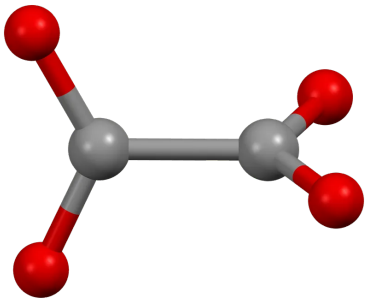
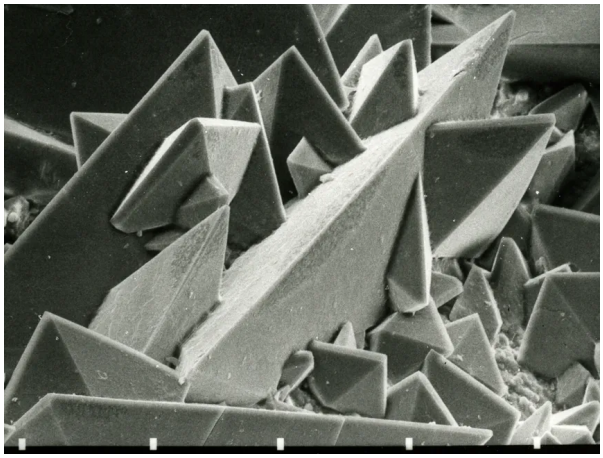
Oxalates:

What are oxalates?

Oxalates are small molecules of 2 carbon atoms and 4 oxygen atoms, making them very acidic and seeking minerals, especially calcium to bind to, making the very sharp crystals as seen in the electron microscopic picture on the right. This is the image of the surface of a calcium oxalate kidney stone. Some plants produce these in various concentrations to deter animals from eating them. It's their protection. Some very toxic plants, like rhubarb leaves, are so high in oxalates that they are known to be poisonous to people. But even the red parts that we eat are high enough to accumulate in our body over time.

On left: Molecular Structure - 2 carbons and 4 oxygens. It's an acid with a strong affinity for calcium and other minerals.
On right: An electron microscopic picture of the surface of a calcium oxalate kidney stone.





Other plants product toxins in defense of being eaten.

Purpose of this talk:

- Many people have chronic inflammation or health problems, and we don't know why. We are looking for a cause, but just can't figure it out. I think I've found a possible cause that most doctors don't know about and even alternative sources of information don't usually consider.
- We can temporarily make minor changes to our diet. In a matter of a week or 2, we can determine whether lowering our oxalate intake improves our symptoms.

Oxalates Can Cause Many Symptoms *(Mine are in italics)*

Digestive: IBS, GERD, Constipation/*diarrhea*, Trouble swallowing, Bloat, Cramping, pain.

Metabolic: Hypothyroid, other low functioning gland, liver problems, diabetes, metabolic syndrome, chronic or recurrent infections, Acidosis, *Fatigue,* Cystic breasts, *Brain fog,* Weakness, Cold hands and feet, slow healing

Immune: Autoimmunity, allergies, asthma, fibrosis, sensitivities, mast cell activation syndrome, rashes, *itching, pain,* migraines, food intolerance, hot flashes, flushing

Cardiovascular: Atherosclerosis, Vasculitis, Raynaud's Syndrome, cold intolerance, veins hard to stick, stoke, heart attack, COPD, blood pressure issues, heart arrhythmias

Neurological: Pain, burning, oral sensitivity, *poor sleep,* headaches, autism, light and noise sensitivities, hiccups, mood issues, *cognitive issues,* poor physical coordination, clumsiness.

Joints, muscle, bone: Arthritis, gout, osteopenia, fibromyalgia, excess tooth tartar, jaw pain, TMJ, Carpal tunnel, gum disease, *Muscle spasms,* stiffness, *weakness, unstable joints,* frozen shoulder, injury is slow to heal, tightness or looseness in fascia and joints, weak bones, loose teeth, swelling, bleeding gums.

Skin: Scleroderma, dermatomysositis, Ehlers-Danlos Syndrome, Frail skin, white or red or *purple sores,* sun sensitivity, bruising from within, *rashes,* eczema, *peeling*

Eyes: Sties, deposits, *eyelid redness,* vision problems, *crusty secretions,* hazy cornea, watery, dry, or *itchy eyes*, cataracts

Ears: Tinnitus, vertigo, Meniere's syndrome, hearing loss, *itchy ears.*

Pelvic: Genital pain, vulvodynia, sexual dysfunction, heaviness, pressure, soreness, itching, sharp pain, stinging, in pelvic area (male or female organs).

Urinary: Kidney stones, excessive frequency or urgency, burning, cystitis, urethral pain, incontinence, *cloudy urine.*

My recent experience with oxalates has led me down a path I didn't know existed. I've heard people with kidney stones should avoid eating spinach and almonds because they contain oxalates, which can combine with calcium to form calcium oxalate. But I didn't think much of it, since I didn't have kidney problems and didn't understand what oxalates are. I also brushed of the idea of plants containing toxins, since many including spinach are suppose to be healthy.

Before my carnivore diet. I thought I was healthy, but did have painful feet, especially in the morning or after I walked a lot - I blamed Willow for making me walk too much. I also had itchy ears, which I thought was a chronic infection, so I was using antibiotics in my ears.

Why I went on the carnivore diet. This seemed to be the answer to my carbohydrate cravings, which caused me to fall off the keto diet. In recent years, keto was the only way I could lose weight or even stay the same. Years of eating carbs and just controlling calories had slowed my metabolism and made me more insulin resistant and gain weight. If I ate a few carbs on keto, I would be craving more. Many stories, including some from doctors, related overcoming carb addiction with the carnivore diet, eating essentially no carbs. Many success stories included curing autoimmune

diseases and tremendous weight loss. As I started carnivore on January 4 of this year, I felt great, with no hunger and unprecedented weight loss.

Week 2: I started getting watery diarrhea. Some carnivores reported having diarrhea for the first 2 weeks, so I was able to deal with it.

Week 3: I got massive inflammation with discharges from my eyes, ears, skin and I developed severe joint inflammation. In the morning, I could barely walk. My whole right ear swelled up and the inflammation went into my skull. My brain felt swollen and I couldn't think and wanted to sleep a lot. I searched for carnivore diarrhea and there was a mention of oxalate dumping and diarrhea from that. As I pursued this topic, it was evident that I was in the middle of an oxalate dump. The body detects no oxalates in the blood and decides this is a good time to dump all of the oxalates that have accumulated over my lifetime.

Why this only happens to some of us: It depends on how many oxalates you accumulate over time. Most plant toxins like gluten, lectins, solanine from nightshades, etc can be broken down and eliminated. Oxalates don't break down. We can eliminate about 150 mg/day and the rest go into storage in various places in the body. So it depends on age, the diets over time, and the individual's ability to eliminate oxalates.
Some people get calcium oxalate kidney stones, but they can accumulate in any organ or joint in the body and eventually cause inflammation. Many of us ignore the mild symptoms or dismiss these as old age and just take anti-inflammatory drugs. It doesn't help that most doctors don't recognize oxalates as a problem.

Why me?:

- First of all, I'm 72 and have had a long time to accumulate oxalates.
- I went vegetarian for 3 years and ate a lot of grains and beans.
- I've always loved chocolate.
- I've been on and off keto for the past 15 years, eating many nuts, chocolate, salads with high oxalate veggies, chia seed chocolate pudding, and using almond flour as an alternative to wheat flour.
- All of these foods are very high in oxalates. So, I had plenty to dump.
- My right ear swelled the most because I have 2 large fillings in my right jaw that are made from calcium oxalate and have been there for 52 years.

Recovery:

1. The first thing I did was eat a handful of nuts and chocolate to get my blood levels up to stop the dump. This reduced the severe symptoms.
2. I ordered Sally K Norton's book, Toxic Superfoods, and listened to her interviews. I got the list of high, medium and low oxalate foods and what supplements to take.
3. I added low oxalate foods to my diet: Bananas, apples, cruciferous veggies, onions, saltines, and white rice.
4. I made a concentrate of B vitamins, electrolytes and lemon juice that I add to my water. **Recipe for each day:** Benfotiamine 150 mg, B6 100 mg, Biotin 5 mg, Salt ½ tsp, Potassium ½ tsp, Cal/Mg ½ tsp, Lemon Juice 2 tsp, 3 c H20.

5. Using the AquaDetox footbath and Epsom salts baths for detox through the skin. I rub epsom salts on the bottoms of my feet and in my ears, since that's where the oxalates seem to exit.
6. It's working so well that I have no symptoms if I eat very low oxalate foods. My feet feel great and my ears don't itch at all. If I eat too many crackers, there is some pain and itch, but then I know to cut back.
7. I did go out to lunch and ate a couple small potatoes and my right ear swelled on the drive home and that night it was painful. This was the only really painful experience since I went low oxalate.

Dr Berg - best, most concise video on the subject. (I just found this video.)
https://youtu.be/eH9llWp0ixs?si=X1H6hmSeiea4xWN_

Here are the notes from his video:

Top foods high in oxalates: Spinach, Rhubarb, Almonds, Chocolate, Buckwheat, Wheat, Beans, Soy, Potatoes, Beets and tops, Swiss chard, Star fruit, Raspberries, Black pepper, Black tea

Nuts highest in oxalates: Almonds, Brazil nuts, Hazelnuts, Cashews, Pine nuts

Nuts lowest in oxalates: Coconuts, Peanuts, Pistachios, Macadamia nuts, Walnuts

Factors that might cause increase in Oxalates:

- Consuming excess ascorbic acid, glycine, or xylitol.
- Fat malabsorption due to a bile deficiency
- Some people develop gout as they age due to an increase in iron and inflammation. If you feel better after donating blood, this might be a factor.

How to neutralize oxalates:

1. Drink plenty of water. Add lemon and electrolytes, especially potassium.
2. Consume calcium-rich foods - dairy.
3. Take vitamin D3 and K2
4. Take vitamin B6 - Pyridoxal 5-Phosphate (P5P or PLP) is the best form. Do not take pyridoxin - it can cause a deficiency of the active form.
5. Take B1 (Thiamine or Benfotiamine)
6. Get plenty of vitamin B1 (Biotin)
7. Consume a moderate amount of protein.
8. Consume foods low in oxalates.

Liz:

She spent time with people who have gout, and they were taking gout meds (colchicine). She started getting gout symptoms in her big toe, and colchicine didn't help.
She discovered that instead of having gout caused by uric acid, oxalates could cause the same symptoms and are high in spinach. She had been eating spinach for breakfast every day.
When she stopped eating spinach, and her toe got better.
She also takes high doses of vitamin C and collagen, which contains glycine.
She has bile insufficiency, so was taking bile acids.

All of these could be making the oxalate problem worse, so she may try eliminating some of the practices and foods to see if her symptoms further improve.

Nancy: Mold is commonly in coffee and she spends a lot on mold free coffee.

Connie: I drink Fresh Coffee from a co-op I visited in Guatemala. They roast it and send it the next day, so I get it just 2 days after it's roasted. It's not too expensive when I buy 5 lb and get free shipping:
https://www.dlgcoffee.org/

Liz:
How about absorption? Are raw vegetables safer because they don't break down until the colon? Research on rats and mice and they eat their poop, which recycles the nutrients that have been processed by the microbes in a more available form. So this research is not valid for bioavailability.
Vitamin C - she found that the research showed it did not cause kidney stones.
She uses hot epsom salts baths
She shines the red/IR lights that are used on baby chicks on her skin for hours/day. These are cheaper than some that are sold for healing purposes. She likes to shine three of them on the floor shining on her legs for an hour at a time. This is a good form of detox. It makes her sweat.

Dee: She can't sweat, which makes it difficult to detox. It runs in the family.

Liz: Iodine helps horses that don't sweat. (Additional information) Thyroid deficiency would affect ability to sweat, so that would be the easiest thing to check first. Lab tests for thyroid function have led a lot of people down the wrong path. The best test for thyroid function is basal metabolic rate, which is measured as your armpit or oral temperature BEFORE you get up in the morning. If it's less than 97.2, you are low thyroid. All this is just off the top of my head, and is worth double checking. If you are hypothyroid, iodine might or might not help. But taking natural thyroid replacement, NP thyroid or Armour thyroid, is probably the easiest way. Synthroid is not as good because it doesn't have the active form, which is T3.
Iodine is good for many things besides the thyroid - receptors are many places in the body. So the improvement in sweating doesn't necessarily have to do with the thyroid.
Once you know your thyroid hormones are at a good level, and you still don't sweat, check into more information about iodine. I collect information on my substack. You can ask questions in the comment section of my substack. But nutrition is only one possibility.
https://pharpercheron.substack.com/p/cells-gels-and-iodine
https://pharpercheron.substack.com/archive

Also read A Midwestern Doctor, especially his stuff about zeta potential, since that might be directly involved with sweating
https://www.midwesterndoctor.com/p/an-index-of-the-forgotten-side-of

Liz points out that the nutrients in raw vegetables are not very bioavailable in humans. Mice and rat studies are flawed, because they eat their poop and can absorb nutrients from food that has been digested in their colons. The bacteria in the colon make as well as free nutrients from food, but the

nutrients are absorbed in the small intestine. The nutrition studies done in rodents don't take this into consideration. The question is: Do we absorb as many of the oxalates if the veggies are raw?

Nancy has had kidney stones in the past, but discovered that calcium hydroxyapatite increased the chance of kidney stones. She then started taking magnesium citrate. She takes **Ostinol** by Regenerative Tissue Science. for her osteoporosis - it's partially hydrolyzed collagen including the bone morphogenic proteins. Got rid of spinach years ago because she heard of the oxalates.

Connie: Building the collagen matrix as a bone heals enables the bone to rebuild with the calcium.

Alta likes spinach, but parents got her to eat veggies by adding vinegar to them. Now cooked spinach or any baked goods with aluminum (baking powder) makes the edge of her tongue numb. Raw baby spinach in salad doesn't make her tongue go numb.

Connie: Boiling a vegetable for 12 minutes and tossing the water reduces a fraction of the oxalates. To detox oxalates safely, avoid high oxalate foods and eat low and medium oxalate foods. I will send out a list of low, medium and high oxalate foods. Also, take B1 (thiamine or benfotiamine is better), B6 (P5P is better than pyridoxine), and biotin. Put electrolytes (sodium, potassium, magnesium and calcium) in your water and drink 3-4 cups/day. Also, try to use the skin to detox the oxalates from the body - this includes sweating, footbaths and Epsom salts baths.

I get pure bulk supplements from Bulk Supplements: Here's the link to Benfotiamine:
https://www.bulksupplements.com/products/benfotiamine-powder
Do this only if you're comfortable weighing them out, so you don't make mistakes with the dosage.

Darlene: Thinks she has an oxalate problem. She has some of the symptoms.

High doses of vitamin C can go to oxalates, but you can stop taking vitamin C abruptly, since the body becomes addicted to it, even pregnant women can have babies addicted to C. The kidneys adapt to the high doses by increasing excretion to get rid of the excess, so the dose has to be tapered off.

Jennifer: In 2018 she had her first painful experience with kidney stones. It was worse than childbirth. In 2021, she passed 25 kidney stones - and 2 lodged in the ureter. One stone 4 x 9 mm passed and was very painful. We are only suppose to be able to pass 5 mm or less. She had surgery for the other stones. In 2022 passed some more. In 2023, she passed 5 stones. She started taking Chancra piedra and Dennis' herbal tea every day, and hasn't had any stones in the past year. She notes than in Chinese medicine, kidney stones have to do with fear. Something to think about.
Her two doctors were not in agreement about the low oxalate diet, so she never tried that.

Dennis' Kidney Stone Tea in 4 c boiling hot water:
1 tsp Oregon Grape Root
1 tsp Peppermint
2 tsp Dandelion Root
2 tsp Marshmallow Root

Steep for 5 - 8 min
Dennis had kidney stones and did the Rife machine years ago and took this tea. His stones dissolved and never came back.

Steve: Kids don't like their spinach. Maybe they know something.

There was a discussion about how to possibly detox if you can sweat. Darlene urinates a lot, possibly compensating for not sweating. Steve also doesn't sweat much. Connie wonders if they have pores in their feet and whether Epsom salts on the feet might help. She wonders if she has the amino acids needed to detox, like Cysteine and glycine to make glutathione. She knows someone with cystinuria who can't hold onto her cysteine or detox through her feet. Any lab should be able to run an amino acid panel with a doctor's prescription. Her son's pediatrician ordered it for both plasma and urine and he was low in cysteine and taurine, which is mad from cysteine and detoxes the hypochlorite ion. Darlene has a problem taking

Additional Information:
Another Oxalate story and research:
https://www.everywomanover29.com/blog/oxalate-crystal-disease-dietary-oxalates-and-pain-the-research-questions/?inf_contact_key=843dfeef84851b5f192ed85963bbb55a842e902fbefb79ab9abae13bfcb46658

Videos on oxalates:
Elliot is a French nutritionist who has some good videos on oxalates:
https://youtu.be/JL-pW_c90Wo?si=9Nw2a0LcLYKPQqc_

Interview with Sally K Norton:
https://youtu.be/LRaxoR2qlNM?si=bTi5JGhkTwmOc7Q7

Peter Osbourn covers a lot in this 1 hour video:
https://www.youtube.com/live/b3vVrepMOes?si=oqpRHAt4Z_ldzcSl

Sally K Norton's Book:
https://sallyknorton.com/toxic_superfoods/

Question on bioavailability of oxalates. I searched science on google scholar and didn't find any addressing the bioavailability of oxalates in raw food. It said that boiling, not steaming, would reduce them and eating calcium rich foods would bind the oxalates and reduce absorption.