

Toxic Superfoods: How Oxalates in Ostensibly Healthy Foods Are Ruining Your Health

A Special Interview With Sally K. Norton

By Dr. Joseph Mercola

Dr. Joseph Mercola:

Welcome, everyone. Dr. Mercola helping you take control of your health, and today we are joined by Sally Norton, who is here today to discuss her new book. This is a book that was desperately needed because there is no book that has ever written about the dangers of oxalates in the diet, and she's going to dive deep. I've interviewed her before, but that book wasn't written and it's taken her a long time to get this book together. She had to go through a number of agents, she had to convince the publisher that this was a real deal, and she found one and was able to get it and they came up with a phenomenal headline, I mean, a title, which is just really great, and I just hope it does well. I'm pretty confident almost everyone watching this needs to pick up a copy of this because this knowledge is not available. You can get bits and pieces all over the internet and listen to Sally's interviews and go to our website. But this book puts it all together.

Really, if you are an advocate for natural health, you really need this in your library because, one, is a reference because it's got tables in there that will help you identify the high-oxalate foods. But also, this information, sad to say, and I'm not convinced, I'm not a hundred percent certain, but I believe that more than likely, most of the information on the internet with respect to natural health is going to disappear. It's just going to be gone unless you know where to go. So, if you know Sally's site, you can go there and find some information, but you're going to type in oxalates and all you'll find is good stuff and they'll tell you to take it as a supplement, and you won't be able to find it. So, you really need to start acquiring important, valuable resource material, and I would include this in your library, for sure. So, with all that great intro, I think, welcome and thank you for joining us.

Sally K. Norton:

It's so wonderful to be with you again. We're going to have a good time.

Dr. Joseph Mercola:

Yes. So, I don't know where to start. I guess probably, the last interview was a few years ago now.

Sally K. Norton:

2019.

Dr. Joseph Mercola:

Yes. That's three years. Dang. So, things got buried in COVID, like many things did. So, it probably is best – your interview, I realize, our previous interview was taken down. So, my whole channel was removed. So, for many, this is their first exposure to you. Even if they

wanted to see that, they couldn't. We're in the process of reviving that. But we had thousands of interviews and it takes a while to get everything back up. So, why don't we-

Sally K. Norton:

Well, I just want to say I just appreciate your perseverance. Thank you.

Dr. Joseph Mercola:

Oh, you're welcome. Well, what's the other option? Just capitulate and surrender?

Sally K. Norton:

Exactly.

Dr. Joseph Mercola:

No. That's not going to happen. So, why don't we start, I think it probably is wisest to start at the beginning. What is an oxalate, why are they so bad, and how are they hidden in these superfoods that so many people are consuming? I'm sorry for the long intro, but it's just, I've had so much experience with this. This is a golden nugget of knowledge that has saved – no, but saved lives might be a bit hyperbolic, but-

Sally K. Norton:

No, it's not, actually.

Dr. Joseph Mercola:

Okay. Well, it's radically improved many of my good friends, many of my good friends.

Sally K. Norton:

Oh, good.

Dr. Joseph Mercola:

With that, so that's why I really value this resource and I'm just so happy to have you back on again. Even more delighted that you finally got the book out. Oh. Before you go in, I know I'm not letting you say anything, but I'll let you take over in a moment. Just to give you an idea into my perseverance, well, Sally asked me to write the foreword to this book and I said, "Great." I didn't start it and then she sends me an email not a bit later and says, "Oh. You got to nix that. I didn't realize you are kryptonite. No publisher will take your foreword in the book." It's not because the market for this doesn't love and embrace me, but the publishers are pretty much close to over 95% woke and progressive and they just avoid me like the plague. So, that's all and I'll let you go forward.

Sally K. Norton:

Well, and this topic is so in danger of that suppression. There's many people who should be in our team who don't want this to be true. But the rubber meets the road. As you can see in real people's lives, when they start paying attention to the oxalate they're consuming, all kinds of better things start happening. That's really the basis of all science is you observe reality and then

you learn to try to explain what's underneath the hood of reality. But you don't discount reality and put supposed science above that. Unfortunately, you can do that with arguing, use some bad studies and cherry picking, and you can do that with any topic. You can try to dismiss others, and this topic is in danger of that.

Dr. Joseph Mercola:

Yes, indeed.

Sally K. Norton:

Thank you.

Dr. Joseph Mercola:

So, why don't we start at the basics and go over what are oxalates, why are they so pernicious, why are they dangerous, and why do we need to pay attention to this? Almost everyone watching this really is going to benefit from this because there are foods that you think are healthy that are not that healthy because of the oxalate issue.

Sally K. Norton:

Right. See, we've been going on a theory for a while now, since the '80s, that there's some fancy special stuff in plant foods that we have to have, and there's never been any proof that there's any required phytonutrient beyond the nutrients we've mostly identified in nutrition. So, we've been blowing that out of proportion because it sells, you can create products, and so on. So, we've been getting a lot of skewed information. I like the phrase, a phrase called "benefits only." So, with a shiny, almost naïve, sort of benefits-only mindset, we are thinking more and more and more of these foods that are now elevated to the status of superfood is better, and more is not better. So, the real danger of this is that we're literally poisoning ourselves because of antinutrients, but particularly oxalic acid.

This is not one that can easily be removed by cooking. All kinds of people who should know better, who have the hubris to have opinions without even looking at the research are saying you can cook this out of your food. You can't do that. You can't soak it out, you can't ferment it out. Cooking, boiling will leach it out a little bit, but with really high-oxalate foods, that's not significantly valuable to your health because it's still exceeding your innate physiologic capacity to manage and deal with this without severe damage. So, oxalic acid, a tiny little natural organic acid, as many acids are, with special qualities. It's called a dicarboxylic acid. It has two carbons, met together and each carbon brings with it an oxygen molecule. This special dicarboxylic carboxylic acid has all kinds of damaging, toxic powers.

I think the first one to really hone in on and what it's doing to us is when it's near a membrane, that's the boundary around a cell. The membrane also boundaries around subcellular organelles. There's a double membrane structure for mitochondria. So, membranes really matter to biochemistry and to our basic physiology at the cellular level. Your membranes have to have the right structure and the right materials in them to function well. You've been also focusing lately on vegetable oils and how toxic they are.

Dr. Joseph Mercola:

Yeah. Linoleic acid. The devil. Right?

Sally K. Norton:

Yeah. It's messing up the structure of the membrane, because membrane is this double layer of fatty acids. Right? Well, there's a certain structure you need to the membrane for it to work right. Now, the membrane does all kinds of intellectual communication processes in the cell, helps the cell decide what to do next in any situation, and you need to have certain fatty acids only on the inside of the membrane. It's two layers. So, there's what we call the inner leaflet and the outer leaflet.

Well, on the inner leaflet, there is a phospholipid called phosphatidylserine that's mostly not in the outer side of the membrane that faces the world, so to speak. When oxalate's around in the extracellular fluid, and it could be oxalic acid or oxalic acid bound to a calcium. So, oxalic acid is a chelator of minerals. It grabs calcium, magnesium, iron, copper, you name it. But it especially loves calcium because ultimately, it has two negative charges and calcium has two positive charges and the fit is so perfect. That's often the end point of where oxalic acid ends up, both in the soil and plants and in our bodies. But in the meantime, what's really getting into your body and causing trouble is the free oxalic acid ion, this single, little molecule that easily transverses your gut because it just floats in the water between the cells.

We call that paracellular [inaudible 00:09:39]. It just floats in with other ions just like an ion of, say, potassium, and it's right away getting into your liver, but in the meantime, it's bumping around on the cells that line your vascular tissues or, well, let's start in your mouth. How about your stomach, your intestines? This is all a single layer of important complex sets of cells and when oxalate's around, it causes membrane damage to the point where that innate structure where the phosphatidylserine is now showing up on the outside of the membrane. That's bad news. For many cells, that means the cell is now in line to be removed because it's damaged. It's a signal to the immune system, "Hey, take away the cell. It's been harmed." So, you lose your structured membrane. That creates all kinds of headaches for a cell, often can't function properly.

This is especially true of the cells that line the vascular system. So, now you have the endothelial lining that that is this giant organ of physiology, metabolism and maintenance of the body can be in trouble after, say, a spinach smoothie, which spinach is sort of a poster child for oxalate, very high oxalate food, and its friends that are just as bad or worse are Swiss chard and beet greens. So, in the leafy green department, it's really those are the bad three guys, the spinach, chard, and leafy greens. But another place where people will be getting these effects right after a meal would be almonds, which is being heavily overused now as a bread substitute, as a flour substitute, as a milk substitute. Keto diets and paleo diets and these kinds of notions are heavily reliant on almonds. Right now, here we are at the end of the year and you can't go into a store and not be almost assaulted by the various forms of chocolate-covered almonds and chocolate-covered nuts.

Dark chocolate is another very bioavailable, as we say, because it easily gets into the blood. Lots of oxalic acid in chocolate that quickly enters the bloodstream, quickly meaning the transit time from the time of pleasure to the time of elimination is typically a whole day. Or some people, it's

even more. But there's a peak at about four hours after you eat it where the level of this oxalic acid in your blood is really quite high. So, now, now that your cells have damaged membranes and they can be not just the, say, the hepatic circulatory system, that's the system of veins and arteries that drain the nutrients, that collect the nutrients from the digestive tract and take it straight to the liver, your poor liver is flooded with oxalic acid after meals, and the liver has zero physiology to break it down, change it, make it less toxic. The liver literally makes more oxalate, and the more inflammation in the body, the more oxalate the liver makes.

So, what enters your body from the intestines now leaves the liver as a higher dose of oxalate than the liver got, and that is like two inches from the liver to the heart. It passes past the diaphragm. The diaphragm can get into trouble too. Well, we can talk about that later. But in the meantime, when you've got a damaged membrane, now oxalic acid can enter the individual cells. Now, you have a calcium chelator hanging out inside the cell. Now, calcium is critical to cell function. We call them sparks and quirks. It's really interesting literature about the way the cells use calcium as messengers, many types of messengers using the same old, little calcium ion. So, critical to cell self-management is calcium.

Well, when you start adding – well, actually, I'm thinking back to the science. When you have that damaged membrane, even before oxalate enters, which might take two hours, in the first 15 minutes after you've got oxalate near a cell, you've got an increased amount of calcium moving into the cell. So, that cell membrane damage causes the cell to uptake more calcium. Well, too much calcium in the cytosol isn't good, but then oxalate follows it and then it lowers the effective calcium rate from a physiologic standpoint. So, this is confusing already because now you have too much calcium, but you have too little that's working correctly.

Dr. Joseph Mercola:

Yeah. Allow me just to insert one factoid that I think might help people understand that I learned after researching EMFs (electromagnetic fields) is that the concentration of calcium outside the cell is 50,000 times lower, or higher than it is in the cell. So, that's why that cell membrane becomes so important because it's such an important signaling molecule. If you have a defect in that, and that that's the mechanism that's proposed by at least Martin Paul and others, that EMF damage occurs is because the calcium is increased when EMF exposure is – it activates [crosstalk 00:14:55].

Sally K. Norton:

In cells.

Dr. Joseph Mercola:

In cells. Right. It causes this cascade of increase in nitric oxide, superoxide to form peroxide nitride and – but I didn't realize that oxalates also worked on that mechanism.

Sally K. Norton:

So, this is the intersection of all these toxicities where the oxalate toxicity creates increased vulnerability to the EMF toxicity. We see this, and we see this in my client base where we're all frail and sensitive to everything and then we get lower in oxalates in our body, start cleaning it

up and suddenly, we're tougher again, and these other stressors aren't quite as bad on us anymore. So, that's like, fundamentally, as you say, take control of your health. This is one place where you have more control over how much oxalate in your diet than you have over EMF exposure in many situations.

Dr. Joseph Mercola:

A hundred percent. Yeah. It's all in your ballpark, for sure. You have total control.

Sally K. Norton:

That's why this is such an important lever for people to know, and unfortunately, we've been misguided. So, here we are with these various cell membranes that have been overexposed to oxalate that are now leaky to calcium and leaky to oxalate, which is really important because if you don't recognize that thing there, then we think in our philosophy about how cells work is that the fatty membrane protects you from these charged ions, like oxalate, but it doesn't once you've got the damaged membrane. Many things will damage the membrane like perhaps the EMFs and other toxins as well. But oxalate has been documented to be really good at this. They've studied it a lot because they cannot figure out the kidney stone, which is a whole, little sideline problem. Not even the most central problem, but the only place where we'd fund it, primarily.

Now you've got cells that have too much calcium in them and too little calcium that's actually functional. So, the cell keeps bringing in even more calcium because the oxalate's there chelating the calcium out. But in the meantime, the mitochondria are picking up calcium because they're trying to save the cell from the excess calcium. So, this mitochondrial rescue problem kills off the mitochondria and ultimately kills off the cell as well. So, you've got multiple steps where the oxalate effects are kind of expanding into cell collapse. You also, in the meantime, if it's not that extreme, if it's just a little bit, in the meantime, as oxalate's penetrating cell cytosol area and the mitochondria, it's sitting on certain enzymes. So, the last step in glycolysis is blocked. It's masquerades as pyruvate and it sits on the active site of at least four metabolic enzymes, including the last step in glycolysis, step two in the electron transport chain. There's several.

So, it also affects your ability to produce glucose later and can contribute to low blood sugar and probably insulin resistance and lots of metabolic problems because fundamentally, you've created an energy crisis in the cells because of this oxidative stress, because of the calcium overload in the cell, and you've got enzyme interference. Now, if your mitochondria ain't happy, you can't produce enough of the materials to even replace yourself as a cell. So, cell reproduction can be hampered. So, your ability to produce enough cells before they die, they're dying, their lives are shortened, they're dying quicker, and they don't have enough energy to produce enough proteins and other materials they need to duplicate themselves.

So, you get fibrosis instead. Instead of getting healthy maintenance of tissues, the fibroblasts start producing more and more of this scar tissue material and you get fibrotic gunk holding you back together because if you don't have enough cells to hold the tissue together, you need this temporary stage of producing scar tissue to keep you from falling apart and suddenly bleeding out or having problems. So, this is a great thing the body's doing. But in the long run, you could turn into a fibrotic mess and not know why.

Dr. Joseph Mercola:

Yeah. So, thank you for reviewing the physiology. Well, a few questions. You had mentioned the three nasty super-vegetables, which would be the spinach, beet roots, greens, and beet greens-

Sally K. Norton:

Chard.

Dr. Joseph Mercola:

-and chard. But what about kale? Because typically, that's classified in there, but it's not as high. I understand it's not as high as oxalates, but it's potentially contaminated with thallium.

Sally K. Norton:

Vegetables all have their downside, thallium and all kinds of problems. Kale, I wouldn't elevate kale to its beautiful status as some miracle food, but it's not a high-oxalate food, generally. Now, compared to lettuce, it's three or four times higher than lettuce and cabbage, like plain red or head cabbage. But compared to spinach and chard, kale, no problem. The thing is, you can't just keep concentrating it into kale chips and kale this and kale that and have that be good. It's not.

Dr. Joseph Mercola:

Okay. Good. So, why don't you review the symptoms that one would have when they're exposed to excessive oxalates. The most common one, of course, that even conventional physicians will not deny is calcium oxalate kidney stones, which comprises about 80% of the kidney stones. Maybe review some of the reasons why some people tend to have this independent of necessarily high-oxalate concentrations because they're more predisposed because of some SNPs (single nucleotide polymorphisms) they might have. So, yeah. So, talk about the kidney stones and then talk about other symptoms people might be having that would alert them to, "Oh, my gosh, I had no idea it was due to oxalates." I had one. I'll mention it. It is very obscure and bizarre and probably no one, maybe, or one or two people might be experienced.

But I had a really nasty, highly pruritic itchy rash for a dozen years, and ultimately, you confirmed it as that I had another few other clinicians – I had seen so many people about this. It would just drive me nuts. It would wake me up at middle of the night with this itching and it turns out it was oxalates. When I lower my oxalates, it just basically disappears. If I get a spurt of reintroducing some foods that are high in oxalates that I'd forgot about, like carrots I did, I was on a stream of having a pound or two of carrots a day recently, and then boy, that rash flared up because of the oxalates. So [crosstalk 00:21:48].

Sally K. Norton:

It's nice your body can speak to you, and this is very common. In my world, my client base, rashes and unexplained suffering and itching, this is really common. So, to get to the kidneys, this is a water soluble ion that's chelating and becoming little particles that form these little stones, and the kidney is the ideal place to release these, "water-soluble toxins". So, that's 90%, and they think it's probably a little less than that, of the oxalates that you're getting into the body from food and elsewhere are eliminated through the kidneys. So, the kidneys' job is to concentrate oxalate, which is a really crappy job to have because it's so toxic. It's amazing. The

kidneys are designed so well they can do this work. I wouldn't sign up to be a kidney cell if I had a choice. It wouldn't be my job. But the skin also can do this. Skin is the largest organ of detox and we have all these glands and glands tend to pick up oxalate when it's high in the blood.

Glands are sweeper cells. They need a lot of material to do their work and they tend to pick up oxalates. The salivary glands are known to concentrate oxalate 10 to 30 times higher than what's in the blood. So, after a high-oxalate meal or after your body starts releasing oxalates from the tissues, which is a whole 'nother subject because I do want to get to the kidneys, so the kidneys are in harm's way when we have a high oxalate diet. They're concentrating oxalates. Now, some people have such great ability. There's redundant systems designed in a healthy kidney to avoid stones. So, most of us, even on a really high-oxalate diet for years, we don't tend to get the stones, which is misunderstood in science. Even though people are getting stones younger and younger and more and more females are getting them, back when I was coming up, kidney stones were for 80-year-old white guys. It wasn't a thing you thought about for young women.

But now you're seeing it more and more in girls and teenagers that are female, which should be alarming. But the percentage, they keep presenting the same percentage, 10% to 12% of humans get kidney stones, even though the kidney stone problem seems to be getting worse. I think that's because 90% of us have such amazing genetics and a lot of us are eating an adequate diet that's not overly stressing the kidneys, perhaps. People who take a lot of drugs are stressing their kidneys. But the number one toxin for kidney cells, literally, is oxalate. But despite that, there's many things that kidneys do to prevent it from becoming stones. If you have cloudy urine, that means you're able to release the crystals of urine, or the crystals of oxalate that are forming in the urine, and you're doing that because your tubules can dilate. These tubules are the collecting areas where the body's basically collecting and building urine and it's coming out through the bladder, ultimately.

But your tubules can dilate if you're really healthy kidneys. But not everyone has that dilation power, so they're not producing the crystal of urine. But the other things the kidneys are doing is they're putting out citric acid, which has a stronger bond to the calcium than the oxalate and it softens and prevents the individual molecules from building into larger stones. You're also putting out all kinds of proteins. Many, many proteins, the kidneys will put them out and they'll sit in ways and block the building of bigger stones, because crystals will grow. They start with a little precipitation or suddenly the ions and the molecules of calcium oxalate, you get eight pairs of them, and in the right environment, which is usually an environment where you have cell vacuoles around and damaged membrane material, you have extra junk hanging around, and that turns on as precipitation where you go from ions and molecules to stones.

Then stone sticks to these damaged membranes. That's where they hang out. Once they start precipitating, they stick to membrane surfaces, often to cells that are regenerating or recently dying or struggling because they're infected or inflamed, or in any way, there's some kind of inflammational stress or reproductive stress going on in those tissues, and that's where it's sticky. But just the oxalate damage itself, that shift in the membrane structure makes them sticky so then it can stick. The kidney, the kidney has another way of defending itself, and that's this eating of that crystal that's sticking to the surface of the tubule. Then you get this, kind of like it's this back alley behind the tubules inside the kidneys where we're just throwing the junk, kind of becoming

a hoarder where the attic is filling up, and then you get something called nephrocalcinosis. So, some people end up with this diffuse collection of calcium in their kidneys called nephrocalcinosis and they're not getting stones because that imbibing process is working well.

But if you're producing enough citrate and proteins and you're able to dilate your tubules, you can avoid the stones. But that doesn't mean you are poisoned with oxalates. Some people, they don't get the stones until they hit the bladder, and all of a sudden, the bladder becomes a place of precipitation. So, if the bladder has got this permanent rash because it's irritated by crystals, you end up with things like interstitial cystitis, which is frequent urination and bladder pain that can be very disruptive to life and can create severe depression because you're not sleeping enough, and of course, the effect on the nervous system also creates depression, anxiety and mental problems, emotional difficulties. But your kidney stones are a combination of your vulnerability and your diet. If you're not giving the kidneys the basic materials to build a stone, it's pretty hard to build a stone.

Dr. Joseph Mercola:

So, let's go back to some of the symptoms again. Thank you for reviewing the physiology of the calcium kidney stones. But how about other symptoms that people might have?

Sally K. Norton:

Yeah. So, like all diseases, you can have an oxalate problem and have very few symptoms. You don't often know you have cancer until it's stage 4 and then you're dead or later. So, we don't want to use symptoms as your only evidence. You also know if you are overeating oxalates, it's causing problems under the radar and your body is doing a tremendous job of not telling you that it's starting to become mineral-deficient and having trouble managing its electrolytes and having immune system problems. So, keep that in mind.

But the symptoms are often things like the rashes that you're talking about, a little wound that doesn't heal, like some little something on your skin and it just kind of stays discolored and not quite right. Your skin is kind of frail, you pop open and get little bleeds now and then. Those kinds of things could be sign that your connective tissues aren't good. Connective tissue is most of your body, right? So if you have joint pain, if you have weak skin, if you have osteoporosis, of course, that's the late stage of oxalate damage because it's causing acidity and it's causing this constant mining of minerals from your bones. I truly, truly with all my heart believe that the primary cause of osteopenia and osteoporosis is the oxalate in our diet, and we can-

Dr. Joseph Mercola:

Interesting.

Sally K. Norton:

-eliminate this whole problem.

Dr. Joseph Mercola:

Interesting. Well, part of it is because it's such an aggressive minimal chelator, as you mentioned. We need minerals to build bones, for sure. [crosstalk 00:29:22].

Sally K. Norton:

Well, you see, what it's doing with calcium, it's literally, they call it a trapping agent. It's a calcium trapping agent cells. So, you get calcifications everywhere, and what gives the calcium to be able to do that are the bones. You're sucking the good of productive calcium out of bones and tissues and it's ending up as this pathologic calcium deposit. So, when you see calcium deposits, and they're not always just oxalate, they're often the other forms of calcium like appetite and other forms, it can still be because oxalate is messing with the cell's management of calcium.

Dr. Joseph Mercola:

Do you think that the vitamin K2 integrates calcium more effectively into the bone matrix and somewhat mitigates or ameliorates this issue?

Sally K. Norton:

We have zero science to be able to claim that.

Dr. Joseph Mercola:

Does it makes sense, though? Does it make sense?

Sally K. Norton:

It makes sense that you want to support the bones, but if you're low in calcium in the blood because you just ate a spinach smoothie, at some point, the bones are going to be asked to contribute and give up calcium because you cannot have magnesium, calcium and these electrolytes in the blood too low and off because you'll drop dead of a heart attack, and the pacemaker and the heart cannot figure out life without enough of electrolytes. Electrolytes run nerves, muscles, everything. It's like electrolytes are information in the body. The electrons and charges, this is the battery that runs things. If you mess up the battery, you depolarize these membranes where they have a differential of a plus-

Just like you got to put your battery in the right way, your plus and minuses have to be in the right place. If you don't have a plus and minus on each side, the battery doesn't work, and that's the energy of life itself. So, at some point, no amount of K or any of these wishful thinking that, "Oh, if I take this other supplement, I'll be protected from poisoning by oxalate." You can't protect yourself from poisoning in that way. The way you protect yourself from being poisoned is you quit poisoning yourself and then those nutrients can help you rebuild your body. But in the context of needing to keep on your chocolate keto muffin cookie thing, it's not going to work.

Dr. Joseph Mercola:

Okay. Well, I'm wondering if one of the antidotes may be an exception for this, and obviously, you can't take any type of mineral supplement to address this. But apparently, the citrate molecules you alluded to earlier is pretty particularly useful at dissolving these oxalate molecules, but like potassium, calcium [[crosstalk 00:31:56](#)].

Sally K. Norton:

They're all important.

Dr. Joseph Mercola:

Yeah. So, you can use those as sort of an antidote in the window that you're going to describe that you're taking around the time of ingestion of the oxalate because clearly, the best and most important strategy is prevention, just to not put this stuff in your body to begin with. But if you're putting it in there or you choose to for whatever reason, you got to at least take the antidote. So, why don't you talk about the strategic use of the antidote?

Sally K. Norton:

Yeah. If we could just back up in a little bit of context because the bigger issue is that you bioaccumulate oxalate because it's sticking to these membranes and just like in the kidneys, we end up with nephrocalcinosis. If a certain amount of oxalate calcinosis in your bones, in your bone marrow, in your joints, in your thyroid gland, depending on how old you are, you have a 70% to 85% to maybe higher percent chance of basically little kidney stones in your thyroid gland. So, the minerals, a mineral-rich diet lowers the amount of oxalate that moves from your food into your blood by maybe 20%. It's still, you have to have a reasonably moderate oxalate diet for that to be meaningful because you're still going to absorb an amount that's still exceeding your capacity the way we're designed.

Dr. Joseph Mercola:

What is that capacity?

Sally K. Norton:

Well, the research-

Dr. Joseph Mercola:

[crosstalk 00:33:18].

Sally K. Norton:

-based on kidney stones says that the kidneys can handle up to about 24 milligrams of oxalate a day to excrete it.

Dr. Joseph Mercola:

That's not a lot.

Sally K. Norton:

That's very little.

Dr. Joseph Mercola:

Darn. That's almost like a low-carb diet. It's just as hard.

Sally K. Norton:

Yeah. Yeah. It says a lot. The science, when you look straight at the information, it's asking us to rethink on a lot of assumptions and beliefs, and not a lot of people are brave like you, willing to keep learning and realize, "You know what? We didn't have all the facts. We forgot this little puzzle piece. Let's add this puzzle piece." That one piece shifts the whole fabric of our big conversation about plants are saving the day for our diabetes problem and our obesity problems and our infectious disease problem. We should touch on Vitamin C too because this is – now, this 24 that you can handle, let's call it 25, that you can handle every day with a healthy kidney, these are now people who are genetically prone to polycystic kidney disease or chronic kidney disorders or were on a lot of NSAIDs (non-steroidal anti-inflammatory drugs) and other kidney-killing molecules and heavy metal exposure and you name it, infections, so on. Those are all stressful. So, of that 25, half of that's coming from supposedly endogenous production, meaning it's coming from the-

Dr. Joseph Mercola:

Wow.

Sally K. Norton:

-liver and the cells, and some fraction of that endogenous production, in 10% or 20% of that, half, so that's only 5% to 10% of what you're peeing out, because half of it's from diet for a normal diet, not for our modern high-oxalate diet, is coming from the breakdown of amino acids, hydroxyproline being the leader of the pack of amino acids that can be broken down into oxalic acid. So, hydroxyproline is going to break down when you've had surgery, injury, lots of sports. If you're eating a lot of collagen and really pushing the collagen, you're going to increase those collagen, the kind of amino acids in collagen and gelatin are the very ones that break down into oxalate. But that's still a fairly small fraction, and the amount that converts to oxalic acid depends on your [vitamin] B status.

If you have enough B6 and B1, then it lowers the amount of it that becomes into oxalic acid. So, you see, differences in people if they're deficient in these [vitamin] Bs, relative to their own metabolic needs, which has some genetic influence, how low do you have to be to be deficient functionally can be a product of both environment and genetics. So, you got to have enough [vitamin] Bs to lower that. You have to have low inflammation. So, people with diabetes and obesity have higher levels of generalized inflammation, and so they're likely to even produce more endogenous oxalate. But the major source of internal oxalate is ascorbic acid or Vitamin C, just from people who are not in the studies. They don't use people who are taking Vitamin C, just from a normal lettuce and tomato hoagie sandwich for lunch.

Dr. Joseph Mercola:

Really? Is there a difference between synthetic ascorbic acid and whole food Vitamin C with respect to [crosstalk 00:36:24]?

Sally K. Norton:

Nobody in normal research at academia makes any distinction about that. They usually just use diet. So, they usually just, people are on a diet that has fresh fruits and vegetables as a way to judge the conversion of oxalate.

Dr. Joseph Mercola:

So, they're not looking at supplemental ascorbic acid.

Sally K. Norton:

Well, they do. There's lots of case studies of train wrecks from supplements and there's been some interesting studies using supplements and lots of case studies about problems with IV (intravenous) Vitamin C.

Dr. Joseph Mercola:

Really?

Sally K. Norton:

Yeah.

Dr. Joseph Mercola:

Why don't you share just some highlights, some of the highlights?

Sally K. Norton:

Well, let me tell you my personal story because I think the real world matters.

Dr. Joseph Mercola:

Sure, sure.

Sally K. Norton:

I had Vitamin C chelation because I was in the functional medicine world because I ran an NIH (National Institutes of Health) grant trying to bring these holistic concepts into the curriculum in mainstream medical education, also for nursing, dentistry, public health and pharmacy. We didn't get too far because that was around 2000, we were doing a five-year grant, and by 2000, Big Pharma had already captured academia and the minds. So, we didn't really change the curriculum in the medical school. But in that process, I have lots of colleagues in functional medicine and holistic healing practices. So, I started doing Vitamin C IV. I didn't know I had oxalate problem and he didn't either.

Dr. Joseph Mercola:

Was it 25 grams or 50?

Sally K. Norton:

I think he did 60.

Dr. Joseph Mercola:

60. Oh, my gosh,

Sally K. Norton:

I think 60 was the thing.

Dr. Joseph Mercola:

Oh, geez.

Sally K. Norton:

I didn't see a lot of benefits. But by the third time, I became harder and harder to stab for the IV needle because, now, my veins were ropier and rollier and would run away from the needle. That's fibrosis. So, my whole vascular sys-

Dr. Joseph Mercola:

Really? Fibrosis causes rolling veins.

Sally K. Norton:

Yeah. That toughness. I used to joke with the nurse, "I have gristle for veins."

Dr. Joseph Mercola:

Wow.

Sally K. Norton:

The last time they gave me the IV or one of the last times, the needle broke, snapped in two.

Dr. Joseph Mercola:

Gosh.

Sally K. Norton:

I'm very clear that what happened is she hit a crystal that was in a big blob of fibrosis. So, it was so stable that that oxalate crystal that had formed from where she had put the needle in some previous time, because it's the same nurse, Mary, at Dr. Pittman's office, right? She's the same nurse, same style of moving from each arm, and then hitting the same spot. So, she hit one of the crystals that had formed where the needles, where the IV had been giving me [vitamin] C. I only had [vitamin] C maybe 10 times. It wasn't like forever. Snapped the needle. Now, you know the doctor and the nurse took no notice of this side effect of the treatment that I was becoming more fibrotic and harder to puncture, and now I was breaking needles. Then later on when I told them, when I finally figured out what my real health problem was, was my sweet potatoes and brown rice and Swiss chard stuff, they're like, "Oh, fine. Your oxalate case. Next."

They have no interest in learning from their patient population the side effects of this because a lot of the side effects are delayed. In one of the studies, it was very clear in the '80s, this was done by a brilliant researcher, they gave people oral vitamin C supplements and they didn't see a huge increase in oxalate in the urine, initially. Now, other studies have shown that vitamin C raises oxalate in the blood and not the urine and it's crazy. So, where oxalate is converting, there's a whole mystery, still, where we need a little humility here in the face of promoting vitamin C and saying, ah, it doesn't matter, is that we don't know enough about the physiology of

even what the – well, the physiology would be where in the body that vitamin C is mostly suddenly turning into oxalate. Is it the gut lining? Is it the vascular lining? Is it the liver? We don't know even what enzymes might be involved or not, if you need enzymes or not, and what precursor molecules are formed before it becomes oxalate in the body. There's a lot we don't know.

So, it's humorous to say, "Oh, well, it's fine. All my patients are doing great on my vitamin C IVs," when you're not open to seeing the side effects. So, one of the studies demonstrated that just with oral supplementation for not all that long, once they stopped the Vitamin C, now the level of oxalate in the urine went way up after they stopped it. So, while the body's being assaulted by too much vitamin C, it's busy sequestering the oxalate that's forming and holding onto it and protecting the kidneys from devastation, from excessive oxalate load. Once you stop producing or eating too much oxalate, this holding pattern can let go, and now you see much higher oxalate levels in the blood and the urine after you stop it. They're not accounting for this and a lot of the research that has been done is kind of lazy about recognizing diet effects, vitamin C effects, and this delayed excretion process.

Dr. Joseph Mercola:

Now, we both know that vitamin C is metabolically reduced in the process to, or ascorbic acid is reduced to oxalic acid in the breakdown. But I don't think we mentioned that. We just tried to, but we failed to mention that. So, that's the reason we're talking about this, and also failed to mention that you have some academic credentials. You have a Master's of Public Health, an MPH. Is it from Cornell?

Sally K. Norton:

The MPH is from UNC (University of North Carolina) in Chapel Hill.

Dr. Joseph Mercola:

Okay. All right.

Sally K. Norton:

Cornell's where I did my nutrition program.

Dr. Joseph Mercola:

Okay. Perfect. So, you're a legitimate researcher and that's why you were involved with those studies with the NIH grant earlier that you discussed. I think the limit, if I remember your work previously, it was like 250 milligrams a day and below seems to be safe and enough to meet your nutritional requirements to avert any consequences of low vitamin C.

Sally K. Norton:

Yes. Yes. That would be the standard situation where you're not dying of sepsis.

Dr. Joseph Mercola:

Yeah. Yeah. Yeah. Or some other thing.

Sally K. Norton:

You might want to up it a little bit if you're dying of sepsis. But [crosstalk 00:42:52] cells have a limited capacity. You're trying to get [vitamin] C into the immune system and once they're full, they're full and the rest is just a mess.

Dr. Joseph Mercola:

Yeah, yeah. So, you're creating problems [crosstalk 00:43:02].

Sally K. Norton:

You want to titrate that out over the day. One big blob at one time is not as effective as smaller little bits spread out.

Dr. Joseph Mercola:

Yeah. Yeah. Typically, one of my favorite foods is acerola cherries. It has about 80 milligrams of Vitamin C and I've been known to take-

Sally K. Norton:

For how much?

Dr. Joseph Mercola:

Per cherry, 80 milligrams. Per cherry.

Sally K. Norton:

Oh. So, you only get one cherry three times a day. It's like a cherry on top of each meal?

Dr. Joseph Mercola:

I've been known to have a half a gallon in one day. So, like 10 grams of Vitamin C.

Sally K. Norton:

Interesting experiment on yourself.

Dr. Joseph Mercola:

Yeah, it is. It's loaded with some [crosstalk 00:43:41].

Sally K. Norton:

Let's not do this to you anymore. We want to keep you around.

Dr. Joseph Mercola:

Yeah. I know, I know. Well, we just survived Hurricane Ian and that basically destroyed my two Barbados cherry trees because they weren't staked down. So, sort of self-fulfilling anyway. But we tangented out into the vitamin C and I really wanted to go deep into the citrates as an antidote-

Sally K. Norton:

Yeah.

Dr. Joseph Mercola:

-which are really important. I take citrates every day, all three, magnesium, calcium and potassium citrate.

Sally K. Norton:

Excellent.

Dr. Joseph Mercola:

I seek to take it around the times of meals, which I believe from just discussing this with your earlier reading materials, is the most important time because it's just being absorbed. So, if you can chelate it out, prevent it from being absorbed into your system to begin with, it's the second best thing you can do from not eating it in the first place.

Sally K. Norton:

Right. You definitely need calcium and magnesium and so on with high-oxalate meals. But the bigger issue is this long-term toxicity because we all grow up on high oxalate foods because peanut butter is high, wheat bran is high, potatoes are high. These are just basic [crosstalk 00:44:47].

Dr. Joseph Mercola:

What about oat bran? Is that high too?

Sally K. Norton:

Oat bran is variable. Oats vary a lot and I don't know why, and there's only been a dozen tests of oats. But oat bran is the least high compared to the other brands. Rice bran is high, wheat bran's high.

Dr. Joseph Mercola:

Okay, okay.

Sally K. Norton:

But you're still messing with oxalate. So, the citrates in the minerals are especially important for this long tail of getting over the chronic illness of having an oxalate overload in your body. So, if you're past the age of 10 and grew up on standard foods, you've got some degree of deposits in your bone marrow, your joints, and your glands, and it's very idiosyncratic where it's going to set up where you've had tissue damage, inflammation, or the timing, when you ate and what was in the wrong state of physiology at the time it was passing by in the blood. So, it's variable how you're affected and the symptoms are really different.

We didn't get into all the symptoms either. They're very different in every person. But they involve digestive problems, neurological problems, which can be mood and klutziness and attitude or can be tremors and other neurological things like bad sleep is a really common problem with oxalate poisoning. Then there's all the rheumatological muscle pains like fibromyalgia type things and stuff that comes and goes and no one can tell you what's wrong with you. The main symptom pattern, by the way, just to finish getting back to that conversation, is that no one can figure out what's wrong with you and you seem okay according to tests. That's a classic oxalate situation and you look kind of good on the surface because you've been trying hard.

Dr. Joseph Mercola:

Did you struggle with fibromyalgia?

Sally K. Norton:

I certainly did. Most definitely. Most definitely.

Dr. Joseph Mercola:

[crosstalk 00:46:30].

Sally K. Norton:

I had it all. Then I thought I had all these autoimmune diseases because this sequestration or this collection or this pollution, you have nano- and microparticle pollution anywhere in your body, including your poor teeth and your sinuses and your eyeballs. Eyes are a really commonplace of oxalate accumulation. Nanoparticles are a big problem.

Dr. Joseph Mercola:

They open the COVID jab.

Sally K. Norton:

When it's an asbestos particle, wrecks your lungs. Well, oxalate is like asbestos in its toxicity level. It's just worse because it can form in any tissue, including your precious eyes. So, now you have a long-term problem where your body has been trying to hide these crystals.

Dr. Joseph Mercola:

What are the symptoms in the eyes?

Sally K. Norton:

It can be cataracts, it can be night vision problems. It can be, like me, I was the only one in my family who loved my vegetables. I'm one of five kids. My mother used me at the dinner table to shame the other children into eating their vegetables because I loved them. I'm the only one who needed glasses in 10th grade and needed bifocals by 20 years old.

Dr. Joseph Mercola:

Wow. Wow.

Sally K. Norton:

I totally blame the oxalates for that.

Dr. Joseph Mercola:

Interesting.

Sally K. Norton:

My night vision got better. I was starting to lose night vision as I was really falling apart and really struggling with driving at night in my 40s and on the low-oxalate diet, nighttime doesn't bother me anymore. So, at least that's improved. I've had three clients tell me they've reversed cataracts on this diet.

Dr. Joseph Mercola:

Wow.

Sally K. Norton:

I think cataracts come from lots of things and that's not a guaranteed outcome.

Dr. Joseph Mercola:

Yeah, sure.

Sally K. Norton:

But that is shock – hear the most shocking stuff that's really both horrible in the beginning and then amazing things that can recover because you quit eating chocolate. Like, “What?” We don't know this in our training. None of us get this. So, digging around and working with real humans in the real world has been quite revelatory.

Dr. Joseph Mercola:

All right. Before we get into-

Sally K. Norton:

We want to go back to minerals.

Dr. Joseph Mercola:

Yeah. But before that, just curious what your intake of oxalates are. Is it below 25 milligrams? Maybe you can share your personal journey because you had just massive overload and how long it typically takes for people to wean themselves off of this and help the body excrete that oxalate burden they have in their body, because it's quite some time

Sally K. Norton:

I think I just went through an oxalate dump recently that caused weird scabs. I have scabs on the back of each of my ear lobes and I cannot explain it other than I started getting cloudy urine

again, and that's the same time when I caught a head cold. During this dump I caught a little head cold.

Dr. Joseph Mercola:

Really?

Sally K. Norton:

This is in the middle of a dump and I'm in the beginning of my 10th year on the low-oxalate diet.

Dr. Joseph Mercola:

Wow. So, it's somewhat similar to linoleic acid removal. It takes years, years to get out of your system. So, better [inaudible 00:49:28].

Sally K. Norton:

Yes, which is a healthy thing, by the way, because if it all could come out in the first year, you'd be dead.

Dr. Joseph Mercola:

You'd be dead. You'd be dead. Yeah. So, the benefit of that is, I forgot what the benefit was, but-

Sally K. Norton:

Is your heart keeps beating and you didn't have a stroke.

Dr. Joseph Mercola:

Yeah. That's a good benefit.

Sally K. Norton:

Those are great benefits. I really trust the body's wisdom.

Dr. Joseph Mercola:

Yeah. For sure.

Sally K. Norton:

But people want to push. They want a quick resolution. "Let me get out of this fast, I'm going to biohack my way out of this," and you're just causing more trouble. Now, the biggest biohack is calcium because calcium promotes the clearing. Some people, they can't even tolerate the calcium because their body is so eager to upchuck this mess from its tissues that calcium gives it too much permission. Some people, I think they're so deficient in minerals. The long-term high-oxalate diet really is sucking you dry of electrolytes and minerals and you're really fragile with the minerals, and that's slowing down the excretion from the tissues. The expulsion from the tissues requires a certain amount of metabolic heft and some access to electrolytes so the tissues can do what they need to do. So, I find some people who've been really heavy keto for three

years and then they go full carnivore, which is a zero oxalate diet. So, they went from super toxic high oxalate diet to zero oxalate, which is a precipitous dive.

Dr. Joseph Mercola:

Whoa.

Sally K. Norton:

Some people get immediately sick with more rashes. For me, the rash didn't show up until I started the diet. You had the rash all along. I got innocent non-itchy rashes as part of the first wave of clearing. But I've had clients come to me and it wasn't until three years on carnivore where suddenly they are sick as a dog with oxalate poisoning because it's mobilizing. All of a sudden, they've got enough nutrients and whatever. Now, the body's turning it on. With my client base, I'm generally seeing somewhere around year two and a half to three on the low-oxalate diet.

They get sicker because now their kidneys are cleaned up, the urinary tract is like ready to take it. "Come on, guys. Give me more oxalates." The vascular system's probably recovering and just the general nutritional balance with electrolytes is getting better, and now in year two and three, you're getting into deeper deposits and difficult work with the immune system and it can cause gastritis and migraines and anxiety attacks and gout and all kinds of reactivities that is a sign of the immune system in there jackhammering out these oxalate crystals out of your tissues.

Dr. Joseph Mercola:

So, it can increase uric acid precipitation?

Sally K. Norton:

Yes, it increases uric acid. Uric acid is coming along to replace oxalic acid. I think sometimes, these uric acid stones are a compromise as a way of dissolving. I think the uric acid helps to solubilize oxalate, and then you get rid of oxalate out of your joints and end up with uric acid crystals instead, which are less toxic. So, we see a rise in uric acid levels on the diet. Eventually, we see an elevated kidney, or excuse me, but liver enzyme. So, the liver doesn't really get the frank crystals, although you see it in the gallbladder sludge. A good amount of that sludge and gallbladder is oxalates. I think the liver has something called lipid crystals forming. So, the liver can have this non-detectable form of oxalate and at some point, the liver starts healing and you see elevated liver enzymes, too. So, the path to healing is a little bumpy-

Dr. Joseph Mercola:

Yeah.

Sally K. Norton:

-and so scary for some of us who are way overdid it that we're so desperate to have other people not be us and not do this to themselves.

Dr. Joseph Mercola:

Yeah. I've had high uric acid levels for quite some time when I started this and I didn't realize it was related to that, but it's now starting to come down. But I couldn't understand why my uric acid was elevated.

Sally K. Norton:

You were clearing oxalate.

Dr. Joseph Mercola:

Wow. I had no idea.

Sally K. Norton:

So, look for cloudy urine, if you have really great kidneys, you'll be able to produce this cloudy urine. Now, the other signs that your blood levels are going up on in oxalate while you're clearing them is tartar behind the teeth. Because at nighttime is when the body does its housekeeping. So, overnight, you're more likely to have high oxalate levels and in the morning, you might see a little bit of a line of gunk at the base of your tongue.

Dr. Joseph Mercola:

Oh, geez. So, it's oxalates that's causing it, which makes perfect sense.

Sally K. Norton:

Yes.

Dr. Joseph Mercola:

[crosstalk 00:53:48].

Sally K. Norton:

Grit in the eyes. Some people wake up with their eyes glued shut or with white-

Dr. Joseph Mercola:

Oh, geez.

Sally K. Norton:

-gunk stuck to their – that's coming out. So, those are all signs. The gritty stools happen, hemorrhoids occur, or burning stools will occur. This can all be oxalate coming out of the body.

Dr. Joseph Mercola:

So, you had mentioned the relatively severe exacerbation that many carnivore people experience after being on the diet for a while. I'm wondering if you believe that, and this will tangent this right back to the minerals, if you believe that they could ameliorate or eliminate that process with these citrate minerals.

Sally K. Norton:

Well, like I said, sometimes when you get the minerals, you get what you need to dump more. We call dump because Susan Owens was a gal who's done some great work with autistic folks who coined that term for when the body is clearing oxalate in a big wave and it creates really dramatic symptoms and obvious, like crystals popping out of people's skin and feces and so on. So, I would say in some ways, just doing the diet in the beginning is almost safer than adding the mineral, the calcium at least, even though you need the calcium, the most critical binder of oxalate, the most critical therapy. But if your system's not ready for it, it's better to leave it in these little granulomas and in these little buried, nasty, toxic, what I call-

Dr. Joseph Mercola:

Reservoirs,

Sally K. Norton:

-super fun sites, little micro super fun [sites] sitting around in your tissues. The immune system has wrapped them up and tried to keep them quiet. So, they may be disrupting the structure of that tissue and making your bones a little goofy. But it's better than having so much in your system that you're quite sick or risk of arrhythmia. People end up in the emergency room due to arrhythmia and big spikes in hypertension because the ability for the body to control these things is lost when the electrolyte crash is happening.

So, this is why we're talking about minerals with this chronic deposit problem. So, you got nine, 10, more, even 15 years of oxalates coming back into the system that continues to drain you of minerals. So, the adding the potassium, even sodium, magnesium, calcium, this helps the body address this collapse in the electrolytes' availability that's happening in local places that might be affecting the pacemaker or the kidneys or something. It also, you're replacing this long deficit where you have an electrolyte deficit, you have a mineral deficit in the body, you have to correct that. But you're also continuing to lose minerals during this clearing decade and you have to continue to replenish them. So, in a way, you're just addressing the side effects of the toxicity.

Dr. Joseph Mercola:

But I thought there was some special, additional benefit of using the citrate molecule?

Sally K. Norton:

Yes. [inaudible 00:56:47].

Dr. Joseph Mercola:

So, we can go into that. Then also, as a source of calcium, if you could discuss or give your comments in perspective on milk as a source of calcium. I've actually become re-enamored with milk after beginning to study Ray Pete's work and have actually started drinking about a cup and a half of raw milk a day now because there really wasn't a lot of calcium in my diet. I just realized it. So, it seems to be a good strategy.

Sally K. Norton:

That's the best. That's been the traditional nutrition is, get people to do dairy foods in order to get calcium because the only other good source is sardines and salmon bones.

Dr. Joseph Mercola:

Yeah.

Sally K. Norton:

You can't eat so much cabbage. You get enough out of cabbage, and there is some bioavailable calcium in some of these low oxalate vegetables. But that doesn't mean you're going to eat two heads of cabbage a day.

Dr. Joseph Mercola:

Right, right, right. For sure.

Sally K. Norton:

Sure. So, canned sardines are our good friend too because literally, even though it's canned and all of that, literally the fish oil is so beneficial for rebalancing so many-

Dr. Joseph Mercola:

Well, it's a whole food source of omega-3. It has additional components like resolvents and protectants, which are not available in omega-3 supplements typically.

Sally K. Norton:

Exactly. The whole fish.

Dr. Joseph Mercola:

Unless it's extracted from a whole food, like cod liver can be.

Sally K. Norton:

If there was a superfood, it would be a sardine and some roe and some bone marrow. It's like these kinds of weird foods that people don't eat. You've got to have dairy food for calcium if you're not eating sardines or both, and then you need supplements. We really do have to up it to the point where a lot of us need some supplements to-

Dr. Joseph Mercola:

Yeah. So, let's go into the citrate now that I diverged [inaudible 00:58:14].

Sally K. Norton:

Citrate is so good. Oh, my gosh. It is your friend. So, the liver turns some of the citric acid, which is in lemon juice. Lemon juice is a great source of citric acid and I use lemon juice as a therapy and recommend people get a half a cup of fresh lemon juice, a quarter cup in the morning, quarter cup at night, and down it as a shot, or you can make a homemade lemon fizz. It's like an Alka-Seltzer Gold where you add the potassium bicarbonate and/or sodium bicarbonate and you can alkalize because what happens is the liver turns some of the citric acid into bicarbonate, and alkalization helps so much because oxalate's creating an acidic metabolism.

Directly, oxalate is acidic. That's partly why it breaks down connective tissue, acidity breaks down connective tissue. Also, excuse me, the immune system engagement that is required for you to take oxalate out of the body is acidifying.

When you don't feel good because your system is busy doing this nasty housekeeping and taking away this toxic waste out of your body, you go in acid, and the easiest answer is to juice a lemon or take Alka-Seltzer Gold or to use these citrate supplements. So, citrate helps to alkalize, which is really great because now the kidney cells have an extra citric acid they can release from their own physiology into the urine, and that's a critical factor. If you have low citrate in your urine, you're at risk for kidney stones because the citrate prevents us from getting the stones and helps to break down stones.

So, literally, even in the tissues, I believe citrate's attracted to the calcium and the calcium oxalate molecule or crystal nanocrystal or microcrystal, it attaches to the calcium side of the crystal, and it has an electromagnetic pull on that calcium that weakens the bond between the oxalate and the calcium. So, now you have a three-way love affair where the two molecules are fighting over that calcium and the citrate wins. What that does is it turns the oxalate molecule, or excuse me, the crystal of calcium oxalate, which is firm like quartz or glass, it's very tough, and it turns it into more of a chalky substance that's easier to break down.

Dr. Joseph Mercola:

So, I didn't realize that the citrate actually helps preserve the citrate in the body, specifically in the kidney, so that it can neutralize the urine and it doesn't have to waste it on other functions.

Sally K. Norton:

Right. Right. It's really because of the correction in the pH in cells. That's why we see vegetable consumption as protective because the extra alkalizing effects of them, but you don't need the vegetables to do that. You just need to get enough minerals. Minerals and citrate is the alkalizing effect that leaves the kidneys with enough reserve to be able to sacrifice some citrates and produce a nice citrate-filled urine that you need to prevent stones.

Dr. Joseph Mercola:

So, I found from personal experience that the powders seem to be more cost effective and relatively easy. So, I take powders twice a day that I have compiled for me.

Sally K. Norton:

I do like to say, though, with the potassium, if people have got irritation from potassium, take it with the calcium. The calcium protects you from the irritating effects of the potassium citrate. Also, the potassium, we're trying to get it inside your heart muscle cells and your bone cells and rebuild your bones. We want it in the cell. It's an internal ion, not an external one for cells.

Dr. Joseph Mercola:

Intracellular.

Sally K. Norton:

Exactly. So, that, to get it in the cell you need a little insulin. Right? So, with meals is an ideal timing for potassium because now the cells can pick up nutrients because there's a little bit of an insulin reaction. We don't want to have zero insulin all the time because you'll starve yourselves. You need an occasional little spike of insulin. Ray Pete would probably agree.

Dr. Joseph Mercola:

A hundred percent. Yeah. I had had no idea how much of a problem low-carb is and can be, and I didn't understand the mechanism, which was-

Sally K. Norton:

Even with oxalates, we see-

Dr. Joseph Mercola:

Oh, it's huge.

Sally K. Norton:

Just a couple little studies demonstrated that chronic low-carb is stressful on the liver and increases oxalate production in the body.

Dr. Joseph Mercola:

Yeah. Sure. All right. Well, thanks for – so, the tips on the – if you were going to use a powder form of the citrates, how much? Like a quarter teaspoon twice a day with meals?

Sally K. Norton:

Well, each one is different. I like to use the calcium citrate especially at bedtime and start people at bedtime because overnight is when you most need that to deal with the [crosstalk 01:02:55]. Calcium and magnesium both help to soothe the nervous system and improve sleep. So, I start with a dose at bedtime and then repeat one in the morning and then add two doses anywhere in the day with calcium. So, calcium, I like to spread out four times a day. With magnesium, usually twice a day is enough. With potassium, I like to include it in my drinking water. So, I'm sipping on it, usually, with a little added salt and the little vinegar.

Dr. Joseph Mercola:

But you want it with calcium citrate too that, you just mentioned.

Sally K. Norton:

And/or take it with the calcium and/or take it with meals. So, I take capsules with meals because I find that remembering to do my few little caps with each meal is a habit I can maintain. I prepare a half gallon of water the night before that's been enhanced. I have formulations in the book and you can also come to a Zoom class and get a whole lot of handouts that explain this. We try to get people coached up on figuring out how to customize it because everyone needs their own personal approach.

Dr. Joseph Mercola:

Yeah. Yeah. For sure. So, dosage wise, is it about a quarter teaspoon [crosstalk 01:03:58]?

Sally K. Norton:

Yeah. It varies for each one. So, let me think about the volumes. I wish I had it right handy so I would say it correctly. But we can put it in the notes. I'd rather put it in the notes than misspeaking.

Dr. Joseph Mercola:

Sure, sure. That's fine. It's hard to remember everything, for sure.

Sally K. Norton:

Yeah. Well-

Dr. Joseph Mercola:

All right.

Sally K. Norton:

-for sure.

Dr. Joseph Mercola:

Quick question and personal history is do oxalates contribute to lipomas?

Sally K. Norton:

To lymphoma?

Dr. Joseph Mercola:

No. Lipomas.

Sally K. Norton:

Lipomas. Yes. I'm-

Dr. Joseph Mercola:

[inaudible 01:04:26].

Sally K. Norton:

-seeing people come to me with them and get rid of them with the diet.

Dr. Joseph Mercola:

That's what I thought because no one know what causes lipoma. Obviously, it's benign. It's a benign fat tumor. But what the heck causes it? Something disrupted it.

Sally K. Norton:

And cysts. Some people are cyst-y in nature, and this is, I think, a little bit of a genetic thing and they get a lot of these weird cysts in all kinds of weird places on the vulva and the liver or all over, and that all resolves with the low-oxalate diet.

Dr. Joseph Mercola:

Geez. So, it just disappears. It's pretty amazing. All these bizarre previously unknown ailments that we suffer with, so a simple solution. Actually, it's not a simple solution. It's actually a very arduous and challenging strategy to implement. But the benefits are beyond worth it.

Sally K. Norton:

In the beginning. Yeah. You have to wrap your head around it and kind of reformulate what's a good food.

Dr. Joseph Mercola:

For sure. It takes a lot of effort and you're going to be ostracized by your friends and family, but you're going to win in the long run. It's just like when you ask a farmer what the best time to plant a tree is, you know what time they say?

Sally K. Norton:

Yesterday.

Dr. Joseph Mercola:

Yesterday. Right. So, that's when you need to start. That's right. Because it's such a long process. It's going to take you 10 years. What's your typical window, because you're probably the leader in the world on this, the window that you find that most people start noticing improvement? Is it two years, three years, four years?

Sally K. Norton:

Sometimes, it's three days.

Dr. Joseph Mercola:

Oh, three days. So, there's [crosstalk 01:05:56].

Sally K. Norton:

There's a honeymoon period and they're usually like, "Ooh." All of a sudden, there's a shift. But then if the clearing pops in, suddenly you feel just as bad as ever and you think, "Oh, that wasn't it." That's what happened to me. I tried this in 2009 and I didn't know that you would get a revisiting of these same symptoms because you're full of this stuff. Just because you stop eating it doesn't mean you aren't still high oxalate. That was an unknown thing. I learned this through the Vulvar Pain Foundation, who is helping people with pelvic pain and particularly vulvar pain, which is [a] quite evil problem to have, and the medical solutions are more evil than that. They didn't know this. They didn't realize. They talk about flare-ups, but they hadn't really recognized this bioaccumulation problem because it just isn't obvious. You have to dig around in the medical literature to actually see that.

So, I didn't know that. So, the key thing you need to know is expect a little honeymoon period. For some people, it's five days. For some people, it's two weeks. For some people, it's three years. Then if you suddenly get sick and you've been consistent on a low-oxalate diet, chances are it's oxalate clearing and that's why you need to start knowing to look for the gritty eyes, the tartar, the gritty stools, the burning rectum, the diarrhea or constipation, which is a form of muscle spasm. You also could get other tremors and twitches that are signs of electrolyte and the way the nerves are struggling with their electrolyte control and their control of calcium, because actually, taking oxalate out of a cell to get rid of it is much more toxic than it coming in. So, the process of it leaving can have many more obvious symptoms than it had on the way in.

Dr. Joseph Mercola:

So, do you find generally it's wise to prophylactically augment with the citrate minerals to-

Sally K. Norton:

Yeah.

Dr. Joseph Mercola:

-prevent the relapse that is so frequently observed?

Sally K. Norton:

I find potassium and the citrate generally in the lemon are all really, really important and helpful. Calcium is really important. It's just that when and how much is very much particular to the person. So, there's a lot of customization. So, that's why I focus on comprehension of the problem. So, you can figure your way out with your body the right solution. Then you can come to our community and to me directly if you need some serious coaching.

Dr. Joseph Mercola:

Yeah. Well, I was going to go into that because obviously, the best way to learn about this is your new book that is available, the only book in the world written about oxalates. So, congratulations on [inaudible 01:08:33].

Sally K. Norton:

Full of stuff in there for you. If you're a library geek, I shared some of my library geek-isms in here. There's like 400 of the references in here to get you started.

Dr. Joseph Mercola:

Yeah. Well, I think it's the rare person who's not going to benefit from this. I'm sure they're out there. For whatever reason, they have a SNP that just allows them to excrete oxalates and they're coincidentally just not attracted to high-oxalate foods. But that is a very uncommon scenario. So, you can almost guarantee that this is going to impact your health favorably if you integrate this into your lifestyle. So, the book is one way to start. Obviously, you can listen to this. You can listen to other of Sally's interviews. But for those who are struggling with serious medical issues and may need more customized, individualized approaches, you had mentioned that you have

Zoom calls and other strategies, and I wonder if you can elaborate on those and perhaps mention if any other clinicians are trained in what you're teaching that they could perhaps consult with.

Sally K. Norton:

Well, we're getting there. I'm going to be putting out a video course. We can get into the nitty gritty earlier in 2023. Hopefully, it'll be out by March, hopefully sooner.

Dr. Joseph Mercola:

All right. Good.

Sally K. Norton:

Then I'll do an add-on for providers and help bring them up to speed and I'll be speaking at more provider-type conferences to try to raise awareness. There are various people popping up around who have some awareness and certainly full acceptance of oxalate toxicity as a legitimate clinical problem that you're going to see frequently in clinical practice. But I can't, at this stage, say for sure who to recommend. But hopefully, this time-

Dr. Joseph Mercola:

So, how do they find you if they want to?

Sally K. Norton:

I'm at SallyKNorton.com online. It's pretty easy, sallyknorton.com, and on there, you can sign up for a Zoom group. We keep them small so you can interact with people and meet people that are on the journey with you and do some teaching there. Eventually, when the courses out, we'll be able to just do more of the chat and share and talk about individual situations as a way to get into the material.

Dr. Joseph Mercola:

Yeah. It's amazing because there's support groups to help. There's no question. This is an intervention that it's not easy because there's so many complexities and subtle nuances that you-

Sally K. Norton:

You have to be patient with the process of learning it and just not be in a big rush. Be a human being and stumble your way forward through this and be fine with that process because it's good to go gradually, anyway.

Dr. Joseph Mercola:

Yeah. Yeah. Fortunately, that's your benefit. Wow. So, I am just beyond thrilled that you finally put this book together and compiled this and really appreciate your diligence and perseverance in compiling this information and using your personal health journey as a method to help so many more people, impact so many people's lives. I really believe almost everyone watching this needs to integrate this into what they're doing. It's just not a wise strategy to ignore it. You've got to take this seriously. This is the real deal. This is more than likely negatively contributing to your health, unless you address it in some effective, long-term way.

Sally K. Norton:

That, people, is an unpaid endorsement of a really important message.

Dr. Joseph Mercola:

It is. A hundred percent. Yeah.

Sally K. Norton:

Couldn't said it better myself.

Dr. Joseph Mercola:

Yeah. Yeah. So, the book, it's not many times where I interview an author where they have created such a magnificent graphic right on the right side of their – but this is the book.

Sally K. Norton:

Thank you, Random House, for that cover.

Dr. Joseph Mercola:

Oh, they did? Yeah.

Sally K. Norton:

Yeah. They came up with two other designs I wasn't too keen on and then they kept listening to me. They worked with me. That was a beautiful thing they did, and they came up with this, which I'm very happy about.

Dr. Joseph Mercola:

It's very clever. These are really true artists and they're creative and innovative and I like what they did.

Sally K. Norton:

Pre-order the book before the 3rd and you can get the bonus, even if you order on the 5th.

Dr. Joseph Mercola:

What's the bonus?

Sally K. Norton:

It's a PDF through my website of 12 recipes, 12 low-oxalate recipes, because we took the recipes out of the book because the book was too big. So, the recipes came out. So, there's a few of them in a pre-order bonus. So, pre-order it so we can get that bestseller bump on the 3rd. We need 6,000 books sold by the 3rd in order to get a bestseller bump. Right now, we only have like 2,800 pre-orders.

Dr. Joseph Mercola:

Okay. So, folks-

Sally K. Norton:

We need to double that folks. So, if you time this two days before, this interview will probably bump that up to [crosstalk 01:13:12].

Dr. Joseph Mercola:

Yeah. We need to help Sally out here because again, this is such – I have no financial interest in this at all

Sally K. Norton:

Me neither. I've already spent, what, \$30,000 writing the book and I make 90 cents a book.

Dr. Joseph Mercola:

Yeah, yeah. So, the issue here is helping people, yourself, your families, the ones you love, not even directly, but because increasing the awareness and the consciousness of the community is going to help so many people, you have no idea. The information I send out, and it's helped hundreds of millions of people all over the world, and when I go and lecture, some of them come and tell me the stories. So, you can do the same thing by participating in the process. It's such a joy to be able to help others. So, help out.

Sally K. Norton:

A lot of people are late adopters. They want other people that they respect to believe in this before they're going to consider it as a possibility.

Dr. Joseph Mercola:

I really love the title of the book. It is tough. I've written 17 books and it's tough to come up with a good title, and that's an excellent one.

Sally K. Norton:

I tried out about 80 titles. Luckily, I worked a little bit with a really great book coach to get me to finish this thing on time and to make sure it was good for readers. She helped in the end. We were just kind of pulling the title out at the end as I submitted it and working with the publisher too. We came up with this as a team, but I give her the most credit for coming up with this because I am not into fear-mongering and I would find this a little bold for me. I'm kind of a timid library geek. So, I'm so glad that I worked with a team to help me write this book.

Dr. Joseph Mercola:

Yeah, because that is really one of the criteria for an outstanding title is it needs to be relatively concise and potent, and you couldn't be more accurate in identifying the issue because it's these ostensibly superfoods, health foods that are making your health worse, not better. And it's [inaudible 01:15:11]-

Sally K. Norton:

It's so tragic and unfair. I have a sense of fairness that gets deeply violated by that.

Dr. Joseph Mercola:

Yeah. Yeah. I know. It saddens me extensively because people who are invested and committed and doing the hard work to try to get healthy by doing what they think is healthy and then are sabotaging their health by doing these things, just like you did in your journey. There's no reason you have to repeat someone else's mistakes. Why don't we learn from people who followed before us?

Sally K. Norton:

Why not? We made all the mistakes to be vegetarian and vegan and high-oxalate and thinking sweet potatoes were saving us. Please don't do this to yourself.

Dr. Joseph Mercola:

Yeah. Yeah. So, give yourself a break and improve your health and the health of your families and those that you love. So, I would definitely include this for holiday gift for everyone because I don't recommend it normally that you have some – but one of the strategies in preparation for this, the global cabal's takeover and movement towards slavery is they really are going to progressively impair the functionality of the internet. It's just the useful information is just going to be removed. Thank you, Google. They started a long time ago. They started, and they took me off the internet, essentially, the search engines, which is the key to the internet. You will not be able to find this. Then even if you could find, most likely they're not going to take sites down, but they might. You never know. So, this is the reason why you want a print copy. So, this is going to disappear. So, I'm just so delighted that you put this out, finally.

Sally K. Norton:

Well, and the more people purchase the book, the more we have the bots on our side saying, "Hey, there's activity. There's sales over here. This might have some commercial benefit to somebody," not to the author. But then we get a conversation started that needs to spread.

Dr. Joseph Mercola:

Right. It needs to change [[inaudible 01:17:17](#)].

Sally K. Norton:

We have people we love, we have movie stars you know, we have athletes you know who are starting to complain about these very health problems and at the same time, bragging about their spinach smoothie and their peanut butter habit.

Dr. Joseph Mercola:

Yeah. Unfortunately, it's been overshadowed by the COVID narrative and pandemic catastrophe that's resulted.

Sally K. Norton:

Yeah. Which has increased our vitamin C use, which is making the oxalate problem even worse.

Dr. Joseph Mercola:

Yeah. I am not a huge fan of taking regular vitamin C unless you're sick. Then it really is, in my view-

Sally K. Norton:

That's when you need it.

Dr. Joseph Mercola:

-it's basically a pharmacomimetic. It's a drug-like.

Sally K. Norton:

It is. It's a chemo drug in some places, but it has the same problem as all the other chemo drugs of being toxic and having toxic side effects and potentially increasing cancer down the road.

Dr. Joseph Mercola:

For sure. Yeah. So, we've got to be careful. There's a lot of people promoting it and it has its place, but it's not a universal antidote, for sure. All right. Well, thank you, Sally. You'll keep up the great work. I look forward to seeing you sometime in the future and hopefully, I'll seek to encourage others who are influencers to help spread the message about this because it's a really important topic.

Sally K. Norton:

What a wonderful joy it is to work with you and see this brilliant mind catch on to this so important topic. I can't tell you.

Dr. Joseph Mercola:

All right. Well, thanks.