but you can still call it organic, even though there's all this garbage in there when you haven't used hexane. And so, that's where like we've got we get these health experts saying well, there's no hexane in the organic stuff and even in the non organic stuff there's probably not a lot of hexane. So that's why I don't focus on hexane because there's probably not a lot of it even in the organic stuff. But what food do we, you know, run through hexane before we consider it food.

SHAWN STEVENSON: Haha, right.

CATE SHANAHAN: Did we do that with applesauce? No. Do we do that with olive oil? No. So why is it okay when we do that with these hateful eight seed oils? That's how I've identified them by this kind of processing. So that's why I say peanut oil is okay, because what you call virgin peanut oil, which is unrefined peanut oil. akin to virgin olive oil, is high quality. It's, it's, it hasn't been run through hexane. It hasn't gone through deodorizing or anything. All of those steps remove nutrients. And that's really important. So some of the nutrients that get removed are brain building nutrients. When we have this supposedly heart healthy canola that has this supposed benefit to our brain too, because of the omega three in there.

Well, what's missing are our brain building nutrients because the refining had to remove them. And the D the degumming step removes the cell membranes, the phospholipids, that we need, we need that to digest the stuff easier. We need that for it to circulate through our bloodstream easier. We need phospholipids. What's in phospholipids? Choline, lecithins. Many, many pregnant women are deficient. I think something like 60 percent of pregnant women are deficient in choline. Choline is one of the most important nutrients for building a brain, right? So there's so much bad that happens because we, we've refined these oils.

It is the creating of the toxins, which You know, we talked about that at the beginning of this, I've talked about that on many other podcasts, but I haven't so much focused on all the other nutrients that are also missing because we have to remove that stuff because it's been mangled by the heating. And no longer nutritious, it's no longer a nutrient. It's been rendered toxic too and now needs to leave the exit stage left. It's not in the bottle. Olive oil has lecithin,

you know, virgin olive oil. Any unrefined oil will have these brain building nutrients, but all of the refined oils do not, and all of the hateful eight oils are refined.

So they're devoid. of so much that we need to be healthy at that cellular level. And for someone to come along and say that they are healthy when they are devoid of nutrients is beyond irresponsible. And I don't care if they think that they're well meaning. I think they should. If they haven't. You know, if they haven't read my book, I can't really blame them. If they haven't heard me on podcasts, I can't really blame them. Because I don't hear anybody else talking about it this way, right? The other people, like we just mentioned, are focusing on other things, which I don't think are as important, like linoleic acid per se, and, you know, they're not talking about the oxidation, they're not talking about the consequences of the processing.

Those are the details that make all the difference to understanding what we're eating. So, for those people who refuse to listen to my podcast or refuse to read my books, I say they are not being good scientists and they are not acting ethically. Because at this point, when we have people in the White House trying to help change the food supply. This is not, no longer a niche conversation, Shawn. When you and I first met, nobody knew what seed oils were. I had to like explain all that, right? Nobody was talking about it. And a lot of people maybe didn't even care. They're just like, Oh, it's just one more thing that you hear about. But now it's on the radar of the president of the United States of America, the most powerful person, whether you like him or not, he's the most powerful person and it's time to start paying attention out there, dieticians, nutritionists, and physicians.

It's time to start paying attention to me. Because I am the mother of the no seed oil movement. I've been nurturing this baby since 2002. And my books are my little babies. And if you want to know why those oils are toxic, if you want to know why, what's the real science, you've got to read those, my books. I mean, Would you agree with that? I'm sort of forcing, sort of a pointed question, but.

SHAWN STEVENSON: Absolutely.

CATE SHANAHAN: I think you'd agree.

SHAWN STEVENSON: You've done, you've, you've done the research as you, as you mentioned. This is over two decades of study, whereas again, folks are just kind of very dismissive, looking at superficial data on this stuff and, you know. And also I love that you brought forth this really important revelation, which is like, what is the new nutritive value of these ultra processed refined seed oils, like this, there's, there's nothing here. You compare that with the extra virgin olive oil, it's rich in all these different antioxidants, and all these really health affirmative compounds exist within there. But if you look at something like canola oil, these things don't exist.

Not only are we not looking at antioxidants, we're looking at oxidation in a bottle, as you phrase it. And so, we've got this really interesting thing where we're stripping away all the nutrients that could be there in a, in a real food, right, in the seed itself. Not only that, we strip away the benefit. Now we add in all of these newly invented synthetic chemicals to try to treat this and make it edible or palatable, should we say. And all this new chemistry gets created. All these new toxins get created that are well noted. Many of them are well noted. Many of them we don't even have any idea what they do to us.

And that's the problem. We don't even have a clue because we're not looking for it. We're not proactively looking for it. But the data that we do have says, hey, for example, looking at biopsies. Right, and seeing the content of the human fat cell has changed dramatically in just a short time span, just a number of decades, like the ingredients that make us human beings have changed. And a huge part of that, as you shared, is our consumption of these seed oils.

CATE SHANAHAN: The one thing that's left that is a nutrient in something like a canola, but not really in very much in soy or the other hateful eight are the omega 3 fatty acids. That, those are there, right? And we do need some of those in our diet, but we don't need to eat canola oil or soy oil to get those omega 3 fatty acids. Most plant foods will have some omega 3 fatty acids and we're going to get enough if we just eat a diverse diet. And of course, so do many animal foods have omega 3 fatty acids. If the animal was fed well, then their fat and their tissues are going to be full of these omega 3 fatty acids.

SHAWN STEVENSON: Can we say something? Cate, can you talk about this? Those Omega threes, aren't they very delicate?

CATE SHANAHAN: Yeah. They are the most delicate.

SHAWN STEVENSON: So just because they're there, doesn't mean that they're in the form that's going to actually be beneficial for you?

CATE SHANAHAN: Right. Because what happens is when you heat them, the first fatty acids, there's a blend, right? So there's a more solid saturated, there are some saturated fats and oils. It's always a blend. It's a combination, but the most fragile of all the fatty acids in our oils are these omega 3 fatty acids and the most important ones to get. But also when you heat them, when you cook with them, they are the first to disappear. And when I say disappear, I mean, they're oxidized, right?

So they're no longer present, but they don't just like zap into oblivion. We either breathe those toxic fumes or the toxic breakdown products stay in the food. So that's where the toxins come from. It's the oxidation of these essential fatty acids, like the omega 3 and the omega 6 linoleic acid. When they oxidize, They become toxins. So you don't even have to talk about the added toxins that you are also of concern, like the glyphosate and the other stuff that's possibly contaminating the fertilizers and like lead, heavy metals are in fertilizers, all that kind of stuff. You don't have to talk about that stuff. There's so much toxicity.

That just happens because of the instability of these oils that convert something that would be a nutrient into a toxin and that's a complicated concept. So that's why I have to write books about it so that people can think about it and think about it and get their heads wrapped around it. Because the transformation of a nutrient into a toxin through the chemical process of oxidation. I guarantee that they haven't wrap their mind around that. Because when you start to do that, you start to see that if we are eating too, just even eating too much of these. Linoleic acid, or even omega 3, which we're not, but linoleic acid, say. Just eating too much of that, and it does store in our body fat.

It's changed the composition of our body fat. We now have something like five to ten times more linoleic acid in human body fat than ever before. But that is still fragile. So all of those toxins that can form in the factory, the aldehydes, the epoxides, and all the other degraded fatty acids they can now form in our body fat or when our body fat is released into our bloodstream. It can become oxidized linoleic acid, AKA toxin that formed in our own bodies. That is horrifying. And there's no other, there's no other food. that can do that as quickly and, you know, dangerously as these seed oils.

SHAWN STEVENSON: Are you interested in living a shorter life? Of course not! Everybody would love to extend their lifespan and their health span. Because it's not just the number of years that we live. It's the quality of those years and what cutting edge research is now revealing Is that there is a specific beverage? Time tested enjoyed by humans for centuries that has the potential to extend your lifespan and your health span. A meta analysis of 40 studies published in the European Journal of Epidemiology revealed that regularly drinking coffee was associated with a lower risk of death from cardiovascular disease, certain types of cancer, and all cause mortality.

Now keep in mind, the researchers did an excellent job adjusting for confounding factors like obesity, alcohol consumption, etc, etc. But they found that drinking coffee really stood out. But here's the key. It's the quality of that coffee. We're not talking about coffee. That's littered with artificial sweeteners and sugar and artificial creamers, like "coffee meat". All right. We're not talking about that. We're talking about high quality coffee itself. And one of the reasons why was affirmed by researchers at Stanford University. And these scientists found that the caffeine found in coffee has a remarkable impact defending the brain against age related inflammation.

In fact, they found that these compounds found in coffee was able to suppress genes related to inflammation. This is truly remarkable. And again, keep in mind that it's the quality of coffee that really stands out. And there's a U shaped curve of benefits. So it's light to moderate coffee drinkers who are seeing these incredible results. And you combine that organic coffee, that's the key, organic coffee with time tested medicinal mushrooms like lion's mane and chaga. You've got something really special. Lion's mane in particular was affirmed

by researchers at the University of Malaya to protect the brain against degeneration and even help to heal traumatic brain injuries.

Again, there's something really special about lion's mane medicinal mushroom. That's what I actually had today, was organic coffee. Lion's mane medicinal mushroom, and chaga blended together in the incredible coffee blends from Four Sigmatic. Go to foursigmatic.com/model and you're going to get 10 percent off all of their incredible coffee blends. They're amazing elixirs of dual extracted medicinal mushrooms. Nobody does it better than Four Sigmatic. Again, that's F O U R S I G M A T I C.com/model for 10 percent off. And now back to the show.

SHAWN STEVENSON: What I want to do next is to address a couple of things. Again, there's something that helps to affirm disbelief in the scientific community. And there are studies like, for example, this was published in the British journal of nutrition. The title is the effects of replacing ghee with rapeseed oil on liver cytosis and enzymes, lipid profile, insulin resistance on patients with non alcoholic fatty liver disease. Again, it's a randomized controlled trial. And so, having a study like this, it's just like, oh, rapeseed oil, aka canola oil. By the way, this has got to be the worst name ever given to any product ever created. Alright?

CATE SHANAHAN: We just gotta say that, yeah.

SHAWN STEVENSON: Just, just a caveat. Alright, this data exists as well, and so I want to ask you about this, because when I see something like this, I know ghee has been used for thousands of years. But rapeseed oil was just invented, you know, not too long ago, and this can help my fatty liver disease. Why would I not want to use this?

CATE SHANAHAN: Right, right. So yeah, so what the study showed was that, you know, they compared two groups of people, randomly assigned, to either continue their normal diet, which contained a good amount of ghee. And supposedly they did not tell them to do anything different. Remember that because we're going to come back to it. These, the control diet was not doing, not told to do anything different. And then the intervention diet, they got canola oil. We're just going to say canola oil because I don't want to say too much. I'm not, I'm

used to saying canola oil, really, honestly. So they got the canola oil. And then they, they ate these for 12 weeks, these two different diets.

12 weeks. So the intervention group was told, don't eat ghee for all of your cooking needs. You're going to use canola oil instead. Okay. And they even quantify how much. So the, so that was well done, right? That part of it was well done. And what the outcome was is that the canola oil group, all of these people, by the way, we need to remind people. They all had fatty liver. They all had fatty liver disease, which is a disease where there's too much fat in the liver. Like if you ever heard of foie gras, that's fatty liver in a duck. We've overfed the duck. The ducks are fat and obese and their livers are fat and delicious apparently. When you're a person with fatty liver, there's just, you look at the liver on an ultrasound and it's full of, it kind of looks like your adipose tissue.

When you, if you take a biopsy, it's not a dark red, like normal, dark maroon, like normal liver. A fatty liver is more yellow because The fat is yellow, right? So it truly looked like that is full of fat. So what happened is the people eating the ghee, they had as much fat as at the end as they did at the beginning. But the people eating the canola oil had a little bit less, but it was a significant amount less, and that's very interesting. And they also had some other biomarker changes that were positive. Like they were more insulin sensitive. So how did that happen? Like how could that be? Well, I'm going to tell you.

It's very simple. Fatty liver is a result of overeating. And the weight loss in the canola group was nine pounds in 12 weeks. Now, anybody who's tried to lose weight knows that losing almost a pound a week, if you're on a diet for a year, you're going to lose a hundred pounds more. You're going to lose more than a hundred pounds if you lose almost a pound a week for a full year. And these people were lost nine pounds in 12 weeks. So they were rapidly losing weight. Rapidly. How much weight loss occurred in the control group that didn't change their diet? Zero. No weight loss. None. So of course their fatty liver didn't change. And that's what you call a confounding variable. Okay.

So something, there's something fishy there. Because, that is not what you would expect. And so the other thing is that, here's what gets dangerous in nutrition science. Because the

authors wanted to explain this, and they wanted to, they apparently wanted to say canola oil is healthy, because they, they overlooked some other, they didn't highlight this. They said, oh, well, canola oil must help you lose weight. Now, I gotta say, if that's true, then since there was zero canola in the food supply before 1980 in America, and now we're eating pounds and pounds of it per year, why hasn't it helped us lose weight? Why isn't canola oil the secret, you know, ozempic?

Why wasn't it out, you know, out there helping people not need ozempic to lose weight? So, what that is, is as a statement. That kind of explains the result. And if you're not thinking too hard, you'll take it. You'll be like, Oh, wow. Canola oil is great. It helps you lose weight. It reverses your fatty liver. The article does not point out that weight loss alone, regardless of any method, reverses fatty liver. Okay. The article doesn't say that. That's why I think there's something fishy going on. Something else too. I wanted to tell you, I took some notes here. So both groups, the control group, you know, the group eating ghee and the group eating canola.

They both increased their exercise, but one group, guess which one, increased their exercise a whole heck of a lot more. Maybe that's why they lost the weight. Now, why would they do that? We don't know, but because the authors did not comment on that. They reported on that. But when you're a real scientist, an ethical scientist, and there's something unexplained that is a co, an important. Covariate as they call it another confounding factor that could explain the weight loss and therefore the fatty liver you must bring it up. They don't say a word about that. They don't say they don't explain why these people were exercising more. But it doesn't take a genius to imagine. Well, gosh, maybe in addition to their Dietary intervention, the canola oil, maybe they got a reminder to exercise and that just wasn't brought up that kind of nonsense, which I call cheating happens all the time in the nutrition trial world.

So I am told by nutrition trialists. Many of them, right, the non conflicted ones, the ones, the people who have been in charge of major studies done at the NIH. This kind of dirty, behind the scenes finagling of manipulating what people are doing or manipulating the data happens all the time in human clinical trials. So for those people who say human clinical trials

are the gold standard, they don't have a clue. Or else they're, you know, in on the game themselves, and they just are lying.

SHAWN STEVENSON: To put it bluntly, so again, just to reiterate this point, there are reasons behind things, and just looking at things superficially is not good enough today. Especially when we're dealing with such a hot topic in nutrition and human health. And as you mentioned, there's changes happening politically that's bringing some of these conversations to the forefront. But one of the things, and I, I want to reiterate this point, is for us to not completely buy into any of it.

We've got to be our own advocates. Because even though this conversation is being brought to the forefront in some circles of the political sphere. Recently, the selection for the, to head up the USDA here in the United States is somebody who is a former like megastar leading advocate for the seed oil industry. You know, and so it's just like this very interesting mix of people who are getting put into these positions. But for me, the good news is that it's not the run of the mill business as usual, because people are asking questions, people are demanding change, people are demanding different, but we still cannot put all of our trust into these entities.

There's so much money involved. We're talking about billions upon billions of dollars are in play here. And so we've got to be our own advocate first and foremost. And something you said earlier about the consumption of these ultra processed seed oils and how they're showing up in our bodies in different ways. And this reminded me of a study, this is a recent study, and again, it's difficult to do this on humans, alright? So I'm gonna share this study with folks. So This study found that consuming canola oil shrunk the testicles of mice. While another study, this was published in the African Journal of Biological Sciences, the researcher stated canola oil, "canola oil usage resulted in distorted seminiferous tubules, degenerated germ cells, and ultra structural changes in the testes. Canola oil should be used with caution, especially in males, to avoid its hazardous effect on the testes".

Alright, so again, it's difficult to get some guys together. Like, come in here. We wanna, we wanna measure your balls. Alright, put your balls in my, in my hand. Put your balls in a cup.

Whatever we put your balls on the scale. We want to measure your balls. We're gonna have you to consume ghee for two weeks or olive oil for two weeks and we're gonna have you consume, you know canola oil, and it two weeks is probably not enough. But for you know, six months and then we're gonna measure balls every month. You're gonna come in here drop them on the scale. This is very difficult to do in the human population.

So, again, it's difficult to track back what's happening to our reproductive health, for example, which has plummeted. About 50 percent, human reproduction. Infertility has risen about 50 percent in the last 40 years. For all matter, male and female result in issues. Something is going on. Something is truly A rye and we've got to talk about this and this is one of those things that this is kind of a red flag But for us, it's dismissive. Oh, that's an animal study Let's talk about that a little bit.

CATE SHANAHAN: Well, I want to start out by talking about that when they find infertility, men who are infertile and animals, they find signs of oxidative stress in the testicles and within the sperm and the seminal fluid. They find evidence of oxidative stress, which means just like burnt up bits of the fatty acids. The transformation of healthy body parts. Once it's oxidized or burnt, just like the wood in your house, it doesn't look the same anymore, and they can see the evidence of that burning, right? They can see that. Oxidative stress. Now, we know that the toxins, that the seed oils themselves are highly susceptible to oxidative stress because they are polyunsaturated.

Those omega 3s and omega 6s are highly susceptible. So, just based on that, we should be worried. But then there's the toxins that come along with the oils and what do they do? How do they harm our bodies? What is their toxic effect? Well, they cause oxidative stress Right. So, so one thing that they do, which is so devastating and this, I wish there was a way to visualize this, but a toxin, the way I define a toxin is a toxin is a molecule that attacks our biomolecules. So the toxins in the seed oils, let's just say alpha beta unsaturated aldehyde, just to say, I know what I'm talking about here. There's real, we have names for these things. Those compounds can interact with. Our cell membrane fatty acids and oxidize the linoleic acid there and the, the omega three there and the DHEA and all the essential fatty acids in our cell membranes.

And they don't just destroy that. They start a free radical chain reaction that does that damage is not just one molecule at a time. Billions, billions of molecules get damaged and when they are damaged, they generate their own set of new toxins that can turn around and damage other molecules. It's a chain reaction. So that's why we need to make a big deal of having just a little bit of these toxins. They're in, in the oil at parts per million. Sometimes they're in food at parts per thousands. A part per million is one inch and 16 miles. Some people say it's not enough to worry about. But the fact is that these toxins attack our biomolecules and turn our biomolecules into destroyed tissue.

Right? It's like starting a dumpster fire in the tinder of, you know, the LA hillside back in January. Oh, it's just one dumpster. That's not very big. L. A. is like, what, 100 square miles? I have no idea how big L. A. is. This one dumpster, what is that? Like, 16 square feet? That can't hurt. L. A.? Oh. But it's exactly that stupid, right? I mean, maybe the analogy isn't perfect, but it's that stupid to say that the concentration of these extremely dangerous toxins is so low it doesn't matter. It matters.

SHAWN STEVENSON: Yeah. You detail in your book, by the way, this domino effect, right? You break because it is, again, unfortunately, and of course, there are many aspects of health that are very simple, but it's the, the big movers, you know, it's some Captain Obvious stuff. You know, we need sunlight, we need nutritious food, we need to sleep. We know these things. These are big movers. We are infinitely complex. We are infinitely complex. And that complexity tends to get people to shy away and not want to look at it. Right? Like, this is how it is. Big movers. Just, you know. And that's okay. But if you're going to focus on that and not want to get into the rapeseed weeds, if you don't want to get into that, then you just can't superficially say that this is okay.

This newly invented, ultra processed oxidation in a bottle is okay for humans to consume because the topic is complex. So if you do want to look into the complexity, checking out a book like Dark Calories is a great resource because you do make it palatable. You make it understandable. Again, it's complex, but you make it understandable. And as you mentioned, you know, that dumpster fire can obviously have this domino effect that tears down so much livelihood. And the same thing can happen with our health, with what we're putting into our

bodies. It can set off these metaphoric fires in our system, and really that's what inflammation is. And I appreciate you so much. Can you let everybody know where to get a copy of Dark Calories and just where to connect with you and follow your work in general?

CATE SHANAHAN: Yes. Thank you. So, please visit my website, which is DrCate.Com, D R C A T E.Com. And from there, you can read about my books. I've got, uh, you know, about Dr. Cate's books is one of the menus. From there, you can also sign up to my free newsletter where, you know, I don't bombard you with all kinds of stuff I'm trying to sell because I don't really have stuff to sell. It's just information that I think is going to be useful. And when I do something really interesting, which I'm about to do, I have a whole new course I'm launching called Rebel Well.

Because you have to be a rebel if you want to be well in this day and age. So that, uh, you'll be notified. Like if you sign up to my newsletter, you'll find out when that's available. And if you do read dark calories, then I think, you know, if you read it and you understand it, You do earn the right then to be, to call yourself, you know, somewhat of an expert.

But if you don't, you don't have that right. I'm sorry, because to me, like that is a, like the seminal, I think definitive book. Maybe there's some other good books out there about the fact that these oils are bad, the corruption and so on, but, and read those too. You have to read these books to earn the right to have an informed opinion. You can have an uninformed opinion. You can feel very strongly about your uninformed opinion. Many people do. But once it's informed, then you really earn the right to tell other people what to do a little bit more.

SHAWN STEVENSON: I appreciate you so much. You know, I'm glad that I have access to the bat phone where I could, you know, hit you up or put the bat signal in the sky and you could show up and help educate and empower us. And yeah, thank you so much for spending your time with us today.

CATE SHANAHAN: Well, thank you, Shawn. I'm always looking out for your bat signal.

SHAWN STEVENSON: Boom. Let's go. Dr. Cate Shanahan, everybody.

Thank you so much for tuning in to this episode today. I hope that you got a lot of value out of this. I know there's a debate raging on about seed oils. And to be honest, that's all good. It's great to have a conversation. It's great to debate certain topics, to talk about pros and cons, all that good stuff. But unfortunately, the tendency tends to be swung so far over into the realm of the ridiculous. And just for us to have this rational revelation that even the most staunch advocate against ultra processed food is overlooking the fact that seed oils, vegetable oils, "vegetable oils", are the very definition of an ultra processed food.

But we don't want to sit around and wait for society at large to be, of course this was bad for you. Like it's been done with the low fat movement, like it's been done with utilizing sugar as some nutritive supplement, like it's been done with smoking. The list goes on and on and on in these examples and it's pretty clear at this point that vegetable oils are going to be in that same camp where it's going to be just widely considered like that was crazy that we were doing that. And so if you want to help to continue this conversation and get the information out there from. Truly, she is the leading expert in the world. No one has studied this stuff more than her. To share the insights from Dr. Cate Shanahan with the people that you care about, please do share it out on social media.

Of course, you can send this directly through the podcast app that you are listening on. And I truly do appreciate that. We've got some epic masterclasses and world class guests coming your way very, very soon. So make sure to stay tuned. Take care. Have an amazing day. And I'll talk with you soon. And for more after the show, make sure to head over to themodelhealthshow. com. That's where you can find all of the show notes, you can find transcriptions, videos for each episode. And if you've got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome. And I appreciate that so much and take care. I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.