Sawbones 191: Yet More Weird Medical Answers

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Clint: 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: Sydnee, I'm so excited because we are doing another one of our beloved Sawbones Q&A episodes.

Sydnee: That's right.

Justin: And I just think these are fun. Because it moves fast— sometimes, you know how sometimes I start to get a little bored?

Sydnee: Mm hmm.

Justin: And you can tell, it's like, the eyes glass over and it's like, "How long have we been talking about this?"

Sydnee: Yep. It is incredibly difficult to continue recording with you, you know? Because then I feel boring.

Justin: Huh? Anyway, we uh—

Sydnee: Thanks honey. Thanks. You know what I love about these weird medical questions? And let's clarify, we always do for these episodes, these aren't— this doesn't mean that I am giving out free medical advice.

Justin: The disclaimer's still on there, folks.

Sydnee: Not because it'd be free. I don't mind that so much. It's just that it'd be wrong. Unethical. Somewhat illegal. And dangerous.

Justin: Yeah.

Sydnee: And so, this isn't medical advice, but these are your kind of strange, weird medical queries. And I love reading them, and thank you, everybody, for sending them. We get so many. We get dozens and dozens. And even— there are too many to pick from, so—

Justin: We should also mention that when we say strange and weird, I'm always hesitant to tweet that because it sounds, like, kinda callous, but honestly anything that is out of the ordinary medically is by definition strange and weird. It's not normal. We all have these things, it's a commonality we all share.

Sydnee: Right. And let me clarify this too, the vast majority of emails that I got were titled, "Weird medical question". [laughs]

Justin: Yeah.

Sydnee: So, I'm using your all's terminology. But thank you everybody who sent them. There are so many, and there are many, many more that would have been interesting and fun and funny to talk about.

Justin: Maybe next time. We don't delete them or anything.

Sydnee: We can only do so many.

Justin: Alright, let's go. "I have auditory hallucinations as part of PTSD. I've got great psych support and cope with them quite well, but I'm really puzzled what exactly happens and how do they happen. How is it possible that I 'hear' something and it sounds to me like real sounds when there are no sound waves that my ears have picked up?" And that's from, uh, A-I-N-O. I'm gonna say Aino? That feels right to me.

Sydnee: That seems right.

Justin: Yeah.

Sydnee: This is a good question. This is, I think, an interesting question.

Justin: Thanks Syd, I just came up with it.

Sydnee: Well, no. You didn't.

Justin: Fair enough,

Sydnee: You told us that you were reading it verbatim.

Justin: Yep, yep, yep. Nope, duly noted.

Sydnee: Auditory hallucinations, or paracusis, if you prefer. Which you probably don't. You probably prefer "auditory hallucination."

Justin: I don't. I'm gonna go with the one that I know what it means.

Sydnee: Obviously, this is something that has been documented, I mean, since ancient times. Because they're pretty easy to, you know, explain that sense of what's happening. It's pretty easy to distinguish from other things in medical literature. You know, we can go back to ancient Greek writings and when people talk about, you know, hearing voices that aren't physically present, it's easy to say that, okay, this must be what they were referencing.

And of course, way back in ancient times they were often thought to be something to do with magical abilities, or specifically hearing voices from God, a contact with the divine. Obviously, that's not the case, but that was they were taken as through a lot of the ancient literature.

Justin: You would say that.

Sydnee: They can involve any senses. Did you know that? You can get hallucinations of any sense. Sense of touch hallucinations, sense of taste. Sense of smell.

Justin: I did not.

Sydnee: Yes, any of your senses. And basically, a hallucination is just when you perceive a sound or a visual element or something that is not actually present.

Justin: Okay.

Sydnee: If that makes sense. There is no external stimuli causing that. So, it is present, but it's not from an external stimuli, as we typically assume that it would be.

Justin: Okay.

Sydnee: Now, we have been studying what causes these for a really long time, because it is a really interesting question, why do these happen? And a lot of what we know is from functional MRI.

Functional MRIs are if you've ever seen pictures on, like, medical shows where they have images of the brain where different parts are lighting up, you know, reds and greens and yellows and all different colors. And they're like, "Look, this part of the brain has lit up and that indicates—"

Justin: And if it's a cutting-edge hospital, then it's always like a hologram they can, like, rotate with their hands.

Sydnee: Exactly. You know, we have those.

Justin: Really?

Sydnee: Yeah. It's not a hologram, but it's a 3D image that you can rotate.

Justin: Why are you wasting my time then? It's gotta be floating.

Sydnee: Well, anyway. [laughs] But it has to do with slightly different connections between the areas of the brain that are involved in speech and language perception. Specifically, what we call Wernicke's and Broca's areas. These, we all have these areas of the brain, and they're all supposed to be connected—

Justin: Is that Paul Broca?

Sydnee: Yeah, we've talked about before.

Justin: Whoop whoop!

Sydnee: Hey, nice. Another shout-out to Broca, as we do so often on this podcast.

Justin: What's up, Broca!

Sydnee: [laughs] So, in some individuals, these pathways appear to be a little thinner than we see in others who do not experience these hallucinations. And there appears to be— they light up more and interact more when you watch a functional MRI than they would in someone who

does not have hallucinations. And we even see these patterns that will arise on a functional MRI in the brain that we typically associate with perception of an external stimuli.

So, this is the way the brain looks when a person hears and external sound. Except, there is no external sound happening, but we still see that pattern arising in the brain. Which is why somebody would be perceiving a sound even though there is no external source.

So, basically, what this boils down to is our brain has a lot of neurons, brain cells. They send these little electrical impulses through them that, you know, carry through different pathways in the brain and create different thoughts and perceptions and actions and everything that we do.

The wiring is just a little different. And because the wiring is a little different, some of those pathways that perceive sound or sight or whatever get activated, even when there is no external stimuli to cause it.

Justin: Okay.

Sydnee: And that's— does that make sense?

Justin: Mm hmm. Yeah.

Sydnee: Or at least, that's what we think so far. We're still studying this.

Justin: Oh, cool.

Sydnee: There's still NIH grants that help us fund research into why exactly does this happen, cause the better we understand how and why it happens, the better we're able to treat it.

Justin: Makes perfect sense to me.

Sydnee: Yeah.

Justin: I got another question here. "Are patients going on WebMD and trying to diagnose themselves an actual, real problem?" And that's from Paul.

Sydnee: You know, Paul, everybody's gonna say— I'm gonna say yes, it is a problem, and everybody's gonna say, "Yeah, cause you want them to come to you, doc."

Justin: You don't actually. You're very busy.

Sydnee: [laughs] Well, I want everybody to have access to doctors whenever they need them.

Justin: I would like you to be able to get home at a decent hour, so if you could just go for WebMD, I say.

Sydnee: [laughs] I do not advocate— I think there are lots of times where, you know, there are things that we now have access to on the internet that can be helpful.

You'll see a lot of tips and tricks, like, I've seen this recently, how do you encourage a little kid who is dehydrated because they've been vomiting or something, how do you encourage them to drink more fluids?

You know, I as a doctor could give you some tips and tricks, but there are probably a lot of other parents out there who could give you tips and tricks too, because they've been through it, that wouldn't be off-base.

I think the problem, though, with sites like WebMD are that if you're going to create a database for a lay person to use to learn about what might be going on with their body, you're gonna have to include every possible scenario.

You can't tell— it's not like you can use an algorithm where you click a series of questions and then you arrive at the end and they give you an absolute "Here's your diagnosis".

Justin: Right.

Sydnee: They're gonna tell you what it might be, what it most likely is, oh, and also, every once in a while, here's this really terrible thing that it could be that could mean imminent death.

Justin: And just guess which one your brain is gonna decide is definitely the right one.

Sydnee: So, what I find is that going on WebMD, I would be shocked if this decreases people's actual visits to doctors. I don't think— my worry here is not that you're gonna go on WebMD and listen to them instead of coming to a physician.

Of course, I don't— I would prefer people not do that, I would prefer them always talk with their primary care doctor, but my bigger worry is that I think it causes people a lot of undue stress and anxiety.

Justin: Well, and you joked about, you know, they don't come to doctors because they're going on the internet. I would guess if anything, these services lead to more doctor visits unnecessarily.

Like, if you see oh, well I've got, you know, terminal butt flu, then your next call is not, like, the funeral home. You're gonna go to the doctor, the actual doctor, and be like, "Doc, I got bad news for you. Do you have any butt flu specialists there?"

Sydnee: [laughs] No, but here's the thing, that's the other part of it that gets tricky. You're not gonna come in and tell me that you think you have terminal butt flu because you read about it on WebMD. Because patients know that doctors would prefer you not read about it on WebMD.

So, a lot of times patients won't wanna tell me that, because maybe they're embarrassed, or they feel awkward about it, or they're afraid that I'll get angry, which I don't— I can't see myself ever getting angry or upset about it.

But because they're not entirely forthcoming about their fears, I might never get to, "Oh, you're really worried about *this*. About terminal butt flu. Oh no, here's why you don't have it and here's all the reasons that I don't think that's' the case and why WebMD may have said that. But no, it's probably these other ten things before it would be that."

But sometimes patients don't wanna tell me that, and so sometimes it takes a long time to get to the root of their fear and anxiety. So, I think that's the problem with some of these sites, is that they're creating a lot of anxiety, not giving you real answers, and maybe not facilitating a real, open, honest dialogue between you and your physician.

Justin: "Sydnee, the nail on my big toe recently fell off after I hurt myself in a stupid manner. I assumed it would grow back, but a friend told me that I damaged the nail bed and it's gone for good. Is there a way to tell if it'll grow back? Bonus points if that doesn't involve me having to look at my toe. That thing is gross. My whole question is gross. I'm sorry." That's from EJ. [laughs]

Sydnee: [laughs] EJ, first of all, I don't think your question is particularly gross.

Justin: You wouldn't.

Sydnee: No. I am very sorry that your big toenail fell off.

Justin: It happens.

Sydnee: The first time I read this, by the way, I thought you said your big toe fell off and I thought that would—

Justin: Also, I cannot imagine— since you did not include the stupid manner in which you hurt your toe, I cannot fathom how stupid it must actually be, so I'm very excited.

Sydnee: [laughs] I wish— please send us a follow-up, we won't share it.

Justin: Yeah, just for us.

Sydnee: We won't tell anybody. Just for us. Please send us a follow-up email and let us know. So, here's the thing: Your nail is probably gonna grow back. Most of the time—

Justin: I heard probably in there, Sydnee.

Sydnee: Most of the time, the nail grows back. The vast majority of the time.

Justin: Mm.

Sydnee: The only concern is if you damaged what we call the nail matrix.

Justin: Mm hmm. [snorts]

Sydnee: If you did damage to the matrix. [laughs]

Justin: Right. If you did damage to the matrix, Coppertop, then take the blue pill and your foot will— just once, I want my toenail to fall off and really feel it, and know what that feels like, you know?

Sydnee: [laughs] The matrix of your nail is the, what we think of as the nail bed, the growth plate of your nail. It's where the nail comes from. It's

at the base of your nail, right underneath the skin there. So, if whatever injury occurred didn't really involve that part of your finger, you should be fine.

If it did, if significant damage occurred to that specific section— I'm sorry, not your finger, your toe. This is your toe we're talking about. Of your toe, there's a chance the nail wouldn't grow back, although most of the time, it still does grow back, it just might grow back with a ridge on it or, like, a slight discoloration on it, or something like that. Sometimes that nail can come in a little irregular.

Justin: I actually have personal experience here, because of my finger.

Sydnee: That's true, you do.

Justin: A TV fell on my finger when I was four and it, the nail is now— first off, the finger looks so whack. And it's, like, flat and it looks ridiculous, like a big toe on my hand.

Sydnee: It does look like a toe finger.

Justin: And then my nail is actually split on the side. It's permanently split down the middle.

Sydnee: So, that's a good example of you damaged the nail matrix and so the nail did grow back, but it grew back a little differently. That's—

Justin: So weird.

Sydnee: Even if you damage the nail matrix, that's probably still the more likely case. It's rare that the toenail just does not grow back. But if it's not back yet, do not fret. It can take up to 18 months for a toenail to grow back.

Justin: Hachi machi.

Sydnee: So keep on waiting.

Justin: Hang in there.

Sydnee: Yeah.

Justin: Um, let's see. We've got another question here. "Why do they say that an apple a day keeps the doctor away? What if you're allergic to apples? Is it possible to be allergic to apples?" That's from Libya.

Sydnee: I think— I love this question and I started reading about it, and I thought, "I wonder if anybody's ever done research on this," and oh, I love, I love being part of a field where there are other, like other people have thought, "Huh, I wonder if an apple a day really does keep the doctor away. Let's find that out. Let's get a grant and do a study."

I love being— I love that there are people who think like that. So, first of all, where did this come from? The original saying comes from Wales, probably the 1860s, and it used to be "eat an apple on going to bed and you'll keep the doctor from earning his bread."

Justin: Mm. That sounds like a tagline from when apples were invented.

Sydnee: [laughs]

Justin: You know what I mean? Like, we got this new thing called apples.

Sydnee: I think we have evidence that maybe apples date back a little further than that.

Justin: What, just—

Sydnee: The 1860s.

Justin: The Bible?

Sydnee: Yeah?

Justin: There's an apple in that book. That's an old one.

Sydnee: Well, I mean, also, like, a lot of ancient texts talk about apples, I bet.

Justin: Yeah. Assassin's Creed, for example, the apple is very important.

Sydnee: You know Pliny talked about apples.

Justin: Loved them.

Sydnee: I'm sure he had 80 different cures that involved apples. The first time we saw the saying in its current form is 1922, and it was basically— I mean, it's kinda straightforward. Its based on the common belief that fruits and vegetables are healthy.

Justin: Is that a belief? Or is that— well, we know veg—

Sydnee: Well, the long term belief. This has always been a perception and yes, of course, we know this is true [crosstalk]

Justin: And we do know vegetables, specifically leafy greens and cruciferous vegetables, are healthy.

Sydnee: Yes.

Justin: Fruits, of course are not, as we've established on this program.

Sydnee: Well, fruits in moderation. Fruits have great things in them.

Justin: As I have tried to establish across my podcast family, fruits are the enemy. Everybody get off fruits. That sugar still counts. That sugar don't spin. Come on.

Sydnee: It is sugar, but they have lots of other wonderful things in them. Fruits are still good for you. They still have benefits.

Justin: Hmm. Agree to disagree.

Sydnee: I would just eat them in more moderation than I would eat vegetables.

Justin: Agree to disagree.

Sydnee: You can go nuts on your leafy greens. Most of you.

Justin: Nuts are actually great, too. High in protein, low in fat. Hey, I bet you didn't know that.

Sydnee: [laughs] That's beans.

Justin: Oh, you wanna talk about beans?

Sydnee: No. I— no, please. Anyway. So, the reason they say that is— you know most sayings aren't this straightforward. Most old folk sayings usually are somewhat convoluted.

Justin: Yeah.

Sydnee: This is an interesting one because it means exactly what it sounds like. Apples make you healthier and you won't have to go to the doctor. That's what it means.

Justin: Okay.

Sydnee: What if you're allergic to apples? Well, don't eat them. It is definitely possible to be allergic to apples. It's not, like, a common allergy.

Justin: That is free medical advice that you can take. [laughs]

Sydnee: There you go. But if you're allergic to something, don't put it in you or on you. There you go. There's my free medical advice. Now, do they help—

Justin: That's sad too, because you'd have to deny yourself the brand-new Apple Cinnamon Toast Crunch, which is excellent and packed with real apple flavor. Just sampled it yesterday. It's brand new on the market.

Sydnee: You'll have to find some apple cereal that's got artificial—

Justin: Fake apple. Get Applejacks, probably.

Sydnee: Are they? I dunno…

Justin: I would bet on a stack of bibles.

Sydnee: All those cereals went to the natural— anyway. This is off-topic. Do apples actually—

Justin: Have you seen Trix lately?

Sydnee: [laughs]

Justin: It's a nightmare. It looks like someone took a picture of your childhood and then left it out in the sun for three months. It's terrible.

Sydnee: [laughs] So, do apples actually keep the doctor away? There have been studies on this. Recent. This isn't like something we used to do for fun, like, in recent years we've done this for fun.

In 2011, there was a study that found that maybe eating apples regularly will lower your cholesterol. But then there was another one where they have people specifically eating Golden Delicious apples and they found that maybe it raised your cholesterol.

Justin: Shoulda known. Delicious was in the name.

Sydnee: Another study found that if you eat both apples and pears together, it might prevent stokes. Or help prevent strokes, I'd say, probably not solely, but helped. And then there was a study in 2015 where they actually compared visits to the doctor and apple consumption and they found that with increased apple consumption there was no decrease in visits to the doctor.

Justin: Okay.

Sydnee: So, at the end of the day, I don't think I can tell you whether or not apples will help you, you know, with your doctor visits or not, frequency. So, you could probably eat them three to five times a week and it may be helpful for you. Apples got good stuff in them and they taste good. Put a little bit of peanut butter on them for a little bit of protein…

Justin: When I was a kid, I used to miss—

Sydnee: You can get the natural stuff.

Justin: Yeah, you won't eat that natural stuff, though. You don't like natural PB.

Sydnee: Not me. But you can.

Justin: I get that unsugared almond butter. That's my sweet treat at the end of every night. I have a tablespoon of unsweetened almond butter without salt. Mm, boy that— anyway.

Uh, when I was a kid I misunderstood this saying, and when I would visualize it I always thought of it more like a Dracula and garlic situation,

for some reason. Like, if you have an apple with you and show it to a doctor, they're like [hisses] and they have to retreat.

Sydnee: [laughs] That's what happens.

Justin: That's what happens.

Sydnee: And you get your visit for free.

Justin: [laughs] And if you say their name backwards, they have to give you three wishes.

Sydnee: [laughs]

Justin: [laughs] "Here is my question: movies always depict body parts dislocating or popping out of place. Fingers, shoulder, etc. Very cliché. What other body parts have the ability to become dislocated and what do you do to resolve this?"

Sydnee: That's from Dawn.

Justin: From Dawn.

Sydnee: So, first of all, yes. Any joint could become dislocated, and all that means is that it has moved out of the socket where the bone belongs. Does that make sense?

Justin: For sure.

Sydnee: It's just, it is popped out of the place where it should be, and because of that it's pulling on ligaments and tendons and muscles and nerves and blood vessels and everything else that surrounds, you know, our bones. Everything that isn't a bone.

It's also pulling on bones, but it's pulling on all that stuff, which is creating damage to that tissue, which is creating a great deal of pain and discomfort. These are incredibly painful, generally speaking. Dislocations are incredibly painful.

Obviously, it changes depending on what joint is dislocated. It could be more or less. The shoulder is very— it's the most common joint that you'll dislocate. And it's usually just a— you know, some sort of issue where you have hyperextended it or flexed it, moved it too far in a direction.

Justin: Mm hmm.

Sydnee: And it has gone beyond the bounds of where your shoulder is meant to move.

Justin: Okay.

Sydnee: And then it has come lose. You can dislocate your fingers. You can dislocate hips, elbows, any joint. You can dislocate kids elbows when you pick them up and swing them. You know when you pick up little kids?

Justin: Yeah, you do the one, two, three, jump thing?

Sydnee: One, two, three, jump and swing them? It's called nursemaid's elbow.

Justin: Oof.

Sydnee: You can pull that elbow right out of the socket.

Justin: Ugh!

Sydnee: You can fix it by popping it back in.

Justin: Oh, okay.

Sydnee: It's a mechanical fix for the most part— most, the vast majority of the time. And it is, yes, it is every bit as awful as it sounds. A lot of it just kind of involves pulling on the affected limb to kinda pull it back out and then let it sink back into place. You can kinda visualize that with the shoulder if you think about it.

Justin: I'd rather not.

Sydnee: Again, it's a very painful thing to do. You could do it out in the field if you needed to. Like if this happened on the sidelines or if this has happened— I don't know. I don't know why you're out, like, you're like climbing a mountain with your buddies. This could happen. But typically, we like to give people some pain medication when we fix it in hospital.

Justin: Sydnee, are you ready for another question?

Sydnee: Sure, hit me.

Justin: Well—

Sydnee: No! I'm not.

Justin: No. That was a trap. Because first we're gonna have to go to the billing department.

Sydnee: [laughs] Let's go.

[ad break]

Justin: "Oh my God." Look at her butt. No, [laughs] "Oh my God. My mother keeps post—" Charlie's obsessed with that.

Sydnee: Yo should really hear Charlie sing it. It's not— it's no— she has not—

Justin: She has not heard the entire song. There's three seconds of the song Anaconda in the film Sing, and it's just—

Sydnee: Yeah. And there are three rabbits and they're shaking their butts and singing it, and Charlie will not stop. "Oh my gosh."

Justin and Sydnee: "Look at her butt."

Justin: "Oh my God. My mother keeps poking my arm going, 'Ask Dr Sydnee about iodine and why it's in salt'." And that is from Arcturus. Arc… turus. Yeah. Arcturus.

Sydnee: Arcturus.

Justin: Arcturus.

Sydnee: So, this is a good question. And Justin, you didn't know this answer, did you?

Justin: No, Sydnee, I didn't. But please rub it in.

Sydnee: I know. I was curious. I asked if Justin knew and he didn't and I thought, "Huh. This'll be fun."

Justin: "Finally, something Justin doesn't know."

Sydnee: [laughs]

Justin: "What a rare treat."

Sydnee: We have kind—s o, you need iodine in your body.

Justin: Speak for yourself.

Sydnee: Well, no, you do. It's a trace element that you need, you need for certain chemical reactions. So, it is important that you ingest iodine. And you don't make it naturally in your body, so you gotta get it from somewhere. And we've known this since, like, ancient Chinese writings from 3600BCE.

Justin: I was sitting here thinking, like, "Boy, that's kind of a defect in the human body that it needs this to run and you don't make it," then I started thinking, like, "There's a lot of things like that. That's like, the whole food game, right?"

Sydnee: Mm hmm.

Justin: I think that's the whole food point.

Sydnee: There are lot of trace elements that we don't naturally make that we have to get from our diet. The thing is that they're trace. We don't need a ton of them. But you do need iodine.

Justin: If you ever need to know what all those encompass, just check out the ingredients on a super donut, because as far as I understand, it has everything you need to continue to live, forever, basically.

Sydnee: Or eat an avocado, I guess

Justin: Okay,

Sydnee: I don't know how it goes on iodine though, honestly. It is in seaweed, though, and that was the first thing they recognized in these ancient writings, that there was something in seaweed that if you ate it, it would help prevent goiter, or what we now know was a goiter, which is a swelling of the thyroid gland in your neck. Which can get rather large and is easy to, again, read in recorded history, because people describe it. Take pictures of it and so on and so forth.

The thing you need iodine for mainly is thyroid hormone. So, your thyroid, like I said, it's a gland in your neck and it pumps out this hormone, thyroid hormone, and it is made with iodine.

Thyroid hormone does a lot of things in your body. It helps with your metabolism, it helps keep everything running, it helps make it possible for you to, you know, maintain a healthy weight, it makes it so that your skin isn't too dry and that your bowels move regularly, and there's lot of things that thyroid hormone does for your body. And if you don't have enough iodine, it's hard for you to make thyroid hormone.

So, what happens is your brain releases a hormone called TSH that goes down and kinda stimulates the thyroid and goes like, "Hey, hey, hey! You're not working, start working, make more thyroid hormone!"

And it keeps releasing more and more and more TSH, your brain does, to try to get your thyroid to work. Which, it's not working, because it doesn't have iodine. As it keeps stimulating that tissue, the tissue grows and enlarges and you end up with a goiter. But you still don't have enough iodine, so you still don't have enough thyroid hormone, so you're still hypothyroid.

Iodine is found in differing amounts in different parts of the world. So, in some places they naturally might have iodized salt. You might be able to mine salt and get iodine in your salt already. It's present in seafood and seaweed, so in places where they have access to that and eat that regularly they would get a lot more iodine. In other places, specifically in the US, this was a big area, like, in this part of the country. In Appalachia, this was always a huge issue. We naturally don't have a lot of iodine naturally occurring around here.

So, this was a big problem, because what they noticed was that people who live in these certain areas were more likely to develop goiter and people who had access to iodine didn't. So, how did they fix it?

Well, they started adding iodine to salt. And by adding the iodine to salt and making it widely available to everyone, they started to see a decrease in the incidence of goiter.

Justin: Excellent.

Sydnee: We started doing this in Michigan in May of 1924. We do it in different places in the world, they do it different ways. Sometimes it's added to, like, bread dough actually.

Justin: Oh, okay.

Sydnee: It doesn't always have to been added to salt. But in the US, it's mainly added to salt. And it hasn't entirely eliminated goiter from the face of the earth, but it has greatly helped the problem. But that's why it's in there.

Justin: "Hello, I had a kidney removed when I was three years old, and I've always wondered about what happens when an organ is removed in terms of that now-empty spot. Do other organs move around and fill the area, or does the mesentery hold everything in place? Do I now have some weird void where that kidney used to be?" From Tom.

What's the mesentery? From Justin.

Sydnee: [laughs]

Justin: That was like two questions in one.

Sydnee: So, first of all, I think this is a really interesting question. I had never really thought about it. I mean…

Justin: So, you've just been removing organs higgledy-piggledy without thinking of the consequences.

Sydnee: [laughs] Well, I'm not a surgeon. But things do shift around. But I'd never thought about it, I've never had anything removed, but I bet that would be something you'd wonder. "Hey, what happened to everything now?"

Things do shift around a bit when an organ is removed. I don't mean, like, major migrations. Like, the other kidney doesn't try to come over and take that spot because it looks comfier or anything like that. It's just, everything does kinda settle a little bit after you've had an organ removed.

In certain areas of the body where there isn't something to shift into that place, like let's say you had part of a lung removed, or even part of your brain removed from some reason, had to have a brain biopsy or

something, you actually see that it kind of fills with fluid at first, and then it eventually will just fill with some fibrous tissue. But within, like, your abdomen and pelvis, your organs do shift around a bit.

And you'll hear people actually describe this, specifically I've actually had a lot of patients who've had hysterectomies, have had their uterus removed, who have talked about that feeling that things have kind of moved a little bit or shifted afterwards. Which can cause some changes in, like, the patterns of bowel or bladder function for a little bit.

Usually it shouldn't be anything major, it shouldn't be anything that causes problems. But people have described this to me before. So, yeah. Things did shift. There's not a big hole there. Things probably shifted around a little bit.

Justin: Um, "I've always been curious about the possibility of donating my body to science upon my eventual death. Not any time soon of course, I'm 28 and not looking to die." Good.

Sydnee: [laughs]

Justin: "Can you tell me about your experience in medical school with these donated bodies? What is the process? Are the bodies used outside of medical schools?"

Sydnee: And that's from Emma.

Justin: I mean, they *shouldn't* be used outside of medical schools, you should keep them in the school. It's very rare in one of those classes you'll get an outside day. That's an extreme rarity.

Sydnee: [laughs]

Justin: "It doesn't matter if it's sunny outside, Jim. We're having class inside."

Sydnee: "This is inappropriate."

Justin: "This is inappropriate. It's an inappropriate question. How did you get in here?"

Sydnee: "Maybe you're in the wrong field."

Justin: "Maybe you're in the wrong building. Were you ever admitted to this school?"

Sydnee: [laughs] Emma, that's a great question. Let me tell you, first of all, that the first experience for a lot of medical students is anatomy class, where we learn about the human body first-hand from people who have donated their bodies to the medical school. To science.

Justin: Is that in any way try to separate the wheat from the chaff? Like, if you cannot hang with this, let's find out right now so you don't waste a bunch of time learning chemical reactions and what have you?

Sydnee: I don't— I mean, let me say this. I do not think that is at all the primary purpose. I think that that probably is also part of what happens. But that is in no way— I mean, the biggest thing is that, you know, in medicine we're studying the human body, and until we become intimately familiar with how it's made up, it's hard to understand anything else.

So, it's kinda the first building block to understand everything that comes after it. But yeah, I think there is a— I guess it is kind of a way of— I don't wanna say desensitizing you at all to it, but to understanding it in depth and having a better respect for it and being prepared for what you're really gonna do.

That you're dealing with humans and you're dealing with real lives and you're dealing with the human body, and that it— you have to have huge respect for that. And it starts from that first day in anatomy lab when you realize the sacrifice that somebody was willing to make for— well, not sacrifice.

Justin: Not sacrifice. Because it don't work like that.

Sydnee: No, I don't mean I like that. I mean the gift that they were willing to make.

Justin: There we go.

Sydnee: The huge gift that someone has given you.

Justin: I think that hearing about those anatomy classes from you was— I think that's when my wife sort of became a superhero to me, because there's just— I mean there's just no reality in which I would be able to hang with that for more than, I mean, literally zero seconds.

I mean it would be like, cartoon-style, where it's the hole in the wall, Justin-shaped hole in the wall, like, no, cannot. And you would talk about it and I would just, I was and am still in awe of you for that. Because I can't fathom it. I'm glad people like you exist, but they ain't me. [laughs]

Sydnee: I really— if you try to think about it kind of as— I know this sounds very morbid, but if you'll bear with me.

This is sort of my first patient. And no, I can't bring them back to life, I can't save their life. But by learning from them and by, you know, doing my best to respect them as I am examining, you know, what we're doing and going through the process of anatomical dissection and everything. As I'm doing that, I am hopefully going to be able to take better care of every patient thereafter.

And so, as far as my experience in medical school with it is that I would say everyone treats it that way. Nobody is in there laughing and making jokes. Nobody is in there— I mean, talking about how it's—

Justin: I mean, you would get ejected instantly, right? Like, there's just no reality in which—

Sydnee: Yeah. I mean, it really is, it's kind of a sacred place. It's a sacred thing that we're doing, it is a tradition that has existed in medicine for a very long time, and it is vitally important to our ability to do our job. And we take it incredibly seriously. And I am so appreciative to everybody who has ever done that and to the families and to everybody. I mean, it's just an amazing gift. It's an amazing gift.

Let me say this: if you donate your body to science, it could be used for other things than a medical school. There are lots of different research programs that necessitate, you know, human tissue to do various, you know, medical research. To understand drugs working and procedures and all kinds of different things. So, there are other places that those tissues can go, scientifically, than a medical school.

You can donate your body specifically to a medical school. You can donate through a private organization who will, you know, facilitate scientific research in various laboratories. There are lots of different processes for that, but I know that a lot of people who I think have a relationship with our med school and our university and locally, they are people who are

choosing to donate their body to *our* med school. To our community, for our students. Which is an amazing, amazing gift.

So, the last thing that I will say about that is that if you are considering that or if you are someone whose family has ever done that, please know that every— every scientist, every medical student, every doctor is so incredibly appreciative for that, and it's a wonderful, wonderful gift if it is something you're considering doing.

Justin: We have time for one more question, Sydnee. I'm really excited about this one so I'm just gonna go for it. "My medical query dates back to high school, where I had an English teacher in grade 12—" please, this is an American podcast, it was 12th grade.

Sydnee: [laughs]

Justin: "Who related a story to the class from his friend who was a paramedic and definitely falls under the gross category, so read on with caution." Alright listener, you have been warned.

"As he told it, a man was suffering from severe constipation and had not gone to the bathroom in some time. And as he became more and more constipated, the blockage moved up and up in his digestive system. When the paramedics arrived, they found the man had called them because he was vomiting up this blockage. [gags] What I have wondered is, is this really possible? How could someone get so constipated? What diet or drugs would have caused this? Is this just a story his friend was using to try to gross him out?" Trevor Woodburn.

Sydnee: So, let me say—

Justin: Go ahead. I just need a break. [laughs]

Sydnee: Sorry, Justin.

Justin: It's alright. [laughs]

Sydnee: Unfortunately, Trevor, this is really possible.

Justin: Hachi machi!

Sydnee: Your—

Justin: Oofa doofa.

Sydnee: No, his friend was not just trying to— well, his friend may have been trying to gross him out, but that was, he did not make this story up. This is possible. What I would say is this, I mean, was it diet? Was it drugs?

This person probably had what we would consider a bowel obstruction. So, that's beyond just constipated, stool isn't moving along like it should. Something is *blocking* the passage of stool. It's not moving. And if stuff doesn't move long enough, it does back up, and you begin to get pain and you begin to get nausea and you begin to— this results in reverse peristalsis, meaning waves going the opposite direction, and sooner or later you will throw up, and yes, that material can start to look… somewhat… feculent.

Justin: That's a pretty word.

Sydnee: Is it?

Justin: Folks, that's gonna do it for us here on Sawbones this week.

Sydnee: [laughs] And I'm very sorry for whoever had to experience that. That's a terrible thing to have to have experienced and I hope that they were able to fix whatever caused the blockage and that this person is okay now.

Justin: Well, they'll never be okay Sydnee, but maybe they can try to move forward with some semblance of a normal life.

Sydnee: [laughs]

Justin: My thoughts and prayers are with them. Anyway, [laughs] this is gonna do it for us for Sawbones this week. Thank you so much.

Hey, I wanted to mention, because we haven't mentioned it in a little bit. We are going to be performing at the Philadelphia Podcast Festival very soon, and we would love if you would come join us.

There are a few tickets left for that show. It is gonna be Sunday, July 16th, doors at 1:30, show is at 2pm. It's an all ages show. Tickets range between $22.50 and $24.50, it's gonna be at the Trocadero Theatre, and

you can get tickets now if you go to bit.ly/sawbonesphilly. It's gonna be a lot of fun.

I know The Flophouse is also performing as part of the same festival, so make sure you go check them out too, but we would love to see you. It's gonna be a Sawbones live show, Sunday, July 16th, 2pm, and bit.ly/sawbonesphilly is the address to get tickets. So please come and see us.

Sydnee: Come check it out. You can come to Philadelphia, check out the Mutter Museum and see our show. It's like a whole…

Justin: Make a weekend of it.

Sydnee: Weird medical history weekend.

Justin: Thank you to The Taxpayers for the use of their song "Medicines" as the intro and outro of our program. And I think that'll do it for us, right Syd?

Sydnee: Mm hmm.

Justin: Alright folks. So, until next week, my name is— oh, I should say, sorry this one was a little late.

Sydnee: Yes. We do apologize. We will try to be—

Justin: Syd's on hospital service and it just makes it— it's a lot. Anyway.

Sydnee: We'll try to be more punctual next week.

Justin: Sorry. But that's gonna do it for us. Until next week, 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]