Sawbones 417: Vomiting

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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 cohost, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: Me? I'm still Justin McElroy, no matter what… my wife's name is.

Sydnee: That— yes, that's true.

Justin: That's quantum physics for you, Syd. Right there, in a nutshell.

Sydnee: I don't— that, um— that was not my, of the sciences— of the big sciences, that was not my strongest suit, physics. I was more of a bio, then chem, then physics last kind of gal.

Justin: Alright.

Sydnee: But that's not— I'm pretty sure that's not quantum physics.

Justin: Uh, you're probably right about that, Sydnee. Um—

Sydnee: Probably. Maybe, I mean, you know? It's hard to— it's honestly hard to say. [chuckles softly]

Justin: It's been a heck of a couple of weeks. Hasn't it, pal?

Sydnee: Oh, man. [sighs deeply] Yeah, bud. I mean, you were gone through part of… it.

Justin: But that was hard in its own way for me. 'Cause I had a lot of travel woes, and—

Sydnee: You were on the road again.

Justin: I'm away from my heart and soul, my family. And I'm with my other heart and soul, the fans.

Sydnee: But then our power went out.

Justin: Yeah.

Sydnee: And then… there was water dripping from the ceiling in the basement.

Justin: Which is not what you want.

Sydnee: [grimly] No.

Justin: Uh, it's been rough, but you know what kicked it off, really? This— this, [snort laugh] period of relative calm; was we were having some friends over.

Sydnee: Mm-hmm.

Justin: And this—

Sydnee: A delightful evening. We're sitting—

Justin: We never— we *never*—

Sydnee: We never have adult friends over. The idea of us sitting with another couple and, like, having a drink and relaxing and talking and eating some popcorn, that is so rare for us.

Justin: It's—

Sydnee: Like, *so* rare.

Justin: Like, y'all [wheeze laughs], it never happens.

Sydnee: Never. And so, we're sitting on the deck and relaxing and talking when our oldest daughter Charlie comes running out—

Justin: Yes.

Sydnee: … in [through laugh] just pajama pants.

Justin: Yes.

Sydnee: Inexplicably.

Justin: Yes, our friends Tommy and Claire were there. We're all— and I was sitting there thinking like, "This is so nice. We should do this more often." And then I see shirtless Charlie trucking it through the living room. [wheeze laughing]

Sydnee: Looking for us, and we're like, "We're right here." And she's like, "Cooper puked!"

Justin: Cooper puked.

Sydnee: Because Cooper had indeed… poor thing, doused herself, her bed, her clothes, her hair.

Justin: She didn't seem to, um, be sick. This is one of the things they don't put in the parenting books. Sometimes kids, [through laughter] they just puke.

Sydnee: Sometimes, kids just puke. I mean, I actually— part of, so—

Justin: You know that thing in your body where you're like, "I better not eat any more of this smoothie, or I *will* puke." Kids don't have that switch.

Sydnee: No. And especially, like, kids eat— if it's yummy, they eat it fast. So, they eat it before the switch can even be flipped. But I am going to talk about that specific issue in this episode of *Sawbones*, which is about vomiting. Just vomiting. This is sort of— this one's a little different. I mean, there's history in here, but it's more like a survey. I was just sort of, like—

Justin: [whispers] What's up with vomiting?

Sydnee: I just wanted to think. I wanted to, like, meditate on vomiting for an episode. [laughs]

Justin: Now before— this is obviously— this isn't really a content warning so much because you probably should have guessed this from, like, the—

Sydnee: Yeah, it's yucky. It's vomit.

Justin: Yeah, but if that's something you don't like to hear about. If that's, like, a rough topic for you, please, by all means, enjoy our other episodes.

Sydnee: Yeah, absolutely.

Justin: So, Syd, what's up, though? I mean, what's up with that?

Sydnee: Well, okay.

Justin: Ew-ee… what up with that?

Sydnee: First of all, Justin, why do we— why do we— I'm going with vomit. We could go with puke, hurl, blow chunks, spew.

Justin: Oh! Blow chunks is the worst. Blow chunks is the worst.

Sydnee: All right.

Justin: I hate that one. Just vomit, like scientists.

Sydnee: Okay. Why do we vomit?

Justin: Ew, upchuck. I hate that one too. Why do we vomit? Well, Syd—

Sydnee: I always liked hurl.

Justin: Our body has what I ha— I like to think of as, a few sort of emergency levers.

Sydnee: Mm-hmm.

Justin: That circumvent you, as a person, and say like, "I know that usually, you're in control of the body. But right now, I, the body, separate from the mind, am going to do an action that I need." Now some are reflexive actions that you need to survive. I'm thinking here of your heart beating, your lungs breathing, things like that. But I think sometimes the body has, like, emergency levers too, where it's like, "Nope, nope, nope… that's it. Nope. Come on, everybody out."

Sydnee: Yeah.

Justin: "I'm taking control." I think diarrhea is like that. Sneezing's like that. Like—

Sydnee: Mm-hmm. Yeah. I mean, it's similar. Yeah, similar idea. And, I mean, you're basically right. Like—

Justin: And you pee your pants when you hear one of my *hilarious* jokes.

Sydnee: Our body, either correctly or otherwise, sometimes it's not right about this but generally believes—

Justin: It's always right. It's the body.

Sydnee: [chuckles softly] … there is something in your stomach— in your gastric contents that needs to be removed quickly, forcibly, out of concern

for your safety. Some sort of toxin. Some sort of poison. Something bad has upset our system, and our system is saying, "Evacuate."

Justin: Yes.

Sydnee: That's vomiting, right?

Justin: That's vomiting.

Sydnee: That's vomiting. Um, so there's a point to it. There's a— and I think what's interesting when you look into medical history, and we'll get into this, is that that's why there are as many ways that humans have tried to, like, stop vomiting from happening as we have tried to enable ourselves to vomit.

Justin: Yeah.

Sydnee: Right? Because we thought it was curative for various reasons. Um, so, basically, at that point when your body has decided that there is something bad in it, uh, either nerves from your stomach tell your brain, "Hey, I'm upset. I'm irritated. I got to get emptied out immediately. We can't wait for the usual method. That's gonna take too long. We need to go the other route."

Or sometimes, your brain starts the process. There's actually different places that can be the— like, the stimulus for vomiting.

Justin: Mm-hmm.

Sydnee: There's an area— the area postrema in your brain, the vomit center.

Justin: By the brain, you don't necessarily mean the mind. If that distinction makes any sense.

Sydnee: No, it's literally a part of your brain that will, like, if stimulated, make you puke. So basically, when— when we get that signal back to our

stomach, we— there's a whole series of things that happens. Your vocal cords close over, right?

Justin: Protection.

Sydnee: Uh, our diaphragm is lowered. That gets pulled down to create negative pressure, and that opens up the esophagus. And then your stomach muscles contract in a certain order that forces all of the stuff in it through this opened esophagus, past the glottis that's closed, and, bleh, out.

Justin: It's really incredible.

Sydnee: [laughing]

Justin: I mean, it is incredible. It's gross. But it *is* really incredible that your body's, like, "I have one— there's one—" [laughs] It reminds me of, um, in, you wouldn't be familiar with this concept but, um, in *Star Trek,* there was this thing where, you know that— you can imagine the Enterprise?

Sydnee: Mm-hmm.

Justin: Okay. There's this thing where if stuff gets really bad, you can separate the saucer from the rest of the ship, right?

Sydnee: Oh.

Justin: It's, like, a last-ditch, like, "Okay. We have one thing and—

Sydnee: Mm-hmm.

Justin: … no one's going to like this, but we have one thing— weird thing here that we know how to do for some reason. Now, later on, after they did it the first time, and I don't know when they did it the first time, but it became a much more common like— I don't know, somebody, like, [chuckles] had a really bad toot and they're like, "Ew, [through laughter] separate the saucer! Get it out of here."

[normally] But that's what it reminds me of. Just your body's, like, "I mean, I have one last-ditch effort." [wheeze laugh]

Sydnee: This is all I got.

Justin: Not everybody's gonna like it, but here we go!

Sydnee: And this— and this can be the result of something like a virus or a bacteria like an illness. It can be a poison, a chemical toxin. It can be because of hormonal changes or other things that might affect, like, the vomit center in your brain. Like, obviously, pregnancy— and we'll talk a little bit about vomiting and nausea and pregnancy.

Medications can cause this. It can be, uh, something that, like, emotionally, psychologically, you know, your sensory stimulus. You smelled something gross.

Justin: Mm-hmm.

Sydnee: You saw something gross. You saw someone else vomit…

Justin: That's weird.

Sydnee: And that makes you vomit.

Justin: That's a weird one. [wheezing laugh]

Sydnee: Do you know why?

Justin: [through wheezing laugh] Think about it.

Sydnee: Do you know why it's thought— why do we probably vomit when someone else vomits?

Justin: Because we—

Sydnee: Because you can trigger, like, a whole cascade of vomiting.

Justin: ‘Cause, theoretically, we ate what they ate? ‘Cause, we’re in a community.

Sydnee: So, traditionally, the human animal hunts and gathers in groups. And, so, it is likely, from, like, an evolutionary standpoint, that the person in your proximity whatever they’re eating it is— it *was* likely— nowadays, I would say that’s not necessarily true, but it *was* very likely that you ate the same thing that the person near you ate. And so, you see them puking, so it’s sort of a— and this, your body is assuming, “I’ve also been poisoned, and I must also—

Justin: [bursts out laughing]

Sydnee: “I must also get rid of what’s in my stomach.” Nowadays, that doesn’t really hold because, like, what if you’re in the food court at the mall? You know? Like, you ate at Sbarro. They ate at Panda Express.

Justin: Yeah.

Sydnee: But your stomach doesn’t know that.

Justin: Yeah.

Sydnee: It’s too late. It doesn’t know about the Sbarro rule. [laughing softly]

Justin: Yeah. Um, maybe my body’s just kinda playing the odds there with Sbarro. I don’t know.

Sydnee: [through laugh] That’s true. Um, “Why do kids puke so easily?” I thought that was an interesting question, ‘cause they do.

Justin: They do.

Sydnee: This is something that I— it’s like the—

Justin: It’s really weird.

Sydnee: It's one of the— up there with, like, "Everything is temporary." That's, like, my chief parenting tip for people and, like, "How— what's your parenting advice?"

Justin: And transitions are seldom smooth.

Sydnee: And transitions are seldom smooth. And, by the way— and I also would never give parenting advice unless somebody directly asked me.

Justin: Yeah. That's my number one.

Sydnee: That's another tip.

Justin: That's your number one.

Sydnee: Yeah. Unless you ask me for advice, I'm not going to give you any. But, um, that is one thing I will say, "Kids just puke sometimes." And, like, always check and make sure they're okay. I'm not saying, like, "Assume it's nothing." But a lot of times, they just puke, and then they're fine, and you never really figure out what the heck happened.

Justin: Yeah.

Sydnee: And that's kids. Their bodies are more sensitive to— the same signals that make us vomit; their bodies are just a lot more sensitive to.

Justin: Which makes sense, right?

Sydnee: If there's any kind of physical or emotional stressor.

Justin: I mean, they're probably also more susceptible to some of the toxins and stuff that we talked about, so the body— the body maybe has a shorter trigger on that kind of thing.

Sydnee: Yes. Yeah, it has a lower dose, kind of tolerance. Also, like, just very practically speaking, the GI bugs that we all tend to get in our lifetime, we get the first time we're exposed to, and we tend to be exposed to them when we're kids.

So, like, kids are going to get sick more often. We know this. And so, they're going to puke more for that reason too. So, any illness or injury can make a kid hurl. Like, anything that, I mean, if you stub your toe really hard, it might make you, like, feel a little nauseated for a second. You know that feeling?

Justin: Yeah.

Sydnee: Or, like, if you bonk your head and you get that moment of like, "Oh, I feel nauseous for a second." For a kid—

Justin: People with nuggets. It happens if you get struck in the nuggets.

Sydnee: [chuckles] Yeah. Mm-hmm.

Justin: Or by— if you— it's actually worse if you get a nugget tap by, like, uh, if you're ever wrapping an extension cord or something like that, where it's just bare— sometimes that can be even worse. But anyway, yeah, it's the nausea.

Sydnee: Any sort of— yeah, any sort of physical thing that, like, you may have as an adult, that moment of, like, you feel sick for a moment. For a kid, it will probably just turn into a puking episode. Um, that's not to say that if your kid pukes, ignore it. Again, obviously, you know, any time our kids are sick, I am concerned.

Justin: Yeah.

Sydnee: I am making an effort to keep them hydrated at that point. That's one of the biggest worries with kids. You know, if there are other serious symptoms, fevers, or they're confused, or they're hurting somewhere else, any abdominal pain, *anything* else. This is not me writing off vomiting. It's just an acknowledgment that kids puke easier.

Justin: Yeah.

Sydnee: And sometimes, like the other night, kids puke, and then they're fine. And the next day, they're running around eating ramen for breakfast and having no problem, so I don't know.

Justin: Yeah. I don't know.

Sydnee: Um, morning sickness, which is obviously a misnomer.

Justin: Right. I think we covered that probably.

Sydnee: Yeah. Nausea and vomiting in pregnancy can happen any time. We've talked about this a lot. Why does it happen? You know, we still don't know. [chuckles softly]

Justin: Great. [laughs]

Sydnee: Which, by the way—

Justin: Thanks, science.

Sydnee: … unsurprising. Unsurprising that this problem is not— has not, historically, been important to the people who decide what we research. We haven't done a lot of great studies. Hormones have always been blamed. Like, "Well, probably your hormones, they're changing, so you're nauseous."

What's interesting, though, is those levels don't peak at the same time that the nausea and vomiting of pregnancy usually occur.

Justin: Hmm.

Sydnee: Like, they don't coincide very well. So, it's not a— it's a messy explanation. It's not a clean explanation. I'm not saying that hormones don't have anything to do with it, but it doesn't hold water completely. We know that smooth muscle relaxation happens in pregnancy. Part of that is, like, important. Everything, sort of, relaxing so you can stretch and accommodate, like, you know, a human, um, and then birth it from your body.

Justin: Mm-hmm.

Sydnee: But that, uh, stretching and relaxation of smooth muscle allows for the lower esophageal sphincter, the bottom of your esophagus, to loosen, which allows for reflux a lot easier. Thank you very much, Charlie and Cooper. That was terrible.

Justin: Yeah.

Sydnee: And also, um, it delays the speed that your stomach empties. So, like, food will sit in there a little longer. All those things. I don't know. We also know it's genetic. We still don't know exactly why it happens.

Justin: Great.

Sydnee: But part of this is we don't understand nausea very well.

Justin: Really?

Sydnee: No. We still— like, vomiting, we have a much better fix on. Like, where do the impulses start, and what triggers them, and how can we block them, and all those things. Nausea's still a *little* bit of a mystery 'cause nausea's worse in many ways.

Justin: Yeah. I would take pretty much any symptom over nausea. Honestly, I hate being nauseous.

Sydnee: The— oh, me too. And that's what's interesting about it, is that we don't have a great fix for nausea, but we do have a lot of things that will probably make you stop puking most of the time.

Justin: Hmm.

Sydnee: But nausea's tougher.

Justin: Yeah.

Sydnee: Yeah, it's really interesting when you start digging into the research on nausea and vomiting, how there is still so much that we don't understand and don't know how to fix and don't know. And I think part of it is because so often the causes of nausea and vomiting are transient.

Justin: It's like it's over before you get too worked up about it.

Sydnee: So, we move on. And then, I think the other part of it, is what I want to get into with the history, is that our perception of vomiting throughout time and place in different cultures is different. Um, whether it's a good thing or a bad thing. [chuckles softly] Whether it's the goal or the thing we're trying to treat.

Justin: Mm-hmm.

Sydnee: Um, that has shifted, and so I think that's part of it. We've all heard of that the Ancient Romans had something called a vomitorium.

Justin: Yes. A big room that they vomited in.

Sydnee: Right. That is what you think a vomitorium is, right?

Justin: Yes.

Sydnee: Okay.

Justin: Yes, they would all—

Sydnee: Why would they do that?

Justin: 'Cause they—

Sydnee: Tell me the myth.

Justin: 'Cause they were… oh. I thought I was telling you the facts, but okay. They were, um, they were doing the, um, you know, they were eating in great feasts and banquets.

Sydnee: Yes.

Justin: And they would eat so much. And then they would use a feather to throw up, and then they could eat more.

Sydnee: Okay. So, it was, like, intentional.

Justin: Like binging and purging.

Sydnee: Right.

Justin: Yeah.

Sydnee: So, that they could just keep eating more and more. And it's used as, like, this symbol of how gluttonous the Romans were, right?

Justin: Yeah. Yeah.

Sydnee: Okay. The term vomitorium was first used by the Roman writer Macrobius in "Saturnalia." And he was not talking about a room where people vomit.

Justin: Okay.

Sydnee: Okay. That is not what a vomitorium was.

Justin: What else was it?

Sydnee: He was talking about entrances and exits to, like, amphitheaters and arenas.

Justin: Mm-hmm.

Sydnee: And how, as people were coming in or out of an event, how it would look like they were vomiting people into a space or back out of a space.

Justin: [incredulously] Really?

Sydnee: And he talked about how that he called them vomitoriums kind of like, a little— as a joke, like, tongue in cheek.

Justin: [sighs] Oh.

Sydnee: Because, like, a place where people are being vomited into or out of a space.

Justin: Weird.

Sydnee: That's where the word vomitorium came from.

Justin: That is wild. Okay.

Sydnee: Yeah.

Justin: Wow. Now that is interesting.

Sydnee: And, like, what happened, people built on that kind of concept that the Romans did feast.

Justin: Yes.

Sydnee: And they did drink a lot and drink to excess. And so, like, drunkenness and vomiting and eating so much you vomit, like part— that *did* happen. I mean, people did get drunk and puke. But, like, all through human history, that's happened.

Justin: Yeah. We're wild about that.

Sydnee: Not just the Romans. But that wasn't the plan. [chuckles softly]

Justin: Huh.

Sydnee: That wasn't part of the plan. [chuckles] Um, following that, there were many who wrote of Roman excess. And they built on that with, like, Seneca the Stoic, wrote about it and made a comment like, "They eat so

that they may vomit, and they vomit so that they may eat." But he wasn't literal. That wasn't supposed to be a literal like, "They're eating."

Justin: He's just having some fun. He's having a little jab.

Sydnee: He's was basic— I mean, he was a stoic, and so to him, it was all gross and unnecessary and—

Justin: Yeah. Of course.

Sydnee: … excessive and so, like— but it wasn't literal. However, over time the word vomitorium and our understanding of the way, like, the language was constructed, vomitorium would be a place where you would vomit.

Justin: Mm-hmm.

Sydnee: And so, the myth persisted with this literal kind of understanding that, "Oh, the Romans were so decadent that they would eat so much and then want to eat more, but not be able to fit it into their stomachs, so intentionally go vomit to eat more so that they could eat, you know, just keep eating food all the time."

And, like, that was, I think, echoed in, like, *The Hunger Games*. They talk about that with, like, the people who live at the Capital. And it's that same sort of idea, um, but that wasn't what vomitoriums were.

Justin: Well, there you go!

Sydnee: I know! I know!

Justin: Wow!

Sydnee: I know. I was fascinated as I was reading about vomiting, and I learned this fact.

Justin: I feel so much smarter now.

Sydnee: Um, I want to talk about vomiting used as either a symptom to treat or a means of treatment. 'Cause, we have done both, but before I do that.

Justin: Yup.

Sydnee: We gotta go to the billing department.

Justin: Let's go!

[ad break]

Justin: All right, Syd. Let's get medical.

Sydnee: All right.

Justin: Let's get serious about nausea and vomiting.

Sydnee: So, we first— when we first started trying to treat it— so, let's talk about trying to fix it. When we first started trying to fix it, it was really because of seasickness. And we've done a whole episode on mal de mer, seasickness, so I'm not going to go over it again. Now—

Justin: Is that separate from the Seasick-Proof Saloon? Or is that part of the episode?

Sydnee: That was part of the episode.

Justin: Wow.

Sydnee: One of my favorite episodes.

Justin: That's a good one.

Sydnee: Yeah. If you haven't listened to it, I don't even want— there— a guy built a seasick-proof saloon, and you don't know what the means, but you should listen to the episode from that day.

Justin: It's one of the best. It's weird that it's not a movie, honestly.

Sydnee: Uh-huh.

Justin: The seasick-proof saloon should be a movie.

Sydnee: Nobody steal this idea. TM, I want to make a movie.

Justin: No, they don't have to steal the idea. They just need to, like—

Sydnee: No, I want to make a musical. It needs to be a musical. I just haven't written it 'cause I can't write music, but I'm going to. [laughs]

Justin: They should license— someone should option that episode of a podcast.

Sydnee: Mm-hmm. [laughs softly]

Justin: Like, people do that. Like, just option that episode. Someone, please.

Sydnee: I want to be part of the creative force. I have so m— I have pictured this musical in my head so many times.

Justin: [speaking quietly] But what if we could just get a big check? Just a huge check.

Sydnee: 'Cause I want to be part of the creative process. Anyway, um—

Justin: You artists, man. I tell ya.

Sydnee: [chuckles softly] Yeah. Seasickness was the first focus because it was inconvenient. We ne— like, sailors had a job to do, and so if they were, you know, hanging over— overboard puking, that was inconvenient. Um, one medication that seemed effective early on was hyoscine or hyoscyamine. It was derived from belladonna and family. So, you know, a lot of these sort of plant-based things that we found—

Justin: Belladonna and family does sound like a folk group from the sixties.

Sydnee: [chuckles] It does.

Justin: For sure.

Sydnee: [laughs] Um, they actually trialed giving it— like, they actually tried these medications sort of like in a scientific fashion more or less. Like, when sailors were going out during storms, like, give some of them the medication and see if it worked. What'd— I mean, that's science.

Justin: Yeah, that's science.

Sydnee: You know? Um, it did work. And later, they started using atropine and scopolamine. Which we don't use atropine for this, we use atropine today for other things.

Justin: We use scopolamine now.

Sydnee: But we use scopolamine to this day.

Justin: Yeah. You had a transdermal scopolamine patch when we went on the cruise before.

Sydnee: Mm-hmm. Mm-hmm. And we have— all of these medications I'm talking about, by the way, have a ton of, like, side effects if not used properly or dosed properly, or, like, depending on if you're taking it orally or, like, in a patch. So, like, these were all early attempts, that certainly *did* help with nausea and vomiting, but probably could have done a lot of bad stuff and did at times.

Justin: Mm-hmm.

Sydnee: So, early attempts, but not our best effort just yet. Um, I mean, they can affect, like, your heart rate and things like that.

Justin: Yeah.

Sydnee: So, they can do a lot of dangerous stuff. The next class we investigated were antihistamines. Um, it took us a long time to figure out how to block histamine for allergic—

Justin: Mm-hmm.

Sydnee: I know what you're thinking. Like, "Antihistamines, that's for allergies."

Justin: Yes.

Sydnee: Well, you've got different— there are also histamine blockers that we use for acid reflux.

Justin: Oh, okay.

Sydnee: In our stomach. 'Cause, we have histamine released there.

Justin: So, like, what famotidine is?

Sydnee: Yeah. Like famotidine, exactly. Pepcid, brand name. Um, and, uh, but we found that with some of these antihistamines, they were medicines that crossed the blood/brain barrier as well, and that helped with other things.

Justin: Mm-hmm.

Sydnee: Like, that's also why the early ones caused drowsiness.

Justin: Hmm.

Sydnee: Like, if you think about Benadryl versus Claritin.

Justin: Oh, yeah.

Sydnee: That's what we're talking about. Stuff that can get into your brain and make you drowsy, and stuff that doesn't kinda get into your brain. Um, but because these early ones did cross that barrier, it allowed them to get to

parts of the brain that were responsible for nausea and vomiting, which made them somewhat useful for that too. The first time we figured that out, it was just a lucky break.

Justin: Hmm.

Sydnee: So, dimenhydrinate, which many of you may have taken for car sickness.

Justin: Mm-hmm.

Sydnee: Dramamine is what we're talking about, was being checked out in 1947 as a treatment for allergies, for hay fever.

Justin: Hmm.

Sydnee: Right? So, they're looking at it for allergic issues, and one of the patients, who they were trialing it in, was a pregnant woman who had nausea related to that and carsickness. And she took it for the hay fever but then noticed that when she rode the tram, she didn't get sick.

Justin: Hmm. Weird.

Sydnee: And she mentioned that, you know? "Hey, I think it actually helped with my carsickness." And so, they trialed it again with a placebo, and it didn't help, and so then they thought, "Well, hey, we're onto something." So, then they started—

Justin: Shout out to that lady, by the way, who must have had extremely limited transit options if she's like—

Sydnee: [laughs]

Justin: … "Every time I get on this tram. Oh well, gotta get to work. [chuckles] Here we go. Give me a bag. Going for it."

Sydnee: So, they gave it to— they gave it to, soon after that, a bunch of US troops who were crossing the Atlantic, um, during a particularly rough—

rough water time, and it worked really well compared with placebo again. This led to, like, Benadryl, diphenhydramine being used.

Justin: That same lady— sorry, [chuckles] that same poor woman also had hay fever so bad she would agree to participate in an [through wheezing laughter] untested experimental trial of a hay fever drug. That is a rough— that is a rough life that woman has, man.

Sydnee: I know. You know, it's a shame I don't know her name. I need to see— I need to do more digging and see if I can find the name of this woman. She needs to be made famous for her contribution to medical science.

Justin: That's a rough— [wheeze-laughs] that's a rough one.

Sydnee: Ah, yes. And her bravery. Um—

Justin: We all go through life scathed and unscathed in our own ways, but whoof…

Sydnee: [chuckles] So, this was interesting. So, we had these drugs, like— well, what we're talking about now are antihistamines, like Dramamine and Benadryl, which would help with these allergic symptoms.

Justin: Would Benadryl help with nausea?

Sydnee: It does to an extent.

Justin: Really?

Sydnee: Yeah. It's not— the reason we don't think of that as, like, a nausea drug is we've got better ones now.

Justin: Yeah.

Sydnee: But, like, if you had nothing else, you could take a Benadryl, and it would probably help to a degree with an upset stomach.

Justin: Good to know.

Sydnee: Same way that, like, if you take a Dramamine, it'll stop you up a little bit.

Justin: Yeah.

Sydnee: But I wouldn't use it as a treatment for diarrhea. But if you take it, that will happen.

Justin: Sometimes I take it on long flights to keep myself from having to get up and pee if I'm in a window seat.

Sydnee: It does— it does that a little bit. A lot of these— and this is something too. A lot of these early medications weren't as— we now try to make drugs that are cleaner. And what I mean by that is, they do one thing. A lot of these early medications sort of did all kinds of things. And we didn't know exactly what they did. We knew they did this one thing, and then we'd get them in people and go, "Oh, look, they do these other things." [chuckles softly]

Justin: Weird.

Sydnee: Or we would know ahead of time, like, "Well, they're going to do these other things, but it's all we got."

Justin: "This cat was really depressed, and then he quit smoking? What the heck?"

Sydnee: [laughs] Well, I mean, that is— that is… Right?

Justin: Yeah.

Sydnee: Like, that's how we figured stuff out. Um, nowadays we have— we usually have a better idea going in, [chuckles lightly] if we're going to find those sorts of unintended effects or, like, we find them in trials with animals and stuff before they get into humans. It does still happen, but it's not as common as it was back then.

Um, these drugs, including later on Phenergan, which is a mainstay of nausea medicines today. Which came after those, only blocked some kinds of nausea, is what they began to find. Um, like I said, there are different ways that your body can start, sort of, the nausea vomiting response, whether it's, like, something directly influencing the stomach or something in the brain.

Justin: Mm-hmm.

Sydnee: So, they started trying to work on a class of, like, psychiatric medications that worked on Dopamine receptors in the brain, and they thought that would help with the areas of the brain that can trigger nausea and vomiting. Um, this was also found— again, it did help some with the nausea, but once you start messing with dopamine, you get a lot of other side effects.

Justin: Right, it's tricky.

Sydnee: You know, the unintended. So, like, risk/benefit ratios start to not be so great. Similar issue with, like, steroids were tried later, and, like, that can help with nausea, but again, you can't take steroids forever. There are lots of side effects if you keep taking steroids.

Justin: Right.

Sydnee: Um, there's a medication called metoclopramide, or Reglan, you may have heard of. I was given Reglan as a very young baby for reflux.

Justin: Oh, wow.

Sydnee: We used to give Reglan a lot, or metoclopramide, but then we found that there were a lot of side effects with it too. It can still be used with people with delayed gastric emptying or gastroparesis. Like, related usually to diabetes or something else that affects your nervous system. But, again, long-term use has other side effects, so you have to be careful.

Justin: Yeah. Yeah.

Sydnee: It's not for everybody. In the 70s, they started working on cannabis as an option. Still, a popularly requested [chuckles] medication.

Justin: Yeah. Great.

Sydnee: For nausea.

Justin: People are wild about this herb.

Sydnee: [laughs] People love cannabis for nausea. That's why they love it.

Justin: 4/20, I'm nauseous, just as it happens.

Sydnee: [laughs softly] It was never studied to the extent as these other medications for reasons that I don't think I need to explain. Um, once it was criminalized, it was really hard to [sucks air through teeth] study it as a useful medication. 'Cause even if you found anything—

Justin: It's—

Sydnee: … it was still illegal.

Justin: Right.

Sydnee: You know?

Justin: That's the same kind of short-sightedness that's blocking our research into, like, psychoactive— like, hallucinogens and stuff like that.

Sydnee: Mm-hmm.

Justin: Shrooms. You know? All that stuff.

Sydnee: Yeah, and that's— I mean, and— you know, and if— if we kind of look at where we are with cannabis and as sort of a side note as to, like, where we might end up with these other sorts of drugs. Um, a lot of the problem with medical cannabis being legalized in places, without recreational

cannabis being legalized, is that you're kind of thrusting this new medication, so to speak, into the hands of providers and of doctors.

And we don't have the body of evidence to tell us exactly what to do with it. And then also, you have sort of the cultural overlay of, like, it should just be legal. And so, I don't really care, you know?

Justin: Mm-hmm.

Sydnee: Like, everybody can use it if they use it responsibly, and I don't— it's safer than alcohol in so many— I don't know. But that's why it's so complicated.

Justin: I don't necessarily agree with you with everybody. I feel like, um, kids probably shouldn't, but I don't know.

Sydnee: No, okay. I meant adults.

Justin: It's just too—

Sydnee: No. I don't want—

Justin: Different strokes for different folks.

Sydnee: I meant adults. I didn't mean kids.

Justin: I just want you, Sydnee McElroy, candidate for the West Virginia House of Representatives—

Sydnee: [laughs softly]

Justin: … thinks kids should be blazing it 24/7.

Sydnee: No! Adults! Adults. I just I—

Justin: Maybe that's why they like—

Sydnee: I absolutely believe it should be legal.

Justin: Maybe that's why they can get into blipping.

Sydnee: [laughing softly]

Justin: 'Cause they're, like, a little bit stoned.

Sydnee: No. But I am open about the fact that I think it should be legalized recreationally. Because I don't think as a physician, I don't know that putting it in my hands— like, making me the gatekeeper, is just damaging to— I mean, it certainly damages the relationship between patients and doctors, which is already strained for a million other things that we are the gatekeepers to.

I just think that this is— it's more damaging to that relationship in the long run and doesn't help anybody in it. It should just be legal. For adults. [laughs softly] The next—

Justin: Good. Didn't think you'd have to clarify that.

Sydnee: Well, I didn't think I would, except you—

Justin: [bursts out laughing] Sorry.

Sydnee: I didn't know you were, like— you were my opposition on this one.

Justin: [imitates newscaster] "Sydnee McElroy says that she thinks everybody should have weed."

Sydnee: No, I don't. See? Okay. The next decades would, after the 70s— and part of— this is also part of why cannabis was not further, and some of these other things weren't, like, looked into further, is that chemo was really brought into, like, common use in those next decades.

Justin: Mm.

Sydnee: And so, there became this increased focus on research into anti-emetics, medications that would stop nausea and vomiting, because of the side effects of chemotherapy.

Justin: Sure.

Sydnee: Right?

Justin: Yeah.

Sydnee: Um, at first medic— metoclopramide was the best thing that we had, but it wasn't perfect. I said there were side effects. They knew that it was working on receptors that they weren't identifying. That was the thing about it. They knew it did one thing, but then it was also helping in other ways, and they weren't sure.

Justin: Mm-hmm.

Sydnee: So, it took them a while, but they figured out there's this other set of receptors called the 5-HT3 receptors which are only important in the sense that, "This is where we made a major breakthrough with nausea and vomiting."

Justin: Mm-hmm.

Sydnee: If we can block them, we can prevent a lot more nausea and vomiting than we did before. And we figured out how to with medications like Ondansetron, which you know better as Zofran.

Justin: Uh-huh.

Sydnee: Which has become, like, the mainstay nowadays.

Justin: Did you say— [disappointedly] Oh, man.

Sydnee: What?

Justin: It's called Dansetron?

Sydnee: Ondansetron.

Justin: Good! Okay. Ondansetron.

Sydnee: [chuckles softly]

Justin: 'Cause that— they were going to be in a lawsuit with me—

Sydnee: [laughing]

Justin: … over my dancing robot, Dance-a-tron.

Sydnee: No, I'm sorry. It's not Dance-a-tron. [laughs]

Justin: [robotic voice] "Dance-a-tron must boogie. It is in my programming."

Sydnee: Um, and then, you know, since then there are other medications that we have had in more recent years. Especially, like, you'll see there are some medications that we *really* only use for the nausea and vomiting associated with chemo specifically. Zofran used to be that. Nowadays we use it for a lot more, you know, conditions that cause nausea and vomiting.

But— and again, there are— there are side effects, things to monitor with Zofran, but it's probably what most people turn to nowadays as if you're going to go with a prescription medication. If you *need* something like that for nausea and vomiting. And there are medicines like that in other countries instead of Zofran. They have their own 5-HT3 blockers.

But anyway, purgatives. Just a brief mention of the other side of that. Something for a long time, and we've talked about this a lot on the show, medicines that could make you have diarrhea, that could make you pee, that could make you vomit, were thought to be really effective because they did something.

Justin: Mm-hmm.

Sydnee: And part of that has to do with, like, overlap with spiritual and religious traditions that saw this as important.

Justin: Hmm.

Sydnee: Like, it can be an important and, like, um, not intentional, but, like, it's an okay part of, like, certain Ayahuasca ceremonies.

Justin: Okay.

Sydnee: You might vomit and that's part of it. Um, there are exorcisms performed where vomiting becomes part of it. We've seen these documentaries. [chuckles]

Justin: Yes. Right. That's true.

Sydnee: And that is, like, a spiritual… purge, I guess, that is occurring at that point. And because of all of these different sort of overlaps, and alongside with, like, traditional and folk medicine, which said, like, "Sometimes you need to throw up to be healthy," we figured out medications that do that. In the Middle Ages, there was something called the antimonial cup.

Justin: Whoa.

Sydnee: Which was a cup made of antimony. It would be something you have in, like, your family. Like, you would have it up on the shelf. Like, it wasn't—

Justin: Wow.

Sydnee: … your individual. It was, like, the family antimonial cup and you would probably pass it along throughout, like, the generations. And, basically, antimony is a toxic substance that will make you vomit. So, what you would do is, if you were sick, you would put— the traditional recipe was you would take some white wine, it could be any wine eventually, but white wine was preferred.

Put it in the cup at 6:00 pm, let it sit all night, and at 7:00 am the following morning you would drink the wine. A full dose for adults; half dose for kids. And it would have leeched enough antimony into the wine that it would make you vomit.

Justin: [through laughter] That cannot be healthy! I just—

Sydney: No! Don't do this! No, we don't do this anymore. And there are only— I think there are only, like, a handful of these cups that still exist in the world. But these used to be passed down through families, the antimonial cup. There was Ipecac syrup, which was used, I mean, into the 2000s.

Justin: Mm-hmm.

Sydnee: Before, finally, like, [chuckles] people who took care of kids especially, pediatricians and family doctors were like, "Stop using this stuff." So, Ipecac was around for a *very* long time. You may have had it as a child. You may have seen it in the family medicine cabinet.

Justin: That's a little bit before my time, I think.

Sydnee: It existed into the 2000s.

Justin: Well, I'm kind of a 2000s babysitter.

Sydnee: Well, I mean, our listeners.

Justin: Yeah. They're even— we're all millennials here. I think we can all agree.

Sydnee: It was known, um, by people indigenous to Brazil for centuries before the Europeans caught on. And they gave it to King Louis XIV in 1682, and decided, like, "This is great. We love it. The King likes it. It made him vomit—

Justin: [snort laughs]

Sydnee: "…when he was sick."

Justin: Which is the highest review you can give for something that's supposed to make you vomit.

Sydnee: It's derived from a very pretty plant. I found an Ipecac plant growing out in the woods. [laughs softly] There are a lot of different varieties of it, but I found one. I used my Seek. It's Ipecac, very pretty white flowers.

Justin: Cool.

Sydnee: I told the girls, "Don't eat that."

Justin: And, you know, they're always eating flowers. [wheeze laughs]

Sydnee: [laughs] It has two chemicals that will— actually Cooper does eat plants a lot.

Justin: Yeah, I'm sure. Of course.

Sydnee: You have to stop her. That will induce vomiting, diarrhea, stomach pain, and at higher doses, it can make you *really* sick, but, like, this was found to be useful. Especially if you thought somebody had been poisoned. That's where Ipecac came into play. It was, like, if you thought your kid ate something they weren't supposed to. Or sometimes, just, like, if you have that sort of, you're really sick and you feel like you need to vomit and you just can't.

Justin: Mm-hmm

Sydnee: You know? And you know that vomiting would make you feel better. We've all had that sort of sensation. Ipecac was on the shelf for these sorts of things. And again, mostly for people who had been poisoned. Um, and up until, it was, like, 2013, I think, when it was *finally* stopped completely.

Justin: Wow, that's wild.

Sydnee: It had really fallen out of favor by the 90s, but it took a *while* for it to completely go away. It's still out there, I guarantee. And also, remember that people used to eat mummies?

Justin: Yes! Of course.

Sydnee: Part of that reason is they could make you puke if you needed to, which is not surprising.

Justin: Yeah.

Sydnee: At all. That is, like, the least surprising thing that people would use for that. Um, nowadays we know that, like, even if someone's been poisoned, making them vomit isn't really the best thing to do. If there's a toxic or poisonous, like, substance in their stomach and you make them vomit they could aspirate that.

They could do damage again to the esophagus if it's something that can be erosive to tissues. Bringing it back through the esophagus is not helpful. So, there are a lot more helpful ways that we can treat poisonings than making people vomit now.

Justin: Right.

Sydnee: Which is why we don't pursue this anymore. Um, usually, vomiting is not desirable. And so, we have a number of medications to pre-treat and post-treat and figure out why. Although, we don't always. There are things like cyclic vomiting syndrome where people vomit, and we still don't—vomiting is still somewhat a mystery. Nausea even more so, and especially with kids. Just to sum it all up, this was inspired by Cooper puking and then being fine. She's fine.

Justin: Yeah. Just fine.

Sydnee: Um, sometimes kids puke. It is scary. It's good to remember that kids do puke easily, and in the absence of other symptoms, keeping them hydrated, they usually just stop, and it's fine.

Justin: You know bonus pro-tip for that? You know how you don't want to puke all over yourself, and in your bed, and on your floor? And you'll take five steps to try and avoid that happening. Kids will not. If kids throw up, it is the most important thing that has happened to them. So, if you're going to have a bowl out, make sure it's real close.

Sydnee: Yeah.

Justin: 'Cause they do not care. [laughing]

Sydnee: No, they don't.

Justin: [through laughter] They know they don't have to clean it up, [normally] so they're pretty unmoved if they puke all over everything.

Sydnee: They do. And she really is— I just want to stress we're not making light of something major. She was totally fine. I think it had to do with sugar and maybe swallowing some pool water. We had been swimming that day.

Justin: Yeah. I noticed.

Sydnee: Again, not a good idea, but kids do this stuff.

Justin: [sighs] That's kids. Hey, thank you so much for listening to our podcast. We hope you've enjoyed it. Um, you know, if you ever wanted some *Sawbones* merchandise, some goodies, uh, mcelroymerch.com is the address for that.

Because all sales in June, this month that you're in right now, uh, 10% of merch proceeds are going to Fairness West Virginia this month. So, buy some stuff from mcelroymerch.com this month. Um, we have a book— the *Sawbones* book. It's in hardback and paperback, and you can get it and read it, and I think you'd like it if you liked this.

Sydnee: I think so.

Justin: Thanks to the Taxpayers for the use of their song "Medicines" as the intro and outro of our program. Thanks to you for listening.

Sydnee: Thank you.

[outro plays]

Justin: 'Til next time, my name's Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

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