

Sawbones 259: Alkaline Water

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Intro (Clint McElroy): Sawbones is a show about medical history, and nothing the hosts say should be taken as medical advice or opinion. It's for fun. Can't you just have fun for an hour and not try to diagnose your mystery boil? We think you've earned it. Just sit back, relax, and enjoy a moment of distraction from that weird growth. You're worth it.

[theme music plays]

Justin: Hello, everybody, and welcome to Sawbones: a marital tour of misguided medicine. I'm your co-host, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: Oh, sorry, Syd.

Sydnee: These faces... these faces.

Justin: I know, I know.

Sydnee: Is this gonna be the whole episode?

Justin: No, we did a—we're doin' a Konmari. You know? Konmari?

Sydnee: I know. I'm—

Justin: Marie Kondo?

Sydnee: I'm doing it with you.

Justin: This is for the listeners benefit.

Sydnee: Oh, okay.

Justin: If I say it enough times, they'll understand what I'm talking about.

Sydnee: Right.

Justin: Um, that's the way podcasting works.

Sydnee: [laughs quietly]

Justin: Um, [through laughter] Marie—

Sydnee: Thanks for letting me know how podcasting works!

Justin: You're supposed to touch everything in your house and see if it sparks joy, then throw away the stuff that doesn't, or donate it, or whatever. And we've gone through about 15 bags worth of donations and trash, but my allergies are just done, Syd.

Sydnee: Yeah. I understand.

Justin: I feel like—basically what I feel like right now is that the pH levels of my body [sniffs] are out of wack, and I feel like if I had something to help me bring it back into balance, then I would be a lot more centered and a lot more ready to do this show.

Sydnee: So, Justin first mentioned this week's topic to me. He said—I was trying to think of something to do, I was looking through our emails, and he said, "Hey! Why don't you talk about alkaline water? What's the deal with that?"

And so then I thought, "Ooh, has anybody else suggested this?" 'Cause here—this is my, uh, confession. I had not heard of alkaline water. I mean, I know what those two words mean, but I had not heard of it as a thing. I didn't know it was something people were buying.

Justin: I'm just somebody who follows trends in the beverage sector, and it's on an upswing right now in North America and Asia, so I just—I like to keep my finger on the pulse.

Sydnee: Well, so then I searched our email to see, have a lot of people been recommending this? And between alkaline water, alkaline diet, the whole pH, alkaline concept... a lot of people have been interested in this. I don't know how I've missed this.

Justin: A lot of people following the beverage sector, apparently.

Sydnee: Well, and also diets, which I think—like, that rung a bell for me. But I wanna thank all the people who recommended this, including Eva and Hannah and Alec and Sheryl and Jordan and Robert and Christopher and Freddy and Courtney and Amber and Emma—

Justin: [singing along in the background]

Sydnee: —and Jamie and Arthur and Amy and Bill and Sarah and Jessie and Lauren and Sarah and Anna... and Dana.

Thank you.

Justin: And...

Sydnee: Justin.

Justin: Hoops.

Sydnee: Yes. McElroy. Uh, I will say—and many of your emails said this, that you started to look into alkaline water because someone in your family or a friend said, "Hey, I'm drinking alkaline water now, and it's changed my life," in whatever myriad ways. And so you started to look it up to see, "Is this a real thing?"

And it took you down... a rabbit hole. And I sympathize, because I've been there.

Justin: I have at—this week, I have, at at least two points, found Syd with her head in her hands, and tears in her eyes, like, audibly gasping.

Sydnee: I—sometimes these things just—I know that this is what we do, and it shouldn't surprise me anymore, but... some of it is so obvious... like, so obvious that it's wrong. But then I have the—I went through medical school, so... I—

Justin: Well, let's go—let's go aboard!

Sydnee: Okay. Alright. So, uh... the thing about it is that people never seem to get tired of trying to improve on water.

Justin: Good ol!!!' water.

Sydnee: Like, people just have to do something with water, because it's not good enough that water is good for you and you should probably be drinking more of it, 'cause most of us don't drink enough. That's not enough.

Justin: They add fruit flavors to it.

Sydnee: [laughs quietly]

Justin: They add, like, fluoride. Like, c'mon! This is nature's water. You don't need to be throwin' those chemicals in *my* water.

Sydnee: Well, no, wait, no. Fluoride's good. As long as it's clean! I mean, as long as it's clean, it's just—that's—it's fine! Alkaline—

Justin: Clean, non-GMO—

Sydnee: No.

Justin: —organic—

Sydnee: Stop.

Justin: [wheezes]

Sydnee: Alkaline water is water that has a higher pH than water typically does. Do you—I think most people kind of—

Justin: The opposite would be acid water. Right?

Sydnee: Yes.

Justin: Okay.

Sydnee: Yes. So, you kind of understand how the pH scale works. I think most of us have some familiarity with it. Basically, it's a measure of how acidic something is or how basic it is, or alkaline, either way.

And the lower the pH value, the more acidic it is. The higher it is—

Justin: The more pumpkin spice lattes it drinks, the more basic it is.

Sydnee: Ha ha ha.

Justin: [quietly] It was pretty good.

Sydnee: No. more alkaline.

Justin: you gotta give me something...

Sydnee: The higher on the pH scale. So, a neutral pH is 7. If it's lower than 7, it's acidic. If it's higher than 7, it's alkaline.

Justin: That's dumb. [sniffs]

Sydnee: What?

Justin: It's dumb that it's that way. It should be zero. That's dumb that it's that way.

Sydnee: Well, that's... that's not how it... why would a neutral be zero, and then it'd be negative and positive? That would be more confusing. It's easier to use the—that way you can just use the value. Like, 7 is neutral, 1 to 6 is acidic, 8 to 14... alkaline.

Justin: Okay, I can—okay, I rescind, I rescind.

Sydnee: Yeah. Um, so generally speaking, things that are very acidic or very basic can be dangerous to humans, and the stuff in the neutral range is fine.

And even with that, let me point out, like, the pH of lemon juice is 2, so, I mean... within reason, dangerous. Obviously you can... eat a lemon if you want, and you're fine, you know.

Justin: Right. [sniffs]

Sydnee: Uh, and the reason that you're fine if you eat a lemon is because pH is one of if not the most tightly controlled systems in your body.

Your body is really good at regulating what your pH level is, and the reason for this is very simple: because the human body only operates in a pretty narrow pH

range. If it starts to get too low or too high, your enzymes, the proteins that do things in your body, will start to denature, or fall apart. And what follows that eventually is... death.

Justin: Right. Beef it.

Sydnee: So, the way we say it in medicine often is, "Oh, that pH is incompatible with life."

Justin: Meaning...

Sydnee: That person's going to die if we don't do something.

Justin: Right, okay. Got it.

Sydnee: So the idea that the food and beverage that you take in has influence on your blood pH level... is kinda wild, because if that were true, then every time you drank lemonade, you would die.

Justin: I don't!

Sydnee: Right.

Justin: Can confirm this.

Sydnee: So—[laughs quietly] So your—your kidneys and your lungs are mainly in charge of keeping your pH where it needs to be, by getting rid of things through your kidneys or keeping things and then blowing off extra carbon dioxide from your lungs. And all of this can be measured with a blood test. We can measure—there's a slightly different pH in the blood in your veins than in the blood in your arteries.

Justin: Mm-hmm.

Sydnee: And we can measure both of those things by taking a sample and figuring out what your blood pH is. And, again, this is very tightly regulated, and it's very important that your body keep a pH somewhere between 7.35 and 7.45.

Now, obviously if it goes above or below that, you don't instantly die. We—you know, we do things. You get sick, though. You get sick, you come to the hospital, we do things to help you, because otherwise, then you *will* die.

Water is usually around 7 on the pH scale. Maybe not absolute 7. Pure, natural water is 7, and then water that we drink, whether it's tap water or bottled water, varies around that.

Justin: Okay.

Sydnee: It's not always exactly 7. The way that they make alkaline water is to add different minerals that will raise the pH of it.

Justin: Okay.

Sydnee: So they add things like calcium and potassium, magnesium, silica, bicarbonate. They add all that to the water, and then the water that you can buy that's alkaline water is usually, like, a pH of 8 or 9.

Justin: Okay.

Sydnee: Okay? Did that all make sense?

Justin: Yes.

Sydnee: Now, the reason that alkaline water exists, the reason that this has been made and bottled and sold, is that there is this idea that somehow our North American diet is causing us all to be too acidic. That our bodies are... are chronically mildly acidic.

Justin: That would explain Twitter.

Sydnee: [laughs quietly]

Justin: To be fair.

Sydnee: If we all were just acidic all the time?

Justin: We're just all mildly acidic.

Sydnee: Now, if this were true, as I already mentioned, we could detect it on labs, right? Like, if you were really worried that you were too acidic, you could come in and I could do... the test that we use often in the hospital for patients that we're really worried about is an arterial blood gas. So, they actually have to stick a needle into an artery to get a blood sample to obtain. It's a very painful lab test. Necessary, unfortunately, sometimes.

But we could do that, and we could check your pH, and if your pH was okay—which if you're, like, not feeling sick and you're walking around and doing fine, it's probably pretty okay—you'd be fine.

Now, the argument that people who believe in this concept will make is that this is—first of all, it's just a low level acidity, so it's—I told you there was that range, 7.35 to 7.45?

Justin: Mm-hmm.

Sydnee: They say that 7.4 is ideal, so if you are 7.38, you're too acidic.

Justin: Okay.

Sydnee: So, they will say, like, "Well, but the lab's normal, but we know that that's not okay. It's normal, but not normal."

Or they'll say, "Well, your blood pH may be normal, but... what is your body having to do to maintain that normal blood pH?" Right? So it's having to make all these sacrifices and make all these exchanges in different organ systems. So if we were able to test the acidity in your liver or in your kidneys or in your wherever, your intestines, then we would see that on a cellular level, your body is too acidic.

Justin: And it's like having to work overtime.

Sydnee: Yes.

Justin: To keep you... level.

Sydnee: So, basically the argument would be that this blood test is not an accurate representation of your whole body acidity.

And the nice thing about something like that, like, a concept like that, is that... I can't prove you wrong, in the sense that I don't know how to go in and sample... you know, from—from what organ system? From where in the body? What cells are you worried about? Which environment?

And different parts of the body are acidic! Your stomach contents—

Justin: Is more acidic.

Sydnee: Yes! Because that's how you break down food.

Justin: So it's kind of like, everybody knows this test is accurate. What my book presupposes is... maybe it's not?

Sydnee: Exactly. Uh, so... this idea, by the way, is distinct from—patients with certain conditions like chronic lung disease or chronic kidney disease are always at risk for a chronic acidosis. Their body works really hard to compensate for that, but they often have to obtain certain medical treatments to maintain their pH, especially, like, people who need dialysis.

Justin: Okay.

Sydnee: If you don't get dialysis, you could become quite acidic. But you'll know, 'cause you'll get sick. And we have a distinct cause and a treatment for that. It's not some sort of chronic, untestable, undetectable cause of all disease, which is what it has become: this secret cause of all disease.

I have seen this concept of low level acidosis blamed for acid reflux, basically any pain... one of the main practitioners we're gonna talk about, one of the main proponents for this, would simply tell his patients, "Acid is pain, pain is acid. Acid is the problem."

It's all—that is the cause of all pain. Back pain, muscle pain, bone pain, whatever. Uh, cancer, and we're gonna get into—this has been blamed for all of cancer.

Justin: Okay.

Sydnee: Uh, any kind of heart disease, diabetes, gout, high blood pressure, kidney stones, osteoporosis is a big one, um... all this stuff has been blamed on this concept of a chronic, low-level metabolic acidosis.

Justin: Okay.

Sydnee: And what I'm gonna start off with is the idea that maybe this isn't even a real thing.

Justin: [pretends to be surprised] What?! Sydnee! I didn't see that coming.

Sydnee: Um, so, just to tell you, like, where did this concept probably originate, it probably dates back to a study done in 1995 by Dr. Thomas Remer and Friedrich Manz who were looking at the effect that diets could have on pH, but not blood pH. The pH of your urine.

Justin: Hmm.

Sydnee: And the reason for this is that urine pH can be associated with your likelihood of forming kidney stones. A lower urine pH makes you more likely to have a kidney stone.

So, they were looking at ways to raise the pH of your urine and prevent kidney stones. That was the whole idea. So they looked at different foods and the way that they were processed in the body, and they came up with the idea that some foods are acidic—not like a lemon is acidic, acidic in the sense that they generate acid compounds in your body—and some foods are alkaline, they generate alkaline compounds in your body.

And if you could mainly eat foods that are alkaline, you're going to have more alkaline urine. The pH of your urine will be higher, and you'll be less likely to form kidney stones.

So this was the whole idea they were going for, and they came up with this concept of a potential renal acid load, PRAL, value, and they gave foods different PRALs, based on how much they would lower or raise the pH of your urine. And, like I said, this is not obvious. On this scale, a citrus fruit is actually an alkaline food.

Justin: Why?

Sydnee: Because it—because it is acidic, your body is going to generate alkaline compounds in response. So, generally speaking, fruits and veggies were found to be alkaline. Meats, dairy, grains are acidic. Generally speaking, on this diet.

And so, the researchers came to the conclusion that if we can raise urine pH and make it more alkaline, you'll have fewer kidney stones.

It had nothing to do with cancer. It had nothing to do with weight loss. It had nothing to do with heart attacks. It had nothing to do with general wellness or anything else. They basically said, "This alkaline diet... could help prevent kidney stones." It was mainly, like, a fruit and veggie based diet.

Justin: That seems like a lot of work to prevent one thing. What about all the other things?

Sydnee: Well, they weren't—I mean, they weren't studying that! They were looking very specifically at one thing.

Justin: Yeah, it's just like—it's just, like, that's like saying, like, "If you eat a diet of all fruits and veggies and bread and bananas, then we can help... treat your... I don't know, athlete's foot." It's like, well, that's a whole diet for one thing! What about all the other things?

Sydnee: Well... uh, one, I would say, everybody's gotta study somethin'.

Justin: Fine!

Sydnee: People can't all study *all*. You have to focus! And usually that's the way you make breakthroughs, is by focusing on a thing and working really hard at it.

Two, have you ever had a kidney stone?

Justin: Uh, Griffin did.

Sydnee: Mm-hmm. So, since you can feel your brother's pain—

Justin: Just like those two guys from G.I. Joe.

Sydnee: —how was it? [laughs]

Justin: Bad!

Sydnee: Uh-huh?

Justin: But, like... there's all kinds of reasons to eat certain ways. It just seems like a wild reason.

Sydnee: I think if you got—I've had one kidney stone in my life. If I were someone—'cause there are certain conditions that predispose you to getting stones a lot, and if I were one of those people who knew I was probably gonna get kidney stones on a regular basis, I might switch my diet around, if that would help prevent it.

Justin: Fair enough.

Sydnee: They're *really* painful.

Justin: Yeah, fair enough. Alright. I won't dunk on these cats anymore.

Sydnee: No, I don't think these—I mention this study because I think this might have been the beginning... I mean, we knew about the concept of acidity and alkalinity, obviously, prior to that. But I think this may be where some of this other stuff—like, this was the research milieu which gave rise to this alkaline diet that we're gonna talk about.

Justin: So, so far, things are okay, scientifically speaking.

Sydnee: Yes.

Justin: We're on solid ground.

Sydnee: But we are about to leave Earth, and float into the... into the... skies... the realms of, uh, fake medicine.

Justin: Oh, beautiful. Let's go!

Sydnee: But first, let's make a pit stop at the billing department.

Justin: Yeah, we'll get some supplies. [wheeze-laughs] And space gas. Let's go.

[theme music plays]

Justin: Our first sponsor this week is ZipRecruiter. If you're got a job that you need to fill, good news. We got people. Well, we don't have people. We don't have anyone. We have a baby and a four year old, so if you need cotton candy eaten or things dumped over, we've got the two staffers—

Sydnee: [laughs quietly]

Justin: —for your organization. Otherwise, you're gonna want to turn to ZipRecruiter. You know what's smart? Kicking off 2019, planning out which roles you need to hire for. Do you need someone to spill things on the ground? Do you need someone to eat four, uh, pieces of macaroni and cheese, and throw 38,000 onto the floor? We've got the staff for you, but you probably want, like...

Sydnee: She will also then eat them off the floor, if you let her.

Justin: Yeah, yeah. It doesn't matter how old they are. But you probably want, like, a salesperson or something. Either way, you wanna turn to ZipRecruiter: the smartest way to hire.

They've got this matching technology that helps find people for you. It doesn't wait for them to find your gig. It actively invites them to apply. It's no wonder that ZipRecruiter is rated number one by employers in the US, and right now, our listeners can try ZipRecruiter for free! At [Ziprecruiter.com/sawbones](https://ziprecruiter.com/sawbones).

You love this show, you wanna show your support to Sawbones, our podcast, and you wanna find the best person for your job, then head over to [Ziprecruiter.com/sawbones](https://ziprecruiter.com/sawbones).

I also want to mention Squarespace. If you've got a neat idea that you'd love to see take root on the internet, then there's no better place to turn than Squarespace. They're gonna help build the perfect website for you.

Sydnee: Uh, as long as it has nothing to do with an alkaline diet.

Justin: If—yeah, exactly.

Sydnee: [laughs]

Justin: You can sell products and services of all kinds, except for alkaline water. It's illegal to sell those through Squarespace.

Sydnee: No.

Justin: No.

Sydnee: No, that's not true.

Justin: Uh, beautiful—

Sydnee: I just—I advise against it, personally.

Justin: Beautiful, customizable templates created by world-class designers are right there at your fingertips. They've got a new way to buy domains, and choose from over 200 extensions. There's free and secure hosting, too!

So head on over the [Squarespace.com/sawbones](https://www.squarespace.com/sawbones) for a free trial, and when you're ready to launch, use the offer code "sawbones" to save 10% off your first purchase of a website or a domain!

One more time, that's [Squarespace.com/sawbones](https://www.squarespace.com/sawbones) for that free trial, and then when you're ready to launch, use the offer code "sawbones" to save 10% off your first purchase of a website or a domain.

Sydnee: Alright, Justin. Are you ready for this?

Justin: Yeah. Blast—blast off.

Sydnee: I don't mean in like a fun, like, sports... sports jam way, there.

Justin: [quietly] Okay.

Sydnee: Yeah. Like... [laughs] like, prepare yourself.

Justin: Go ahead, demonstrate.

Sydnee: No, I wasn't going to do that, no.

Justin: Did you say sports jam?

Sydnee: [through laughter] Uh-huh.

Justin: Excellent.

Sydnee: [laughs]

Justin: Thank you. That'll keep me runnin' for the rest of the day. Thank you.
[quietly] sports jam.

Sydnee: [laughs]

Justin: Jock Jams? Is that what you were thinking of?

Sydnee: [through laughter] Yeah, I couldn't remember!

Justin: This is the unlicensed—Sydnee McElroy presents an unlicensed collection of Jock Jams!

Sydnee: [laughs] Sorry.

Justin: Y'all ready for something? [sings something kind of like Jock Jams?]

Sydnee: I think that was just enough different, and I think you did okay.

Justin: [laughs loudly]

Sydnee: [laughs]

Justin: [singing to the tune of Pump the Jam] Pump, Pump the song, pump it up!

Sydnee: [laughs] Okay.

Justin: [singing to the tune of We Are the Champions] We are the winners, my pals!

Sydnee: [laughs]

Justin: Okay. My bad. I'm done with sports jams.

Sydnee: A lot of—okay. A lot of what follows is probably—I'm gonna—I'm gonna blame it on this guy, 'cause he seems—

Justin: You spent a lot of time looking for the right person to dunk on.

Sydnee: I didn't, I found him—one of our listeners named him in an email, and then I looked him up, and I... this was the cause of many of my tears.

Robert O. Young is who I'm gonna blame a lot of this on. And, I mean, it wasn't just him. I think there was this moment in the 90's when there was this sudden increased interest in the idea that we could acidify, I guess, or alk—alkalinize or bodies.

Which, again, it's just—it's wild to me. We spend so much time learning about acid-based physiology and, like, how all that works in the human body in medical school, and then applying it in the hospital, which I do frequently.

It's—I mean, it's complex! And it takes time. You have to do to math! And it's not something—like, your body is really good at it! And when it's not good, you're sick!

So this idea that, like, "Oh, we can just eat things and change—" it's just wild. Anyway, Robert O. Young was not—is not—he's still alive. He's just not practicing... whatever he was practicing. You can't call it medicine.

He is not a doctor. He was educated primarily at a non-accredited institution called the Clayton College of Natural Health.

Justin: [distantly] Bad start.

Sydnee: So the degrees that he received are not...

Justin: Anything.

Sydnee: I mean, not accepted by, you know, the educational community at large, as indicative of any sort of body of knowledge.

He did not have any credentials to be practicing medicine, as I said. He went—as evidence for this, he went from a Bachelor's degree to a Doctoral degree in eight months.

Justin: Now, that is tempting. That I do find tempting.

Sydnee: [holding back laughter] Do you?

Justin: Yeah.

Sydnee: Do you?

Justin: So is he Dr. Robert O. Young, or is he—

Sydnee: No, he's not.

Justin: He's Robert O. Young, PhD? Is that what—

Sydnee: No! He's not a PhD. He's nothing.

Justin: Why do you say he's got a doctoral degree?

Sydnee: Because they—well, they gave him these degrees, but it was—

Justin: Oh, but it's, like, not a real school!

Sydnee: No! It was like a diploma mill!

Justin: [through laughter] He got—[laughs]

Sydnee: I mean, like, he got all these supposed degrees, but he didn't actually have any sort of... one of them was like a—was a naturopathic degree that—he really didn't even have that! He didn't have any!

Justin: [laughs] He's not even good at the fake thing!

Sydnee: There was one that was like a—he got a Doctorate of Philosophy and Nutrition, or something? I mean, they're—he got a series of wild degrees. He had studied, like, business. He took a random biology course here and there. He had taken some nutrition courses here and there. He had gone to school for a while. He never graduated from an actual accredited university. He just kind of floated around, did some different training, and then eventually got these fake degrees.

Uh, he derived from this... [through laughter] clearly excellent, exemplary education, that all human disease is blamed on acidity. Everything that's wrong with you is simply the result of too much acid.

Justin: Okay.

Sydnee: He's the one who I quoted earlier, "Pain is acid. Acid is pain."

Everything that goes wrong in your body is because you have too much acid in there, and so, therefore, all cures are... an alkaline diet, or alkaline water, or alkaline infusion. Whatever. Just, alkalinize your body, cures anything.

Justin: Got it.

Sydnee: It's that simple. [snorts] If only anything were that simple in medicine, I would be nice.

So, he also believed, by the way, in a concept—just to underline kind of how wild these ideas are, 'cause sometimes this stuff can sound... not too far off, and maybe you think, "Well, was he just, like, this really ahead-of-his-time genius, and the rest of us are behind?"

He also believed in a 19th century concept called pleomorphism. This was prior to us learning the germ theory of disease and widely accepting it, the idea that germs that we...

Justin: Him believing it was not prior to us—

Sydnee: No, no.

Justin: —knowing about the germ theory.

Sydnee: This theory—this theory predates the germ theory of disease. When we figured out, like, "Oh, we get these germs from out there in the world, or from other humans, and they get inside our bodies and they make us sick."

He believed that bacteria are actually red blood cells that have been exposed to acid. Now, this pleomorphic theory went, you know, out the window after germ theory of disease, but not for Young, who still believed it.

And he would do something called "live blood analysis," and I want to mention this, because I think you might run in to somebody, especially if you're someone who suffers from any kind of chronic illness or who has to see multiple different kinds of doctors, or who maybe, like, is looking for a doctor 'cause you haven't had great experiences, you might run into certain practitioners, especially alternative medicine practitioners, who will do this "live blood analysis."

This is not accepted by any laboratory, medical organization. This is not a real examination. As far as what it—its origins are in this pleomorphic theory, this idea that red blood cells will become bacteria. That was where it came from.

The people who practice it will use it to tell you that you have too much acid in your blood, or that you have a vitamin deficiency, or—all kinds of things that they can then turn around and prescribe you a bunch of supplements that they usually also sell...

Justin: Of course.

Sydnee: ... to fix all of these problems. And they will certainly find something wrong. It's one of those tests that they're gonna do, and they're gonna find something wrong. No one can reproduce it. No lab does it, but he would do this and teach this. He's gotten in trouble for this, as well as other things we'll talk about.

And he basically thought, "Treating disease is like changing the water in a fish tank." That was one of his great analogies. "If your fish is sick, do you treat the fish, or do you just change the water in their tank?"

Justin: Listen. Fish don't cost that much. I'm not sure I would do either—

Sydnee: [laughs quietly] Justin!

Justin: —but I see what you're saying.

Sydnee: He wrote a bunch of books about his pH theory. He has many, many books about the pH diet and how to, you know, alkalinize your body. He was on Oprah. He brought a patient with him on Oprah who claimed that he had cured her breast cancer.

Justin: How dare he drag Oprah into this. Oprah, I guess, how dare you put this guy on a national stage, but still!

Sydnee: I haven't watched the interview. I don't know how... I don't know how skeptical or critical she was. I have no idea.

Justin: I'll get you a second computer so you can throw that one through the window—[wheezes]

Sydnee: I know. I just—I couldn't. This poor patient that he brought on with him, who at the time believed he had cured her cancer, died of her cancer two years later. So he did not cure her cancer. At the time, it looked like—maybe she was in remission or something, but it obviously did not cure her cancer.

He was brought up on charges many times throughout his career for fraudulent claims and false advertising, this live blood analysis. He would perform these things that aren't real tests, and then make people pay him money. He eventually started running a cancer clinic out of, I mean, this big ranch that he owned.

He owned this giant ranch out in California. There was, like, a moat around it, and you have to cross, like, stones, to get up to the door, and he basically would bring patients out to his giant fancy ranch and treat them there. And he would treat them with, like, his diet. Alkaline—it was all about alkaline. Just al—you know. Eat this alkaline diet, drink this water.

And, like, a lot of that probably is harmless in and of itself. Like, eat more fruits and veggies. Okay, that's fine. Does it treat cancer? Does it cure cancer? No. Is it harmful? No, but he would actively encourage his patients not to seek out traditional medicine, but to just go with his cures. He would also do things like... infusions of baking soda.

[pauses]

Justin: Unhelpful.

Sydnee: No. Those are unhelpful. And, in addition, he would charge people at his pH miracle ranch... thousands of dollars. People who are—

Justin: That's the most surprising part you've told me, Sydnee.

Sydnee: [laughs quietly]

Justin: I *never* would have seen that part coming. Hatchi matchi, what a shock.

Sydnee: People who were desperate, who were diagnosed with advanced, incurable, end-stage cancers, would come out to his ranch and pay—one patient paid, like, \$77,000 before she eventually succumbed to the cancer. It's just—it's egregious. It's egregious, what he did. Um, with absolutely no basis for it.

So, eventually he was—just in the last couple years, he was convicted of practicing medicine without a license. He was sent to jail for three years. He's still currently in jail.

And he was also sentenced, in a separate trial, to pay 105 million dollars to one of his patients that he actively encouraged not to seek out treatment for her, at the time, stage one, treatable, possibly resectable breast cancer—

Justin: [groans]

Sydnee: —which then, by the time this court case was going on, it had advanced to stage four. So, I think a lot of this concept of the alkaline diet and that you can alter your body pH significantly with eating and drinking certain things comes from—I mean, he wrote a whole bunch of books, and—it's funny. As I was looking through all of the books that he wrote, these—like, they sounded... familiar to me. Like, I think I've seen these books out there, you know? Like, *The pH Miracle* and stuff.

Justin: Yeah.

Sydnee: I think I've heard of these, um... I was looking for some of—*The pH Miracle: Balance Your Diet, Reclaim Your Health, The pH Miracle For Weight Loss: Balance Your Body Chemistry, Achieve Your Ideal Weight.*

I feel like I've seen these out there and around, and you probably have, too, and they're all written by this guy who was a complete fraud, who only was after money, and was willing to... let people die, in order to, I mean, get money from them.

Justin: Great.

Sydnee: So I think from that—not just him, but like, from all these books he published and all this renewed interest, and focusing on cancer, I think that that, unfortunately, is a very effective method for some of these frauds to gain traction, is that un—you know, sadly there are many times where a patient will come in with an advanced cancer, and a doctor won't have a cure. They'll have treatments, they'll have ways to manage it, but they'll have to be honest and say, "This is incurable."

And that kind of desperation that that causes, I think makes people more likely to seek out alternative methods of treatment, because what have you got to lose?

Justin: Right.

Sydnee: Kind of attitude. And so—

Justin: Your money, is the answer.

Sydnee: Yes.

Justin: And time, and your health.

Sydnee: Yes. And so I think that these—a lot of these frauds will prey upon that specifically, because it's not as simple as—you come to your doctor, you have high blood pressure, they give you a pill, your blood pressure comes down. Great. Like, I can fix that. Cancer unfortunately is not like that.

So, from this, a lot of studies were generated looking at this concept of alkaline diet, alkaline water, alkalinizing the body in some way. There was a lot of interest initially focused on osteoporosis, because we know that in an acidic environment, the body loses more calcium. So the thought was, we'll lose bone density, our bones will be weaker, we'll be more likely to have osteoporosis in an acidic body.

There's been some, like, correlation studies, where they took post-menopausal women, who are more likely to have osteoporosis, and looked at their diet, and all this different stuff, and there were some correlations found with diet. But, again, we're just looking at diets where, like, do people eat a lot of fruit and veggies in addition to protein? And, like, fruit—we know fruits and vegetables are good for us, so it's not... that's kind of a hard thing to ask.

Like, are there a million other reasons why people who eat a healthy, well-balanced diet would be less likely to get sick than people who don't eat a healthy, well-balanced diet?

Justin: Of course.

Sydnee: I mean—right. Everything else that it's been touted for is still under investigation. There's been a lot of evidence that is used to back up these claims, from studies that were done on patients who had actual, metabolic acidosis.

So, instead of this possibly—well, I would say almost certainly completely fake thing—chronic, low level acidosis, that we all might be suffering from, because of our North American diet—there are people who have actual acidosis.

They're usually in the hospital. I'm usually treating them for something. It's usually a patient with a respiratory or kidney problem. Could be other things, though. Diabetes can lead to this.

And they've done studies on these patients to see, like, what is that acidic environment? What other problems does it cause in their body? And they're using those studies as evidence for this other thing, but in these patients, their pH was usually 7.2 or lower: true acidosis. Not this vague, 7.38—

Justin: "The tests are wrong," all that, yeah.

Sydnee: Right, exactly. No, these were actually sick people, so these two things are—it's apples and oranges. This has nothing to do with it.

And all of this is leading to a lot of conflicting dietary advice, right? Because we live in this age of—I think we're still in a lot of "Carbs are bad, don't eat carbs, all carbs—you know, stay away from all carbs. Eat a lot of protein."

I think we are still very much in that moment in dietary history. Well, this diet says, "No, don't eat protein. Eat a little, but too much protein is bad for you, so don't eat protein."

Um, they both agree, whether you're going high protein or alkaline diet, they both agree that grains are bad. [laughs quietly]

Justin: [quietly] It's something.

Sydnee: But, like, this diet would argue that you don't eat meat, or protein. Don't eat any protein.

Justin: Okay.

Sydnee: Which... I know my sister would call me and say that's fine. [laughs quietly]

Justin: No, she eats protein!

Sydnee: Well, she eats protein. Yeah, she—she wouldn't even be following the alkaline diet.

So, in general, this concept of low grade metabolic acidosis probably doesn't exist. There are not—there's nothing to back up all the claims that it is the secret cause of diabetes and heart disease and strokes and cancer. You'll find that out there. There's nothing to back that up.

Because, again, if we changed our body pH this easily, we would die every time we drank lemonade, so.

For alkaline water specifically, there's no hard evidence that it does anything. I mean, 'cause it's borne of this. The reason I give you all this background is this is where this comes from. This idea. This quack guy, and everybody else who wrote books about the alkaline diet. This is where this argument for alkaline water comes in.

There have been some suggestions that maybe the minerals in the water are helpful, so it's not really that the pH is higher. It's that if you have more minerals in the water, you can actually become slightly more hydrated from that water than you can from water that doesn't have those minerals in it, and so maybe your hydration status is improved, and so, like, your exercise tolerance and endurance might be a little better.

Again, this is all investigational. This has just been kind of suggested, that maybe you're better hydrated from drinking alkaline water.

Justin: I—hm.

Sydnee: Obviously they make claims for stuff like, "It will detoxify you, and it will fix your gut bacteria," and all that stuff. There's no research for any of that.

Can it be dangerous? If you have kidney problems, drinking water with all these extra minerals could be bad. I know I talked about the decreased kidney stones with the alkalization and all that, but all these extra minerals could be bad for you if you have kidney problems, so anybody with kidney problems should not drink this.

Is it better than tap water? I have no evidence to say it is! I really don't. I think that if you're staying properly hydrated with water—and if you are among the people on this planet who have access to cheap, clean water, through your tap, why are you wasting your money on bottled water? Why are you wasting the plastic from those bottles? I mean, you're lucky. You're lucky. We're lucky.

Justin: Speaking of, I—I—I know it is foolish of me to look to corporations for leadership in things like this, but just to—and also, like, shame on you to, like—Pepsi has LIFEWTR, and Bai does an antioxidant water, and they're both marketed as pH balanced—or in Bai's case, like, actual, like, low—[clears throat] Excuse me. Low pH, like, alkaline water.

Sydnee: High pH.

Justin: High pH, sorry. Yeah, yeah, yeah.

Sydnee: Yeah. 'Cause I think LIFEWTR is not an alkaline water, it's just a health water.

Justin: And it's just—it's exactly like the GMO thing, where these corporations wander into these things that they know nothing about, and latch on to... you know, it doesn't just have to be a flavor of the season, you know, what the hip flavor is. It's the hip, like, health thing that has no credence, but when you see the shelves lined with things that say, "Alkaline water," you're gonna start to—it lends credence to these quacks that are ripping people off!

I mean, besides the fact that, like, *you're* ripping people off by giving them expensive water that does nothing. Like, that's bad enough, but you're also beefing up the claims of these people, these extremist nut jobs—pardon the expression—and, I don't know. It's just so unscrupulous and gross.

Sydnee: It really is, and alkaline water—some of the things I saw, like, it costs, like, 20 bucks for 12 one liter bottles, so it's expensive water. And there are some brands that are sold in a multi-level marketing...

Justin: Oh, so that's kind of two—

Sydnee: ... format. [laughs]

Justin: —of 'em together. Kinda doin' two together.

Sydnee: Uh, yeah. And, I mean, I would say this: just drink water. Drink clean water. Not raw water. Drink clean water.

I saw one dietitian make this case: "I like the way my water tastes when it's filtered, so I have a filter and I filter my tap water and I drink that."

And I think that's fine! I think that if you prefer your filtered water, drink your filtered—that's so much better than buying a bunch of bottled water.

I drink tap water. I drink it straight from the tap. I actually like fridge water a lot. Fridge water's my favorite.

Justin: You like that cold fridge water.

Sydnee: That cold fridge water. But, I mean, I drink it. I'm not worried about it. Fluoride is good. [pauses] I said that. I'm gonna get emails.

You'll see a lot of the claims—people will tell you how to alkalinize your water at home.

Justin: Pitcher..

Sydnee: You have to—well, you have to buy stuff. You have to buy equipment, and some of the equipment for—'cause it usually runs alongside ionization of water as well.

Justin: We talked about that, right?

Sydnee: I don't think we—

Justin: What was the device that we talked about for water?

Sydnee: Uh...

Justin: Um...

Sydnee: I don't know. There's one that's, like, \$2,500.

Justin: No, this is one that, like, hotels use.

Sydnee: Oh, yeah.

Justin: What was that?

Sydnee: Um... no, that was the, um... the air purifier.

Justin: Yeah.

Sydnee: Yeah.

Justin: Yeah, yeah, yeah.

Sydnee: No, not the water.

Justin: Yeah, yeah yeah yeah.

Sydnee: But you can buy these things online, and I have no reason to think you should!

Justin: Naw!

Sydnee: It's a lot of money, and I don't think—no, I don't have any evidence that they're doing anything to your water—

Justin: It doesn't—the thing is, it's a slippery slope.

Sydnee: —and they'll link it to removing fluoride, and so that, to me, is a big red flag, because fluoride is not dangerous. There is no need [through laughter] to remove fluoride from your water, so why would you buy a device to remove fluoride from your water?!

Justin: I don't know if you necessarily agree with me on this. I have come—I look at this differently than I did when we first started doing Sawbones.

I used to feel like—and I probably have said this on the show. Like, if you want to spend your money on it, and it's not hurting anybody, then, like, go for it. You know? Is it not hurting you? Whatever.

I—I, now, at this point, feel like... it is hurting. It's hurting because you're lending—every, like, vote, right, that you make with your dollars, is lending credence to these people that want to dismantle, like, science and reason and scientific thinking.

Like, I think every dollar you spend on a product that's been marketed as non-GMO is reinforcing to those people that that's an important thing to continue to focus on and spread the word about. And it doesn't matter if it's not hurting you individually.

I think that, like, we are at a point, now, where... highlighting the truth and pointing the finger at actual, real lies, non-scientific lies, is more important than the sort of, like, "Live and let live," you know, "If it's not hurting you then it's not hurting."

Sydnee: Well, I would agree completely, 'cause I think—I saw one statistic as I was researching this that 39% of Americans believe that cancer can be treated or cured by some sort of natural, alternative thing.

So the idea that there are all these secret treatments that doctors won't give you—I don't know what our agenda is, I don't know why we have this agenda that people keep placing on us—but that there is this secret treatment that doctors won't give you that will cure your cancer. You've just gotta find the right person to pay to give it to you.

This idea has taken deep roots in this country, in our medical system. And the sad thing is, people will seek this in terms of treatments that would help, and they will waste their time and their money, and there are always gonna be people like this Robert Young guy who are willing to take advantage of them. Which is incredibly sad, but those people will take your money and infuse you with baking soda, and then send you home to die.

And... I—I mean, the best we can do is keep telling people it's fake. [laughs weakly]

Justin: So... spread the word. You know, like, tell people that—if you see someone mention alkaline water, like, don't suffer it quietly. All this garbage. Like, tell—become insufferable.

Sydnee: There's just no point.

Justin: Like, there's no point. If loved ones—like, speak up. If loved ones are spending thousands of dollars on this trash, like, tell them. Send them this episode. Tell them to download it repeatedly. Tell them to—

Sydnee: [laughs]

Justin: —support our advertisers. Donate to the Maximum Fun Drive. Don't hesitate... to support us financially.

Sydnee: And just remember how lucky—again, if you live somewhere—'cause not even everywhere in this country—if you live somewhere where you can turn on your tap and get clean water, cheaply, every day, you're lucky! Don't take that for granted!

Justin: The same with podcasts! If you can turn on your headphones—

Sydnee: [laughs]

Justin: —and get clean podcasts every week, don't take it for granted! Maximumfun.org/donate. [muffled laughter]

Sydnee: I'm goin' back to water. [loudly] Flint still doesn't have clean water!

Justin: [quietly] Yeah.

Uh, folks, thanks so much for listening to our program. Sorry it wasn't cheerier!

Sydnee: [laughs quietly]

Justin: Uh... we'll getcha next time.

Sydnee: I'll do something lighter next week. Sorry.

Justin: Yeah.

Sydnee: You suggested this alkaline water! I didn't know where it would take me.

Justin: I was—I was right.

Sydnee: I had no idea!

Justin: I was right. Thank you so much to the Maximum Fun Network for having us as a part of their extended podcasting family. Thanks to folks who have sent stuff to our PO box.

Karen sent socks and slippers. Lucia sent a book about herbal medicine, Miranda, for the onesie, Jessica for the book, Carey for the apron and blanket.

Thanks to Abel for the drawing of our theme song. Abel has synesthesia, and she interprets music, like our theme song, as visual imagery, which she then paints! Which you can buy at McElroymerch.com. Abel's work is for sale.

Sydnee: It's beautiful, you should check it out.

Justin: I have it hanging in our home, actually. Hannah sent an old book on colds. Audra sent Shakespeare's medical language dictionary. E.A.K. sent a book, Sabine sent a pen, Matt for the capes, Cora for the cross-stitch, Brittany for soda, Brian for his letters... many, many letters. And George for stamps.

So thank you to everyone for doing that. It's very kind.

Um... thanks to The Taxpayers for the use of their song "Medicines" as the intro and outro of our program, and thanks to... is that everybody?

Sydnee: Yeah! We'll be at PodCon next week.

Justin: We'll be at PodCon next week, and we'll be at Sketchfest next week.

Sydnee: Yes!

Justin: Uh, if you go to McElroy.family and click on the tours thing, you can find out more about both of those. So we hope to see you there, but until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

Justin: And, as always, don't drill a hole in your head!

[theme music plays]

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[music plays]

Speaker One: Dead Pilot's Society brings you exclusive readings of comedy pilots that were never made, featuring actors like Patton Oswald.

Patton Oswald: So, the vampire from the future sleeps in the dude's studio during the day, and they hunt monsters at night. It's Blade meets The Odd Couple!

[audience laughs]

Speaker One: Adam Scott and Jane Levi.

Jane Levi: Come on, Cory! She's too serious, too business-y. She doesn't know the hokey-pokey.

Adam Scott: She'll learn what it's all about.

[audience laughs]

Speaker One: Busy Phillips and Dave Koechner.

Dave Koechner: Maybe this is family.

Busy Phillips: My uncle Tell who showed his wiener to Cinderella at Disneyland is family. Do you want him stayin' with us?

Dave Koechner: He did stay with us, for three months!

Busy Phillips: [loudly] And he was a delight!

[audience laughs]

Speaker One: A new pilot every month, only on Dead Pilot's Society, from Maximum Fun.