

Sawbones: Do You Know How Italian I am?

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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: My tone of voice makes it sound like I'm bringing you breaking, tragic news. But it's just... It's just me. But isn't that sad? Does it drive you absolutely batty, when your husband, in your own house, gets sick? That's gotta feel like a huge dereliction of duty, right in your backyard.

Sydnee: Oh. Because I allowed it... I allowed it to happen.

Justin: Because you allowed illness in your home, in your backyard!

Sydnee: Do you...? Okay. I... Do you think that doctors have the ability to prevent all illness, and we're just withholding it from you if we do not do so?

Justin: No, dearheart, that's what makes it a joke and not a real thing that I say to you. That is the difference, there. But you have—

Sydnee: I will say—

Justin: You have nailed it though.

Sydnee: If I—

Justin: That is 100%.

Sydnee: If I could... If I could prevent illness, for you, I certainly would.

Justin: Oh, thank you.

Sydnee: Because... Well, while I do you love you...

Justin: And...?

Sydnee: And...

Justin: The whining.

Sydnee: You're so whiny.

Justin: And the whining.

Sydnee: It really stops everything, you know?

Justin: Oh, yeah.

Sydnee: Like, time stops.

Justin: Yeah, but you know what, Syd? I asked you to look in the otoscope with the otoscope, in my ear three days ago and you didn't, and I didn't bring it back up again until this exact moment. And so I get—

Sydnee: No I did look in your ear!

Justin: No you didn't!

Sydnee: And I told you that there was wax in there.

Justin: Yeah, and said we're gonna have to—

Sydnee: And it was blocking the eardrum.

Justin: Yeah.

Sydnee: And we were gonna have to—

Justin: And you never did.

Sydnee: ... flush it out.

Justin: You never did any of that though, did ya? Squeaky wheel gets the grease, it seems, Syd.

Sydnee: [teeth clenched] We've been a little busy.

Justin: Yeah, but it seems like if I had been a bit more of a squeaky wheel, I'd have perfect, you know, hearing. Other than the hearing loss that I have. Other than that..

Sydnee: Did you put the drops in your ear like I told you to?

Justin: I'm not—

Sydnee: To soften the wax, so I could flush it out?

Justin: Did you... Do the podcast? That's not my job. Your job is doctor. My job is podcast. If podcasting could heal you, I would every day.

Sydnee: I... Listen, folks—

Justin: I would for you, private. I would privately podcast to heal you.

Sydnee: Lately, our job has been community theater, I think.

Justin: Yeah, our job has been community theater and barely parents.
[laughs] That's been our—

Sydnee: Aw, parenting. Our kids... our kids are out of school. We are directing one show. We are in another show. Our kids are in a third show.

Justin: And we're building...

Sydnee: We're building the set. We're painting the set. We're helping collect props.

Justin: Yeah.

Sydnee: We're helping...

Justin: I don't mean that in the community theater sense—

Sydnee: ... with everything.

Justin: ... "We're building a set." I mean Sydnee and I are literally every day [laughs] —

Sydnee: Yeah, I got—

Justin: ... going for hours a day to build the sets over there.

Sydnee: I received power tools for Mother's Day.

Justin: Almost every day. Not quite. Yeah.

Sydnee: That was my present.

Justin: Yeah.

Sydnee: Yeah. Well, and a medical... a very cool, medical kit.

Justin: Both sides of you.

Sydnee: Emergency medical kit.

Justin: The craftsman. The doctor. Both sides.

Sydnee: Yeah. [laughing] The Craftsman that's a side of me. Anyway, so I... I say all that as a way of also saying I'm sorry we have... we've been absent.

Justin: Yeah. Here we are though.

Sydnee: Yes, we're back.

Justin: We're back.

Sydnee: We're—

Justin: And you have a—

Sydnee: ... mostly better.

Justin: ... a bucket of questions waiting for us that I'm going to pose to Sydnee.

Sydnee: I do. I do. And I- But now, before, I have a fun story from my dad. This doesn't involve someone dying. [laughs]

Justin: Oh, good, for a change. Yeah.

Sydnee: I know. It's exciting. Whenever my dad starts a story, I think this is a lot of dads, this is a very dadly thing, that dads want to tell you, like, "Hey, do you remember that person?" And then they're gonna tell you about how they died.

Justin: How they died. A hundred percent.

Sydnee: Yeah.

Justin: [as a dad] "Did you go to school with..." And they died. Or they went to prison.

Sydnee: Yeah, it's one of those things.

Justin: One of those two things.

Sydnee: But this is not about that. But he told me this story, and I thought, "This is a cool story for our show, but I don't think it's a whole episode."

Justin: Okay.

Sydnee: I just think it's an interesting story and I thought this would fit well into a medical questions episode.

Justin: Well, regale me, I guess.

Sydnee: Justin.

Justin: Yep.

Sydnee: Did you know... that... The Beatles are responsible for the CT scanner? [laughs]

Justin: No, honey, I didn't know that.

Sydnee: This is how my dad started this story.

Justin: Well, I mean, can I say though, credit to your dad, that's the best way to start the story, I bet.

Sydnee: Yeah.

Justin: I mean it's very... it's very hook-y.

Sydnee: Yeah. Now I'm sure he heard this on maybe another podcast or Reddit. He gets... we frequently will get him like those trivia calendars.

Justin: That reminds me of when Dot came up to me and she said, "Did you know that narwhals are not the unicorns of the sea?"

Sydnee: [laughs]

Justin: And I had to be like, "Dang. Okay. Tell me more." [laughs] "Okay, you got me, kid. I'm hooked."

Sydnee: Okay, so you know EMI, Electrical and Musical Industries.

Justin: Yes.

Sydnee: Which was The Beatles' record label.

Justin: Yes.

Sydnee: Okay. So back in the 1950s, there's a researcher, Godfrey Hounsfield there.

Justin: Mm-hmm.

Sydnee: Okay. And it used to be an industrial research company.

Justin: Mm-hmm.

Sydnee: Back when Godfrey was working there.

Justin: Okay.

Sydnee: He did a bunch of work on computers. He helped build the first all-transistor computer, which I don't know anything about computers, but I guess that's a big deal.

Justin: Has to be.

Sydnee: Must be. But all of that was not profitable back in the '50s because we didn't love computers yet, I guess?

Justin: Mm-hmm. We were—

Sydnee: You know?

Justin: Yeah, we weren't into `em.

Sydnee: We weren't into 'em. Now—

Justin: They were so heavy that they could fall and crush us.

Sydnee: Right.

Justin: And that's less of a problem now. Some of them definitely still could, but back then all of them could.

Sydnee: They took up whole buildings and now we wear them on our wrists.

Justin: Like, we tolerate—

Sydnee: We keep them in our pockets.

Justin: Like we tolerate fridges, but we don't like, try to make them part of our lives. Like we don't... You know what I mean? Like, we don't get bunches of fridges for every room or try to make laptop fridges or any of that because they're too big and we don't like things that can fall on us and kill us.

Sydnee: I do wish I had a laptop fridge though, or one that I carried with me.

Justin: Right, but you don't feel anything—

Sydnee: That would be convenient for snacking.

Justin: You buy your fridge and you never think about it again because it's so big, it could fall and kill you. People don't like that kind of thing.

Sydnee: That's... That's... Listen, I might disagree with you because I really love fridge water.

Justin: Yeah...

Sydnee: And so like our fridge is important to me because it supplies me with fridge water, which is the best water. Love fridge water.

Justin: Yeah.

Sydnee: Anyway, so—

Justin: Even though our maniacal kids keep changing it to crushed ice! [gutturally] Who enjoys crushed ice?

Sydnee: Oh, you are going to bring out all the crushed ice fans with that one.

Justin: I'm not talking about the good ice, and I'm not talking.... I'm talking about crushed ice. It's like, [sarcastic] "Boy, this drink's good. I wish it could be wetter in five minutes. Perfect, wetter and colder. That's what this needs." [sighs]

Sydnee: Let me finish this story so you can ask me questions.

Justin: [laughing] Okay.

Sydnee: Okay, so it wasn't profitable. The company sold its computer wing in 1962. And then in 1962 it also did something else. EMI signed The Beatles.

Justin: Oh, that's funny.

Sydnee: Because they were also, like I said, a record label. At that time, Godfrey was still so well-respected at EMI that they were letting him just do his independent research there. Which is kind of like, I always wonder... Eventually he would be funded by The Beatles profits.

Justin: Right.

Sydnee: Like, that's how he would keep going.

Justin: Yeah.

Sydnee: But initially, you gotta wonder if they weren't like, "You don't work here anymore. You can work here. But you don't work here. But you can."
"But you don't. So we're not gonna pay you. But you can."

Justin: It's like Milton from *Office Space*.

Sydnee: Yes!

Justin: Yeah, we corrected the error. I do... I gotta respect a business that's like, "What's your model?"

"Okay, well, let me tell you. We got four British guys that play music. We got 'em from a bunch of Liverpool bars."

"Okay, what else?"

"We have a old man trying to make an incredible new scanner."

"So both?"

"Yes."

"Which one will pan out?"

"We don't know. So we just do both of these at once and we—"

Sydnee: But turns out...

Justin: Both!

Sydnee: Both!

Justin: That's a great business, good job, guys!

Sydnee: Good job. You picked two things—

Justin: That's wild!

Sydnee: ... unrelated.

Justin: You picked two things. Slam dunk!

Sydnee: So The Beatles funded his research, obviously.

Justin: Yeah.

Sydnee: He went on to invent the CT scanner. And EMI released it in 1972 and he got the Nobel Prize for medicine in 1979.

Justin: Mm-hmm.

Sydnee: And it was thanks to The Beatles profits that he was able to continue his research and create the CT scanner.

Justin: Amazing.

Sydnee: So there you go.

Justin: Amazing. Are you... Do you feel good that you didn't have to try to stretch that into a full 30-minute episode?

Sydnee: Yes.

Justin: I could see. There would have been a lot of winding anecdotes and...

Sydnee: No, it was... But it's a fun... and it fits into *Sawbones* and I thought this, you know, spicy anecdotes.

Justin: Do you think there was ever a time—

Sydnee: It's not spicy. Exciting, interesting anecdotes. This is a good place for it.

Justin: Do you think there was ever a time where they were like, [Liverpudlian accent] [knocking sound] "Hello, Doctor? What're you working on in here?"

Sydnee: [laughs]

Justin: [As Paul McCartney] "Isn't that incredible, John?"
[As John Lennon] "Yes, it is, Paul."

[giggles]

Sydnee: And maybe... [laughing] Maybe they contributed and then maybe he showed up and he was like, "Hey, I had some lyrics that I thought..."

Justin: [As Godfrey Hounsfield] "Here guys, I call this LSD. Let me know what you think. I invented it."

Sydnee: [As Godfrey Hounsfield] "I made it."

Justin: [As Godfrey Hounsfield] "I made this."

Sydnee: He was- I don't think he was that kind of scientist. I don't think.

Justin: Oh baby, in the 60s, every scientist—

Sydnee: But maybe Godfrey... Listen—

Justin: ... was that kind of scientist.

Sydnee: I don't know Godfrey. Maybe he was.

Justin: You weren't there.

Sydnee: Read me our first question.

Justin: "Hello from Australia. I have [sounding out] thrombophilia.

Sydnee: Hey, good.

Justin: And- That's good?

Sydnee: No, that was a good pronunciation. It's not... I'm not saying, "Good. You have some thrombophilia." I'm saying—

Justin: Okay, but you can understand, out of context, it was a wild thing for you to say, right?

Sydnee: Sorry. I meant, well, I could see you trying to pronounce it...

Justin: You're welcome.

Sydnee: And you did a good job.

Justin: You're welcome. You... I... As your PR agent, I just want to clarify that Doctor Smirl meant good on my pronunciation.

Sydnee: Yes.

Justin: "And for that and other health reasons, I am not allowed to donate blood. But I've always wondered: what would happen if I donated blood to someone with hemophilia? Would they cancel each other out? Fight? Strongest blood wins? During COVID we had a blood shortage. I called to see if I could donate and I asked this question. And the answer he gave was, 'I don't get paid enough for this.'"

Which is a... kind of a weird thing for somebody in a position of begging for human blood to get. Like, it's a bit saucy. Like, "Okay, I'll keep all nine pints, then. Fine, be that way." [From question asker] "Thank you for the wonderful show. Best wishes."

Sydnee: Well, Ellen.

Justin: Ellen.

Sydnee: Well, I mean when... When one of our listeners includes their name, I assume they want us to... say it.

Justin: Okay. Well, Ellen... There... There's the question.

Sydnee: So specifically, Ellen mentioned Factor V Leiden as the thrombophilia... There are different... So there... I think we're kind of familiar with the concept of hemophilia. Well, we've done a whole episode on it. And most people have heard about it, I think, because of the royal families.
[laughs]

Justin: Ah, right.

Sydnee: Historically, all the Royals who had hemophilia. And then maybe at some point in a genetics class or a biology class or some sort of science class in your life, they've shown you like a big family tree of all the royal families of Europe, and how hemophilia was passed among them. Have you ever seen that?

Justin: I have not, no.

Sydnee: I have been shown that in so many science classes, I couldn't tell you. And med school classes. Anyway, there—

Justin: Hey Syd, do you guys ever talk about the fact that Factor V Leiden sounds a lot, lot, lot like the name of the mid-80s Japanese anime?

Sydnee: [laughs slightly]

Justin: If someone told you, because the L and the R sound are the same in Japanese, right?

Sydnee: Yeah.

Justin: If I could see the logo of Factor V Leiden [Japanese inflection] like in my head, it sounds awesome, right? You could be right there with Captain Harlock and all the other... the classics.

Sydnee: It could, but it's not awesome, I think because what factor V Leiden is, it's a... it's a clotting disorder that means the protein that stops the clotting process—

Justin: Mm-hmm.

Sydnee: So like, your blood is clotting because you're cut, something's bleeding, right?

Justin: Right.

Sydnee: So your blood starts “the clotting cascade”, that’s what we call it. That's good. We want it to start clotting, so that you don't just keep bleeding.

Justin: Good.

Sydnee: This is all good. But the protein that stops it, APC, doesn't work right.

Justin: Okay.

Sydnee: It doesn't... It’s not that it doesn't work at all, but it doesn't work right.

Justin: Okay.

Sydnee: And so APC is supposed to stop factor V, so it keeps going when you have this mutation, so you keep clotting, so you can have clots. So you... This is the opposite, if you think of hemophilia as “you can't clot”, loosely, you just keep bleeding. And there are different kinds of hemophilia.

Justin: Okay.

Sydnee: And there are different kinds of clotting disorders that make you clot.

Justin: So this is kind of like the old—

Sydnee: `Cause there’s a bunch of factors involved in clotting and stopping clotting.

Justin: It's like the old, “What would happen if you put a humidifier and a dehumidifier next to each other.

Sydnee: This is exactly- Yes. So if somebody with hemophilia, who can't clot their blood or has difficulty— I shouldn't say can't. Has difficulty clotting their blood. Receives blood from someone whose blood clots too easily. What happens?

So I had to... This was an interesting thought exercise. [laughs] And I went through this whole thought exercise before I got to sort of the denouement, but I'm going to save that. Because this is how I researched this. Because I was sitting there thinking through the different kinds of hemophilia. And I had to remind myself of all the clotting cascade, because I haven't studied that in a while.

Justin: Me neither.

Sydnee: So hemophilia is different kinds of bleeding disorders. Some affect factor eight, some nine, some 10. So there's different kinds, okay?

You need eight, nine and 10 in the clotting pathway to do their thing before you ever get to five.

And once you get to five, if you have factor five Leiden, you can't stop it. Like five, the thing that's supposed to cut five off and you don't keep clotting, isn't there. So you don't stop it.

So... I don't think it would cancel each other out, because even though with hemophilia you have less of eight, nine or 10, you still have some of them.

Justin: Mm-hmm.

Sydnee: And so you would still move through the clotting pathway to an extent. And once you get to five, if you now have factor five Leiden, it's not going to stop, so you're going to have a clot.

Justin: Right.

Sydnee: So it would be less of the initial factors, but once you get to that other factor and then once that card has fallen, the dominoes will keep falling.

Justin: Okay.

Sydnee: Does that make sense?

Justin: Yes.

Sydnee: Okay. However, the recipient does not have factor five Leiden.

Justin: Right.

Sydnee: So they would have some of the protein that they need to stop factor five. So maybe they could stop it.

Justin: Okay.

Sydnee: So maybe it would be fine.

Justin: So it might be fine.

Sydnee: So this is what I got to is... I actually think it might be fine and then I thought, "Okay. All of this only matters if you're donating plasma, which has the clotting factors in it."

Justin: Right.

Sydnee: Okay?

Justin: Because otherwise it's stripped—

Sydnee: If you—

Justin: ... stripped from it?

Sydnee: If you're just donating what we call "packed red blood cells", meaning we've stripped all of that out of there and they're just—

Justin: Power... power red, they call it.

Sydnee: Power red.

Justin: It's so gross.

Sydnee: If you're just donating power red—

Justin: [laughing] Ugh.

Sydnee: And not all the other stuff—

Justin: It's not Gatorade, it's my blood.

Sydnee: I don't think it would matter at all with that. I mean, other than the fact that like, donating blood if you have a bleeding or clotting disorder, there is some... It might be low, depending on what the disorder is, but there could be some risk to the act of donating blood, right?

Justin: Right.

Sydnee: Other than that, I thought, "Well, red blood cells should be just fine. It seems weird there's a restriction." So then I went to the Red Cross page and found that people with factor five Leiden can indeed donate packed red blood cells as long as they're not on an anticoagulation. As long as you don't have a clot and you're—

Justin: In your bloodstream, yeah.

Sydnee: ... having to take the blood thinner for it, you can't donate plasma, but you can donate packed red blood cells. So this is where I got to, I thought, "Well, they should be able to." And then I found out that other, smarter, people than me already knew that.

So maybe it's just a US versus Australia thing. But here in the US you can indeed donate packed red blood cells if you have factor five Leiden.

Justin: Wild, okay.

Sydnee: So there you go. This was the... This was the end of this very long thought exercise that I went through as I had diagrams of clotting cascades up on my computer and I was working through them.

Justin: And the answer was on [laughs] the website.

Sydnee: The answer was on the Red Cross page.

Justin: "Why is blood sticky?" Speaking of blood. That's from Julie.

Sydnee: Okay, so I had to think about... is blood sticky? Do you think about blood being sticky? I have had blood on me many times...

Justin: I would say more... I would say more viscous...

Sydnee: Yeah, which is—

Justin: I don't know.

Sydnee: I think we're using... I think we are saying "viscous" in the same... I think we're saying the same thing.

Justin: Yeah.

Sydnee: We're using different words, for the same—

Justin: And it's going to be more sticky, obviously, as the coagulation starts, right? 'Cause it starts to turn into a scab or whatever.

Sydnee: Exactly. Exactly. So initially when you, I mean when someone starts bleeding—

Justin: Same when wood glue sets up.

Sydnee: ... the blood is not particularly sticky. As the clotting factors that we just discussed start doing their thing the blood intentionally becomes- it's sticking together so that it stops. So like that's... that's not a... flaw. That's the design. [laughs]

Justin: Right.

Sydnee: And there are things that can make blood stickier. If you have higher red blood cells, there are some conditions you can have that automatically you have more red blood cells. There's some medications that can increase your red blood cells. Classically, smoking.

Justin: Hmm.

Sydnee: If you are a smoker, you may have a higher red blood cell count. That can make your blood more viscous or stickier. More clotting factors. So if the blood is clotting, it's going to get stickier.

Higher lipids. If you have really high- I have seen blood that actually looks... like you can see the fat in it, you can see like the cholesterol in it. Like the white, creamy... that's going to be...

Justin: I'm surprised they never use that—

Sydnee: ... more viscous.

Justin: ... blood and cigarettes thing on a detective show we've watched. Or like *House* or something like... "The blood is pretty sticky. I guess we've got a smoker." [laughs] That would be amazing. That would be an amazing pull.

Uh, "Hey, Syd."

Sydnee: Uh-huh?

Justin: "I'm a rower, so I get blisters." That's the untruest thing I've ever said. That is the furthest life experience from my own.

Sydnee: Yeah, you are not.

Justin: I am not.

Sydnee: No, you are not.

Justin: "I am a rower, so I get blisters on my hands. That's a normal part of rowing and dealing with it is part of the sport. But I've always wondered why

my blisters itch while they're healing. So why does skin itch when it grows back?" That's from Janice.

Sydnee: This is... You know, I started thinking about this, Janice. Is this really... Because everybody always says, like, "It's itching, that means it's healing."

Justin: Mm.

Sydnee: Have you heard that?

Justin: Yeah, yeah, yeah.

Sydnee: I hear that constantly, like, because I do a lot of wound care in my day-to-day job now. And so people will say, like, "I think it's getting better. It's itching."

Justin: That feels like a Middle Ages sort of like, imagining the little guys going down there to fight it. You know what I mean? Like, "Well, your humors are flooding down there, so it's itching you."

Sydnee: There have been studies looking into, is this a real thing or is this sort of like a folksy medicine kind of belief? It is a real sensation. It is definitely something that people, not all, but it is generally experienced by many, many people, the sensation of itchiness when something is healing.

And it probably is because tissues are healing. So there is evidence that itchiness is a sign something is healing. Now, that doesn't always mean that because it's itchy, it's healing. Obviously, there are lots of other reasons that we itch.

Justin: So— Oh—

Sydnee: But there have been— They've looked into this to see...

Justin: Biologically, that is strange to me, right? Because the... Opening a blister... it introduces infection, right?

And it's weird to me biologically that we have developed the urge to scratch at or itch blisters and things like that—

Sydnee: Well—

Justin: ... where it's going to expose it to more infection. It feels like kind of a bug.

Sydnee: It is a... from an evolutionary perspective, it doesn't... it is not helpful. It is not advantageous. I mean, I don't think it's a function as much as a dysfunction. So the thoughts they've tried to look in— Like, why? Why would you experience this?

Some of it is like histamine release, when things are healing, histamine is still part of that process and one of the things histamine does is make you itchy. Also collagen formation, just as the tissues are reforming, like scar tissue and all that, it is... Like the sensation, the stimulation of that, your brain may interpret as itchiness.

The other thing is just crossed pathways. Those nerves that are in that superficial skin as the skin is healing are being stimulated.

Justin: Mm-hmm.

Sydnee: And so you're kind of getting that... nerves can do this where they kind of mis— It's not misfiring. As they're firing, we are feeling it and we don't know what it is.

Justin: Right.

Sydnee: And that is not uncommon for us to interpret, "I don't know what this is" as itchy.

Justin: Sure. Yeah, that makes sense.

Sydnee: That is a very common—

Justin: Well, because part of it might be to get something off of you, right?

Sydnee: Yes.

Justin: Like, you've got a bug on you. You don't recognize the feeling of that bug. Or it could be tox- poisonous, or whatever.

Sydnee: So I think it's—

Justin: So you develop the...

Sydnee: That's exactly true. No. And so I think instead of it... Think about it this way. So if we feel something crawling on us, we might experience the sensation of itchiness.

Justin: Right.

Sydnee: Or it could be like fornication, which is—

Justin: [intentionally mistaking it for “fornication”] Ooh.

Sydnee: Ants crawling on your skin.

Justin: [salaciously] Tell me... tell me more. [laughs]

Sydnee: For-MI-MI-MI-cation. But like you experience this sensation of itchiness so that you scratch at it and get the bug off of you. Obviously, you don't want to do that when something's healing. You shouldn't. Please don't scratch it, leave it alone.

But it's similar to like, pain, right? Pain is functional. If something hurts, that's your body's way of saying, “Stop doing that thing. You could damage yourself.” That is... So pain has a function.

Justin: Mm-hmm.

Sydnee: There's a reason we experience pain. But then when you look at like, chronic pain. It has lost its function.

Justin: Mm-hmm.

Sydnee: We don't need, like there- Chronic pain is not necessarily telling you something's wrong. So now we've entered into something that is functional, that has become a dysfunction. I think it's the same thing. Itchiness has a function and now this is a dysfunction of itchiness.

Justin: Okay. That makes sense.

Sydnee: I have more questions for you, Justin.

Justin: Oh, okay.

Sydnee: But before we get there...

Justin: Yeah?

Sydnee: We must go to the billing department.

Justin: Let's go.

[ad break]

Justin: Syd, "how do the doctors know my blood type? Do they also have a document or sample of my DNA? Did they take a little sample when I was a baby? [increasing panic] Do they know how Italian I am?!" That's something I say when I walk into rooms a lot.

Sydnee: [laughs]

Justin: Like, "Do you all know how Italian I am?!"

Sydnee: Not at all, right?

Justin: [as the room] "Not very much at all, Justin."

Sydnee: Like, I don't— I think you're like, zero percent. I don't—

Justin: [as the room] "You're probably zero percent according to..." I dunno, I've never done one of those, but if I did one...

Sydnee: You did do one. I don't—

Justin: Did I?

Sydnee: Yeah, we did one for an episode, Hun.

Justin: Oh, right, right, right.

Sydnee: Remember?

Justin: Right, right. No Italian that I recall. "Is my DNA protected by HIPAA? How do we make sure we don't do eugenics?" This question's all over the place, Danny, I gotta be honest with you.

Sydnee: I know.

Justin: "How does blood work relate to this? What if I have an affliction that's passed on genetically? Can they test it without reading my DNA? Also, mostly I want to know how Italian I am. Love the show you all! Pumpkins and penguins, Daniel."

Sydnee: So I thought [laughs] this question... Daniel, you—

Justin: You can't keep doing this, Daniel.

Sydnee: ... do go all over the place here. But I thought this was a good thing to address. I don't necessarily know your blood type.

Justin: Like, cal—

Sydnee: This is commonly—

Justin: Okay. Can you... This is gonna sound weird, but can you clarify some of the pronouns in that sentence? Like... I don't know exactly if you mean the broad doctors, "you"...

Sydnee: As a doctor, if you are my patient, I- and this happens not infrequently, so you're not alone, Daniel- I will have a patient come in and they'll be talking to me about whatever they're there to see me for. You know, blood pressure or whatever.

And in the course of the conversation, they'll say, "Hey, by the way, can you tell me what my blood type is?" And I think there is an assumption that somewhere in our medical records, somewhere in your history, I have your blood type recorded.

I don't. Very often I don't.

Justin: It's not the case.

Sydnee: There... now when you were born, it is likely—

Justin: If you were born.

Sydnee: [laughs]

Justin: [laughs] Don't know what that means.

Sydnee: It is quite possible or likely, depending on the situation, that your blood type was recorded. That is quite possible. Quite likely, in fact. However, I don't necessarily have access to those records, and often if you're an adult, I definitely do not have access to those records. I don't know where they are.

We're kind of still in that point in this country where they might be on paper somewhere. They might be scanned into some computer somewhere. But trying to find those records could be almost impossible.

Justin: I want to see if they got it in the Red Cross app. I feel like I've seen it there before.

Sydnee: Now, the Red Cross might know your blood type because they type it when they take it. I can find out your blood type by ordering a blood type.

Justin: That sounds like a threat. Don't you threaten me.

Sydnee: So if you really want to know, your doctor can give you an order, you take it to the lab, they draw your blood, they tell you your blood type. But generally speaking, your primary care doctor may well not know your blood type. And if you don't either, it's a good thing to know, it's a good thing to find out. They can test you for it.

I don't know, insurance payment and all that. You'd have to work that out because without needing a transfusion... It's ridiculous, but I can see insurance companies saying, [dumb insurance company voice] "Well, why do you need to know your blood type?"

Justin: I can't... I can't keep mine in my head. I, for some reason, I try... I know your blood type. I don't know my blood type.

Sydnee: That makes me feel bad, because now... now you're going to say, "What's mine?" and I don't know. Mine is A-plus.

Justin: Yep.

Sydnee: But that's 'cause that's what...

Justin: Yeah, I know honey.

Sydnee: That's what I like to get.

Justin: Yeah, I know. But I have the same blood type. We're both A-plus.

Sydnee: We're both A-plus.

Justin: That's bad, right? Or is that good?

Sydnee: No. I mean, I don't... We can give each other blood.

Justin: Do you want... some?

Sydnee: No, I'm good. I mean, I think I'm good. I haven't had labs done in a while. Anyway. And so we definitely don't have your DNA, necessarily. There's no reason we would have that information. You can do things like the online genetic testing that you send away for. I'm not going to plug any of the companies. We've done an episode on this before.

Justin: Right.

Sydnee: You can do things where you will give a company your DNA.

Justin: Yes.

Sydnee: And then they will have it and then you've just gotta trust whatever they're gonna do with it. When we did— Now, I know our DNA is stored in a lab in Indiana.

Justin: That's right, because—

Sydnee: Because you and I were part of the COVID vaccine trial.

Justin: Oh, right, yeah.

Sydnee: And part of it is that they... we signed a form that said "We're going to take your DNA..."

Justin: Was it Eli Lilly? Did they...?

Sydnee: Mm-hmm.

Justin: Oh, yeah.

Sydnee: They have our DNA in a lab in Indiana for the next 15 years. So...

Justin: Man, yeah, we were...

Sydnee: So there you go. So you can choose to get your DNA profile checked through these various companies. But generally that's not something your doctor's just going to do.

Now if you have to visit a geneticist. If they're... if they're working you up for specific genetic disorders, there are specialized circumstances where they might look for certain genes or do some kind of DNA profile.

But generally speaking, your family doctor does not know your blood type or does not know anything about your DNA unless you have pursued those things.

Justin: Hey, you know, this is like our third question about blood. So I wanted to take the opportunity to say that, just to remind you, there's always a huge need for blood.

If you've never donated before, it's not as scary as it seems. You get free snacks afterwards. A lot of times they have T-shirts. One time I got a *Shark Week* T-shirt just from giving blood, which seems like I was robbing them at that point, 'cause I'll just make more of the crap and they're giving away *Shark Week* T-shirts? Thanks suckers. Takes like an hour. It doesn't hurt too bad.

Sydnee: Love *Shark Week*.

Justin: And you know, if you can get in there, it's a really... The app makes it really cool now, because you can watch your blood. If you're like, you know, micro-goal-oriented like myself, I can watch my blood go to Indiana or whatever, wherever it's going, and see how they've used it and stuff.

So it's very... it's very gratifying if you get a chance. Uh, another question, Sydnee? You got it.

"I am an identical twin and I have always wondered if I gave my sister a kidney slash liver slash bone slash marrow, et cetera, would she still need to take rejection medication? Is the likelihood of rejection different if we were newborns? I.e. before other external factors come into play?"

Can I guess?

Sydnee: That's from *The Spare Twin*.

Justin: I would guess... I don't know. There is a part of me that feels like it would probably be okay.

But there is also a part of me where I feel like it might fall into the uncanny valley, where the body is like, "Okay. That is exactly like Janice, except that's definitely not—" Janice is what they call the liver.

Sydnee: Mm-hmm.

Justin: [as The Body] "That's definitely not Janice, but it looks exactly like- You all are going to think I'm crazy. Paul-" That's the kidney.

Sydnee: Yeah.

Justin: [as The Body speaking to Paul, The Kidney] "Don't look at me that way."

Sydnee: [laughs] Okay, so I had to... I had to check this out 'cause in my head- And this is... Okay, this is very important in medicine. Just because something makes sense logically doesn't mean it's true.

Justin: I would think it—

Sydnee: There are lots of things about the human body that don't make sense.

Justin: I would think at birth it would probably be fine, but I don't know if like, genetic mutations over your lifetime would be enough of a... You know?

Sydnee: So likely you would not need antirejection medications.

Justin: Huh.

Sydnee: There are a number of identical twin transplants that have been done and studied that do not take antirejection medications and are just fine. So this is actually kind of a changing area of medicine.

I found studies as recent as the last couple years where they've looked at the number of identical twin transplants that are taking antirejection meds and ones that aren't. And what they found is about half of the sample they looked at were taking them. But they didn't necessarily know that they needed them.

Justin: Mm-hmm

Sydnee: So I think it's this area where probably they've done a transplant, they automatically put these patients on antirejection meds, because that's what we do. And then the risk of taking them away is so high... It's a tough thing to study, right?

Justin: Yeah.

Sydnee: Because if you take them away and then they reject the organ, that's devastating. I mean, that could be fatal.

Justin: Yes. Yes.

Sydnee: So... how do you know? But definitely we have people who have gotten a transplant from an identical twin who are not on antirejection meds. So we know it is possible.

Justin: Wild.

Sydnee: So yes... I know! I mean 'cause it... Genetically it's the same thing.

Justin: Yeah.

Sydnee: It is the exact same organ that you have implanted. They're just doubles of the same organ. So... And they used to, by the way, before we could do DNA to look for perfect matches, do you know how they used to test to see if like... 'Cause they used to do transplants between identical twins assuming that they matched.

Justin: Mm-hmm.

Sydnee: But the way they would double-check it is they would take a piece of skin from the person who was donating and attach it to the person who would receive the organ and see if the skin got rejected.

Justin: Oh, wow!

Sydnee: Isn't that wild?

Justin: That's wild, yeah.

Sydnee: And if the skin wasn't rejected, they would transplant the organ. But now we can check DNA. We don't do that now.

Justin: Hey, Syd?

Sydnee: Mm-hmm.

Justin: Can I ask you a question?

Sydnee: Yeah.

Justin: And it's a little bit personal.

Sydnee: Okay.

Justin: "What would you do if a patient brought their own speculum to an exam? Why are they selling those?"

Sydnee: [laughs] So...

Justin: That's from Heather. And you need the context.

Sydnee: Heather... Heather sent me a link to Nella. "Scoot down with confidence," they say. No, I'm not going to give you my email address, Nella. Anyway. Nella is... they sell the Nella Comfort Kit which is a speculum kit for those of you who have vaginas and require speculum exams.

The Nella Comfort kit gives you your own speculum to bring along with you, along with... what's in there? Some socks, a pair of socks, a stress ball, a vaginal wipe, and an [laughing] instruction sheet for your doctor. That's for 49 bucks.

I gotta say, I don't know why this exists. I can't... both as a physician and as a patient who receives these exams on a regular basis... I don't know why... I don't know why you would need to bring your own speculum. They claim that it is a more comfortable speculum. They cite the fact that it's plastic and one-time use.

Okay, I have only ever used plastic single-use speculums in my practice. Do metal ones still exist? Yeah, they're still there. And some clinicians may use those. They're certainly still out there. I don't really like them. They've got a little dial you've got to wind to open them up.

The plastic ones are way easier. They click to let you know that they're opening, which maybe the sound isn't pleasant, but... I like the plastic ones. That's all I've ever used. So we're using plastic ones, a lot of us, anyway.

They cite that it's thinner... Well, so... we have different sizes. We actually assess the patient to see what size we are going to use, depending on your age and your body type and size. And whether or not maybe you've had children. Like, there are a lot of factors that go into what speculum we use.

And a narrow speculum is not right for everyone's body shape and size. So it might not work for you. It might be the wrong shape for you. That's not always a plus. It really depends on your specific situation and that's why I have a variety, in the office, that I can choose from. So that I use the right examination tool.

I have no idea why you would need this. I would... I would never bring one with me. Can you— I just... I asked a lot of people who have vaginas this question, [laughing] "Would you want to bring your own speculum in a little box with you to your doctor?" And they all said, "Absolutely not."

Justin: And to be fair to... I feel, just to say, 'cause I'm a cisgender dude over here who's never experienced this. My suspicion is that if cisgender

dudes needed specula, there would probably be a wide assortment of... I mean, just judging from what I've seen in vape pens, there would be a wide assortment of specula in all colors.

Sydnee: Like power speculums?

Justin: Yeah. [truck commercial voice] "This one... Yeah, this one really gets through..." [bails on voice and laughs uncomfortably] I don't know...

Sydnee: I just don't—

Justin: But I will say— I just want to say, I am certain this is an absolutely uncomfortable experience for a lot of people, maybe like traumatic for some folks, I know. And we can absolutely validate that need for comfort and that like uncomfortableness without validating someone's desire to profit off of that. And that's where like the dif— That's what sucks, to me, about this. This feels like somebody saying, "Oh, you're afraid? Give us 49 dollars." [laughs]

Sydnee: That's exactly what this is. Because what they reference is that these are "for the 90 percent of—" First of all, they say women, which I have a problem with.

Justin: [sarcastic] Great job. [laughs] Great job people selling a—

Sydnee: Yes, 'cause—

Justin: Yeah.

Sydnee: Because not everyone who has a vagina and needs an exam is a woman. So, "For the 90 percent of women who get anxious about OBGYN exams, who... For women who've had pain or bled. For your daughter, who's scared. For the one in four women who've had sexual trauma. For gynaecologic cancer survivors. For women in menopause..."

Okay. So they're saying, like, "This is... If you're anxious, this is better." No. There... Could we do episode after episode on the inadequacies in care directed at people with vaginas and cervixes and who need this sort of

examination? Absolutely. And are there insensitive providers? Oh yeah. Oh yeah. We've all met them. I know them. I... hope I've never been them. I don't think I am. I think I'm sensitive.

But I... All of that can be addressed without paying this company 49 dollars for a speculum that may or may not be the right thing for you. And also just, I mean, for fancy socks and a stress ball? And we have vaginal— We have wipes. We have those in the office. We offer them. Or they should.

And if you're not getting that experience from your provider, absolutely, you need to advocate for yourself. Complain. Find a different provider. But you do— It will not be fixed with 49 dollars. And please don't hand your clinician an instruction sheet on how to do a pelvic exam.

Justin: Yeah, it wouldn't be great for the doctor-patient relationship.

Sydnee: No, you don't need this company in between you and a provider. You and the provider need to be able to have this conversation. And providers? We need to hear this conversation and be open to it and you do not need to pay this company 49 dollars to do it.

Justin: “Hi, Sydnee and Jus—” This is the last question. Last question, Syd.

“Hi, Sydnee and Justin, I have a weird medical question for the next time you do a questions episode.” I probably didn't need to read that part, it's self-evident, huh?

Sydnee: Yeah.

Justin: “Why do I get cold when I stay up too late? Sometimes, if I have a really late night, I will get chilled, even if the room I am in is a fine temperature and didn't change at all. Thanks so much for the show, Jess.”

I am so stoked to see this question, because this happened to me this week. Because we are dying trying to make the magical candy guy, Willy Wonka, go onstage and do all of his magical tricks. And we're... It's taking our blood and our soul to make it happen.

Sydnee: Also, we're... we're in *Margaritaville*.

Justin: Simultaneously, yes.

Sydnee: Yes.

Justin: Which I tried to convince the girls yesterday it's called *Marinaraville*, I couldn't get 'em on board. Anyway.

Sydnee: There—

Justin: I was so exhausted, but the cat started crying for her Smooth Bird. She had to have her Smalls. So I forgot. We forgot to feed her. And I got up and I thought I was getting like, the flu, because I was so tired and I was like, chilling. Like my body was shaking because I just wanted to be in bed asleep. [laughs]

Sydnee: So I love when we get questions like this because, Justin, I also have experienced this.

Justin: Good.

Sydnee: And I don't think I'd ever—

Justin: Not good, but...

Sydnee: Well, I'd never thought about it as like, something other people were experiencing.

Justin: Yeah.

Sydnee: And it is.

Justin: Maybe this is like that... That is the connection that was just made for me, that I'm not dying. [laughs]

Sydnee: And it's real. So it's not... It's not about time of day, as you may guess. It's not like, after two AM you get cold. [laughs] It's not time— It's the sleep deprivation. So what you're feeling is a lack of needed rest.

Justin: Yeah.

Sydnee: And sleep helps our brain in thermoregulation. So your body regulates its temperature, right?

Justin: Right.

Sydnee: We are... We are not... We are not like lizards where we are just, whatever the temperature around us is our body temperature.

Justin: Right.

Sydnee: Our body internally regulates.

Justin: Yeah.

Sydnee: We're supposed to be around—

Justin: And externally, for some of us.

Sydnee: [silence] What do you mean?

Justin: Well... with... you know...with the... with the balls?

Sydnee: [laughs] I meant... I meant your brain! Honey.

Justin: Yeah, but like...

Sydnee: I meant your brain regulates your temperature.

Justin: Yeah, but the balls shrink up—

Sydnee: Okay—

Justin: ... and that helps regulate your temperature.

Sydnee: No, okay—

Justin: Body's doing it.

Sydnee: But you understand like—

Justin: Magic of the body.

Sydnee: ... the control center of your body is making all that happen.

Justin: Well, speak—

Sydnee: Like, your balls aren't doing it on their own.

Justin: Hey, hey. Listen, Syd. Listen, Syd... I gotta accept where the control center is, you know?

Sydnee: Oh. Okay. [grumbles]

Justin: [cymbal crash]

Sydnee: [moving toward Fozzy Bear voice] Okay.

Justin: [Fozzy Bear voice] Wakka wakka! [laughs]

Sydnee: I can't with this. Your brain regulates your internal temperature. It's around 98-ish degrees. There's a lot of discrepancy about exactly what a normal body temperature is these days.

Justin: I've been clocking in a lot of 97s this week. I don't know. [laughs]

Sydnee: Okay, it may actually be around 97 degrees and we've been wrong for a long time. But you get the idea. It's around... it's around there.

Justin: Yeah.

Sydnee: And that's where we're supposed to stay. And the only reason it goes up is because we have a fever or an infection or something else.

Justin: Mm-hmm.

Sydnee: Or, you know, it's a bad situation, you're overheated. Or it goes way down. That's bad too.

Justin: Right.

Sydnee: Anyway. It needs to stay in that range.

When you— In order to do that, your brain has to be well-rested. It has to have a... There's a lot of things that go into thermoregulation. There are other factors, there are other disorders that can change it. But sleep is part of maintaining thermoregulation. When you stop sleeping for long periods of time, your brain starts to lose the ability to regulate your temperature well.

Now, that doesn't mean that you're going to like, heat up to 108 or something. It doesn't mean that you're going to... your body temperature is going to drop to the 80s and... I mean, you're not going to die. Eventually with enough sleep deprivation, you will die. But in that short period where you're starting to experience sleep deprivation, one of the things the brain lets go of is that constant—

Justin: Temperature regulation?

Sydnee: Yes. And so—

Justin: It's like that system to jettison?

Sydnee: Yeah.

Justin: Like, "Okay, we're not doing that anymore."

Sydnee: And just a little.

Justin: Yeah.

Sydnee: Again, just a little to make you feel cold. Not enough to make you freeze to death. But a little to make you feel kind of cold. That's what's happening. And so the fix for it is sleep. But it's that simple.

Justin: But do you see what the body's doing though? That's genius. Body's like, "Hey, you should get under a blanket."

Sydnee: [as The Body] "You should go get under a blanket."

Justin: [as The Body] "You should get under a blanket."

Sydnee: [as The Body] "Aren't you cold?"

Justin: [as The Body] "You're... so cold."

Sydnee: [as The Body] "Wouldn't it feel good to lay down under a blanket right now?"

Justin: [as The Body] "Go lay down under a blanket!"

Sydnee: There are lots of ways...

Justin: [as The Body] "You're still cold!"

Sydnee: Yes, there are lots of triggers in our brain to tell us, "Go. To. Sleep." But that is that... Well, I mean, that's, you know... That's why we have adapted to circadian rhythms. That's why, when it gets dark, our brain releases melatonin and says, "Go to sleep now. Go... See? Do you see the sleep?" It's...

We have, evolutionarily, that is advantageous to us because when we respond to those triggers and we go to sleep our brain can do everything it needs to do, like regulate our temperature.

Justin: Hey folks, thank you so much for listening to this podcast that we call *Sawbones*. Well, everybody calls it that because it's called that.

[laughs] Thanks to The Taxpayers for the use of their song, "Medicines", as the intro and outro of our program.

Sorry again about last week y'all, it's been... it's been a real... just like, full disclosure, it's been a lot of work. It'll be better but it's been a really tough couple of weeks. And thanks for hanging in there with us, we appreciate ya.

Sydnee: There're gonna—

Justin: And come see our show, by the way.

Sydnee: They're gonna be some great shows this summer! [laughs]

Justin: June 14th through the 16th of June. 21st through the 23rd, you can come see...

Sydnee: *Charlie and the Chocolate Factory.*

Justin: *Charlie and the Chocolate Factory.*

Sydnee: That's the version of...

Justin: Yeah, of course.

Sydnee: There's so many versions of Willy Wonka.

Justin: Dad is playing Grandpa Joe, and then there's a weekend dark. And then the two weekends after that come see Sydnee and I in *Escape to Margaritaville*. It's going to be a party. After we've opened up our veins and let our blood spill into the gutters of the theater and making the magic for the audiences, then it will be a party.

Sydnee: Yeah. And our kids are in the preshow for *Wonka*. They're adorable.

Justin: They're adorable, it's great. Come on out. Very reasonably priced. Bring a picnic basket. Make an evening out of it.

Sydnee: It is in Huntington, West Virginia.

Justin: That is the one thing about it—

Sydnee: You do need to know it's in Huntington, West Virginia.

Justin: ... is it's in Huntington, West Virginia. [laughing] That's going to do it for us this week. 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.

[outro, theme music plays]

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