

Sawbones 307: IV Cocktails

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

[theme music plays]

Justin: Hello everybody, and welcome to *Sawbones*: a marital tour of misguided medicine. I'm your cohost, Justin McElroy!

Sydnee: And I'm Sydnee McElroy.

Justin: Uhh, I'm feeling so relaxed, Syd.

Sydnee: Are you?

Justin: Yes. We just had our first, um... overnight away from our two children since the second one was born.

Sydnee: That's right. We were—we were not parenting for... 36 hours? Approximately?

Justin: Oh, boy. And what a sweet, sweet 36 hours they were.

Sydnee: It was nice.

Justin: Our flight got delayed on the way home and I was like, "[sarcastically] Oh, no..."

Sydnee: No, I was—

Justin: "[sarcastically] How could it be?"

Sydnee: That's when I was getting very antsy. A whole night away from 'em—no, I—I missed 'em! They're great!

Justin: I got deeper into island time the more we were delayed.

Sydnee: But it was nice. It was nice to reconnect, just the two of us, and get to go out and talk to other adults.

Justin: So, we accidentally... we were in New York and we accidentally stayed at a... I guess you would describe it as a wellness centric... hotel.

Sydnee: It's—it was, like, the anti-*Sawbones* hotel.

Justin: It was wild, actually.

Sydnee: I didn't know that's what it was. Justin—full disclosure, Justin booked it.

Justin: Yeah.

Sydnee: It was your fault, really.

Justin: Yeah, I wasn't really paying attention. There weren't a lot of hotels in the area that we needed to be in.

Sydnee: We were looking for proximity to the venue that we were going to be headed to, and um—and then, like, I usually like if they have a bathtub. That's a big thing for me. [laughs quietly]

Justin: Sydnee likes a bathtub.

Sydnee: I never get to take baths, and so if it's, like, a—

Justin: I have to have room service, 'cause—

Sydnee: —if it's a nice outing for the two of us, maybe there'll be a bathtub and I can take a bath. So, those are kind of our criteria—

Justin: Only two things, right. But *this* place, we checked in—

Sydnee: [sighs]

Justin: —and they're like, "[surreptitiously] Hey, listen, uh... just wanna let you know... with your reservation, uh... you can get, uh, 30 minutes in the IR sauna—"

Sydnee: That's infrared.

Justin: "—infrared sauna, or three minutes in the... cryochamber?"

Sydnee: Yes.

Justin: "And you can load whatever music you want, and they can play—it's three minutes. You know a three minute long song to keep—get you pumped up, 'cause it's pretty cold... in there."

Sydnee: Right. It's a cryochamber.

Justin: And we're like, "What in the living heck... are you talking about."

Sydnee: 'Cause at that point we didn't realize what we'd walked into, and then we get to the room and there's all these, like...

Justin: Oh my God. There's instructions on how to go to sleep. There's, like, three pages on how to go to sleep. It was like, "First, do th—tear open your.. uh, the complementary, like—" not complementary. Probably, like—

Sydnee: No, nothing was complementary.

Justin: —like, eight—eight dollars. Uh—

Sydnee: A.M. tea, and—

Justin: Yeah, the—the tea, and then make sure you do five things about gratitude, and then so—and then it's like, so just lay—I can't just lay down and go to sleep. I got a whole kind of routine I have to go through.

Sydnee: There were, like, detox things in the room that you could—I mean, everything was for a price, and of course we did not use any of these things.

Justin: Folks, it was a—I'm here to tell you, there was a yoga mat. *In the room*, for sale, to buy. Just open this yoga mat and you've purchased it.

Sydnee: And a foam roller.

Justin: Yeah, yeah.

Sydnee: We did not—again, we did not use any of these items. It was a very nice hotel otherwise, I shouldn't just be throwin' shade. I mean, it was very nice other than all of the fake medicine that...

Justin: Uh, but I think the strangest offering, uh, that I literally could not make heads or tails of, uh, was the... IV cocktails?

Sydnee: So, this is an interesting thing to bring up. I have been receiving emails for a while now that I couldn't exactly parse at first what people were asking me, 'cause they were writing in and requesting that we talk about IV therapy. And I'm thinking, "Do you just mean, like, the history of... the IV? Like, intravenous—"

Justin: Like saline, and all that good stuff we put into bags.

Sydnee: Right, like, how did we come up with the equipment? And to do that, and the stuff that we put in, like, how did we figure that out? Is that what you mean?

But it became clear to me pretty quickly from how many emails I was receiving, and then the content, that something is going on now with IV therapy that isn't strictly evidence based, I would say?

Justin: That's generous.

Sydnee: Or you could say not at all evidence based.

Justin: Sure.

Sydnee: Um, and I wanna talk about IV—you'll find it as, like, drip therapy, infusion therapy—there are—I would like to go to an IV bar, some people will say. Like, there are various names for it, but it's the idea that you're gonna get something through the IV... but not—

Justin: Not *medicine*.

Sydnee: Well, not because, like, a doctor said you needed it. Like, you went to a place and paid somebody to do it. Does that make sense?

Justin: Right. Yes.

Sydnee: It's retail IV therapy.

Justin: Yikes! I mean, like, super yikes! Right?

Sydnee: Uh, yes. Yes. And, uh, thank you to everybody who emailed me about this for a while now.

Justin: I can do it.

Sydnee: There's—go ahead.

Justin: [singing to the tune of "Yakko's World (Countries of the World)" from *Animaniacs*] Thanks, Lindsay, Rebecca, and Kada, Melissa, Ari, Carrie, and Amy. Britney and Dia, Alexander, Drew, Alex, Brian, Ansi, Karina. Hannah and Anthony, Monique and Salem, Samantha, Nelson, Lexie, Faith. Valerie, Danielle...

Sydnee: That's it.

Justin: That's it. [singing] Ba-ba-ba—and those are all of the people!

Sydnee: But thank you.

Justin: Had to resolve the melody or else I would get annoyed.

Sydnee: [laughs] Uh, so from its—let's talk just a little bit about—as a—as a physician, as someone who attended a medical school and learned about IV therapy and now is responsible for, you know, prescribing it and, like, deciding when it is necessary and whatnot, the very basic idea—it means intravenous, so... in a vein. [laughs quietly]

And this would be as opposed to what we said is PO. If you get a medication IV, in a vein, or PO, which means by mouth, from the—

Justin: Or there's UB. [pauses] Up the butt.

Sydnee: No. That's PR.

Justin: Nn—[wheezes] It's bad PR in a lot of cases. [snorts] Depending on what's goin' up there. A lot of celebrities have run—run afoul of that.

Sydnee: PO is from the Latin for Per Os, by mouth. And Per Rectum, PR.

Justin: "[deep voice] Per Rectum. Oh, how fancy—" Up the butt! You mean in the butt.

Sydnee: Professionals, honey.

Justin: Okay.

Sydnee: Uh, why would we do this? Why would we put something in your vein instead of in your mouth? Well...

Justin: I can guess. Tastes bad. [wheezes]

Sydnee: Not typical—usually it's that—no. That's not—it is never simply because it tastes bad. That is never the—that is never the only reason. Perhaps it also tastes bad, but that is never the reason.

Justin: If they have blood and you're gonna get a blood transfusion... like, no one's gonna be like, "I'll just drink it!"

Sydnee: Well, that wouldn't work.

Justin: Well, okay—

Sydnee: 'Cause blood goes in the vascular space.

Justin: Well, that's one example of something that, like, would not... maybe that's one reason, is 'cause it's, like, it wouldn't be good to go through your digestive juices.

Sydnee: Right. You would just digest it, and that would—it would not help you. And you'd feel bad. You'd feel very bad. Um... but in terms of fluids that can hydrate you, that's one thing we might put through an IV, right? Here's some—we say "IV fluids."

Justin: Yeah.

Sydnee: It's almost never water. Um, that would be very dangerous to just infuse straight up water into your veins. Uh, it's usually mixed with electrolytes. So, like, normal saline, you'll hear.

Justin: [simultaneously] Gatorade.

Sydnee: Well, it's not Gatorade. [laughs quietly] But it's got electrolytes in it. There are various mixtures of electrolytes. And if somebody cannot take things by mouth, if they cannot drink... then they may necessitate IV fluids.

Justin: Or they don't want to.

Sydnee: Or if they don't want to—

Justin: 'Cause it's boring.

Sydnee: Well... if for whatever reason they won't, can't, don't drink, and they're at risk or becoming or are dehydrated, then that is a reason we would do something IV.

Justin: You can request anything IV. Don't get bogged down in drinking. That's a waste of time. Just make them put it in the bag.

Sydnee: No... it would be if for some reason you—it's not safe for you to swallow or you cannot swallow, if you're vomiting everything up, um, if you're unconscious... uh, that kind of thing. Um, otherwise we actually prefer drinking as the best route for hydration. We've all had a stomach bug—well, except for Justin.

Justin: [laughs smugly]

Sydnee: Who somehow has maintained health. Uh, and it's hard to keep kids hydrated. It was hard to keep myself hydrated. Uh, but I know that the best thing for me to do is to just keep tryin' little sips, and try to maintain, orally, my hydration. It's better. It's better for your body. There is no advantage of an IV to a healthy person. There's no inherent thing—unless you absolutely can't, I mean, in which case yes, you need fluid. But if you can drink by mouth you should.

Justin: Well, I mean, there's, like—anytime you're using a needle, right? You're risking, you know, infection, no matter how small the risk may be. Or, like—

Sydnee: Yes.

Justin: —weird reactions or whatever.

Sydnee: And we'll get into that. We'll get into the risks of this. Um, other things you might need IV: medications or vitamins. Again, most of those things are just if you can't take them by mouth, uh, for some reason.

A lot of medicine work very well by mouth. We have formulations of them that work just fine. Like, they are made to take orally. They are metabolized appropriately, and they work just fine. There is no inherent advantage to taking something that works by mouth in an IV, except in very specific cases when, like, we need it to work faster, like anesthesia or a pain medication. Let's say somebody comes in there with a fractured femur, you know? Saying "Here's some... oral pain medication. That'll kick in soon enough."

Justin: Yeah, I need to be out *now*.

Sydnee: You need—you need something faster. An IV can work—in some cases, can work faster, so that's one advantage. And, uh, antibiotics sometimes, in specific types of infections, like something we call a bacteremia, like an infection of the bloodstream, bacteria actually growing in the bloodstream, in that case IV antibiotics are superior to oral.

Um, sometimes we can switch to oral eventually, but just suffice to say, there are very specific situations where a doctor would look at you and say, "You can't take this medicine by mouth. You need to take it by IV."

And when it comes to things like vitamins, I—it—this is almost never.. this is almost never the case. I mean, we almost never need to replenish your vitamins quickly via IV. I just—it's hard for me to—unless we're talking about ways to give you nutrients, replacing nutrients because you cannot take things by mouth—so this is, like, a chronic thing where you are going to have to get your nutrients in another fashion—

Justin: You don't have, like, an emergent—emergency Vitamin C situation.

Sydnee: No. There are—there are emergent situations where we give people magnesium, but this has nothing to do with just "Oh, I'm feeling kind of fatigued today. I might need some emergency magnesium."

It's more like, "Oh, I'm in a fatal arrhythmia called Torsades and I need magnesium right now or my heart will stop and I'll die."

Justin: So not something you hear people say out loud a lot.

Sydnee: Exactly. I mean, things that a doctor would tell you and you wouldn't be able to verbalize, because you can't.

Justin: Because of how bad your heart is doing.

Sydnee: [laughs quietly] Yes. Uh, and also because I would need some sort of EKG telemetry, some sort of machine to tell *me* that as well. I would not be able to tell you by looking at you.

So at this point you're in the hospital, and a doctor has told you that. So the point is, the vast majority of things we need—and certainly just regular nutrients, food and fluids and all the things we get from them—we get from... eating and drinking. As long as we can, we get them from eating and drinking.

Justin: "But Sydnee!" I hear me saying. "Why are people puttin' 'em in needles, then?" [wheezes]

Sydnee: So there are a couple histories to discuss here. First, I wanted to just briefly mention the history of the IV, 'cause it is an interesting idea. Who came up with the first IV?

Justin: It's wild. It—abstracted out, it is a pretty wild idea.

Sydnee: The first—our first, like... kind of hints—

Justin: The idea that someone would just be like, "Hold a bag and, like—here, plug this into you. I'm just gonna stand here and hold it." 'Cause you know they didn't have a metal thing for it.

Sydnee: [laughs quietly]

Justin: So it's just like, "I'll stand here and hold it. Just let this bag drip in you."

Sydnee: That was basically.. I mean, well, initially the ideas were just for blood, 'cause we had no idea what else we'd be putting in people. So if you look back to, like, the early writings that reflect—even if they weren't trying it, but, like, the ideas that people were writing about what IVs might be—and this dates back to, like, the 1400's. You have people writing about this idea that "What if we could

use, like, silver tubes to connect the vein of one person to the vein of another person?"

And the idea was very—it was very unscientific. "Maybe an old person who's near death could be rejuvenated and revived if we give them a young person's blood."

Justin: What a fun time to be in medicine.

Sydnee: [laughs quietly] Um, and again, this wasn't really *done* routinely, but a lot of people wrote about it and thought about it. So, like, these ideas were there, but it was mainly in regards to blood.

Um, the first real work in this area was done in the 1600's. There's this story that supposedly inspired these, um, at the time medical students, who went on to become all kinds of different scientists, doctors—one guy was an architect—anyway, they witnessed this case of a young woman, Ann Green, who was sentenced to death by hanging and managed to survive, although they didn't realize that.

Like, they brought her down from the gallows, thought she was dead, brought her back to—they were medical students, so I'm wondering if it wasn't, like, a... rogue dissection that was open to happen?

Justin: Okay, alright.

Sydnee: But one way or another, they realized she was still alive. So they did a lot of work to revive her. After this, she was pardoned.

Justin: Really!

Sydnee: It's a weird—weird, sad case. Although she lived! She lived, and was pardoned. But from this, these young students were inspired to work on IVs, so I don't know what exactly they did to her to revive her.

Justin: Yeah.

Sydnee: But that is the—that is the, perhaps apocryphal—but that is the story that leads to a lot of these, uh, guys working on IVs. One of 'em is Christopher Wren, who would go on to be a famous architect and design a bunch of churches. But at the time, he was working on connecting quills to pig's bladders. As, like, a

way—like, you use the quill as the needle, and then the pig's bladder would hold the... whatever.

Justin: You used to be able to do that. Just be like, "I'm gonna be a famous doctor guy now, and I think later I'm gonna be a famous architect guy." 'Cause there wasn't that much to learn, 'cause we didn't know anything. You could—

Sydnee: [laughs quietly] "So, I mastered that!"

Justin: "I mastered that! It took three months! We don't know anything! I learned it *all*."

Sydnee: Uh—

Justin: "There's four books about medicine. I read all of 'em. I guess I'm a... medical expert now."

Sydnee: One of his contemporaries, Richard Lower, who was an anatomist, actually—he remained in medicine, it seems, for his career—but he worked on—

Justin: [laughs quietly]

Sydnee: [laughs quietly]

Justin: Little underachiever.

Sydnee: —animal to animal blood transfusions as a result of this work. Um, that was initially, like, with dogs. He would try to transfuse blood from one dog into another dog. That was what he started with. And then somewhere inspired by that to try animal to human transfusions.

Justin: Sure.

Sydnee: Um, this... at first—it's always the same with these stories. You read that, like, it seemed to go okay at first, and then it was disastrous.

Justin: It was very bad.

Sydnee: Which I would say probably was disastrous from the jump. You should not put... straight up animal blood into... human... veins.

Justin: No. What you should do first is put human blood into animal blood, see if they get our incredible powers.

Sydnee: Ye—[laughs quietly]

Justin: Of speech and thought.

Sydnee: Uh, they were banned in France—

Justin: [simultaneously] Or thumbs.

Sydnee: —by 1668 because of this, and so then people started trying it in England, and later that year [holding back laughter] they were banned there too.

Justin: Yeah.

Sydnee: Um, because of some—they tried some, uh, lamb to human transfusions? They thought that, uh, specifically for cases of pr—I mean, probably what we diagnose today as some sort of mental illness, some sort of, like, schizophrenia or something is what it sounds like they're trying to describe—they thought that lambs were calm, and so the blood of a lamb would calm you.

Justin: I could go for a lamb to human PO translu—[mumbles unintelligibly] right now.

Sydnee: That's a weird thing to say.

Justin: Eating. That's like a weird way of saying eating lamb, and I don't actually like to eat lamb. I don't know what I was doin' there.

Sydnee: I'm still just on crackers and toast right now.

Justin: Yeah, it's rough. It's rough.

Sydnee: Uh, the IV thing—

Justin: Hey, I got the pho upstairs that I got for you yesterday.

Sydnee: We'll see.

Justin: If you wanna eat that later

Sydnee: We'll see. Maybe later. The IV thing became popular again when an American physician, Philip Syng Physick either—he either tried it or he wrote about it. Nobody's really sure.

Justin: [snorts]

Sydnee: But he wrote in a way that people thought he had tried a human to human transfusion, and this inspired a British OB, Dr. James Blundell, to try it. And he came up with a bunch of devices—

Justin: I would not let someone... named Dr. James *Blundell*... "What—so what are gonna do?"

"[indistinctly] I'm gonna take your blood out and put it into somebody else."

"And what's your name?"

"[goofy voice] Dr. Blundell!"

Sydnee: [laughs]

Justin: "Okay. I don't think so. I think I'm gonna wait for Dr. Steely-eyed... McLarson. Something, like, real... real solid, you know?"

Sydnee: I don't know...

Justin: "Real solid character. Ms.—Dr. Smith."

Sydnee: [laughs]

Justin: "I'll let him do the blood transfusion, thank you! Not [goofy voice] Dr. Blundell! I'm sorry, I got the needle in my dang foot!"

Sydnee: [laughs]

Justin: [blows raspberry]

Sydnee: Do—[laughs quietly] well, Dr. Blundell actually—

Justin: "[goofy voice] I stepped in a fart!"

Sydnee: —he did a—he was actually responsible for doing the first real series of successful human to human transfusions. He had a couple different devices—

Justin: Me and my qu—quick leaps to judgment!

Sydnee: He had, uh—the impellor and the gravitator. One worked by gravity. That's what that's all about. But—

Justin: Well, he's not gonna name 'em the Blundell device, is he?

Sydnee: Um, and so that—that was really—but the—again, this is kind of limited, because at this point we still don't know about blood types, so you're still—every time you're doing this, you're rolling the dice, right?

Justin: Mm-hmm.

Sydnee: Because—a lot of time they would look for, like, um—a spouse to be a donor. Which is, like, the le—I mean, here—you've got all these family members, and you could—maybe, maybe you've got a little more chance. But then... spouse it's just, who knows?

So eventually people started to think, you know, this is really cool for blood. But, like, is there other stuff we could use these devices for? You know, at this point we have the early blueprints for syringes and, you know, IV—not really catheters yet, but needles that go in the vein and—and bags to hold stuff. So could we do other things?

And it was really cholera that was responsible for, uh, the development of those things. In the 1830's, there were cholera epidemics, and people were dying, you know, in large scale. And a lot of it, they figured out, was due to just the loss of bodily fluids and electrolytes so quickly.

Uh, and so they developed an early form of IV saline solution to combat this. And this was—this was the first thing we were gonna start putting in veins that wasn't blood, really. Um, and throughout the late 1800's, this really inspired people to try other things. Like, "Well, what about other, you know, things for

malnourishment or chronic illness? Are there other things we could put in the IV that would help fix those things?"

Justin: Right.

Sydnee: And so you see all these different things. Like, as early as 1876 is when Dr. Sydney Ringer, who anybody in medicine will know that—where I'm going with that right now...

[pauses]

Justin: You're giving me this look, Sydnee, that I couldn't parse in a thousand year—should I just sort of tell you what you mean by that?

Sydnee: [holding back laughter] He created a solution... known as lactated Ringer's.

Justin: The pregnant pauses are killing me, kid. I don't know—I don't know!

Sydnee: It's still in use today! 1876! that's how old LR is. Anyways, it's still—it's still used for some patients today as a... [laughs] as an IV solution that is necessary with a certain blend of electrolytes. Um, for—for very specific reasons, of course. We don't give them to everybody. It's in some patients.

Uh, and then that's when they started using medications—

Justin: [loudly] Oh, wait! Lactated *Ringer's*.

Sydnee: Don't make fun of me. And then, uh—this was the first time we started putting medicines in the IV, too. Things like opiates were the first thing we tried.

Um, and the equipment got better after that. We started, uh—we switched to rubber, eventually, and then plastic. Um, we started to develop what would become the mainstay, and what's still in use today, is the idea of having a needle with, like, a catheter—a thin, flexible tube over it, so you would use the needle to insert the IV, and then withdraw the needle so that all that's left in your arm is the thin plastic tube, not the needle.

Justin: Do you wanna know something? I didn't know—I didn't know that was a thing.

Sydnee: Yeah.

Justin: Really?

Sydnee: Yeah!

Justin: I didn't know that.

Sydnee: That's what's in there.

Justin: I didn't know there.

Sydnee: It's not a needle.

Justin: Didn't know that.

Sydnee: No, it would—

Justin: Until just this exact second.

Sydnee: —it's hugely advantageous, because as you can imagine, if a needle was in your arm you kinda gotta hold it still. Um, whereas once you can withdraw the needle and it's just that thin, flexible tube, it gives you a lot more—

Justin: Did not know that til this exact second, 39 years old.

Sydnee: Yep. So that—that is what is in the modern IV. And we developed that, the vacuum-sealed containers to hold whatever we were putting in the IV so that you could reduce contaminants and infectious agents and that kind of thing. Um, and, uh—and eventually, also—this was all the realm of physicians. It wasn't until the 1970's when the first nurse at Mass Gen, Ada Plumer, inserted—was taught and inserted the first IV, and after that it quickly became the domain of the nursing profession.

It's something that—I have inserted IVs [holding back laughter] because I was required to do so in medical school.

Uh, but I did not... like, that is not something routinely that you find physicians doing anymore. It's really—whenever a patient says that about a shot or an IV or

anything, like, "Well, will you do it for me?" I always say, "You don't want me to. You want the nurse to do it. I will not do as good a job."

Justin: Syd, IV sounds great, and it sound like... very good, and it's good we did it, and I can't think of any way that we would ever misuse it!

Sydnee: Well, of course we found a way to misuse it, Justin. Of course we did! As long as there's money to be made... but before we do that... speaking of money—

Justin: [laughs] Let's—we'll make *our* money!

Sydnee: We'll make *our* money! Let's go to the billing department!

Justin: [simultaneously] [through laughter] Let's go to the billing department. [laughs] Let's go.

[theme music plays]

Justin: Uh, you know, travel's always stressful, especially when you're traveling with as many kids as we do. Uh, and we look for anything that could make it just a little bit easier, and one of the best ways we've found is Away luggage.

Sydnee: I thought you were gonna say drinking.

Justin: [snorts] That's—that's right up there.

Sydnee: [laughs]

Justin: Everyone... uh, has a unique travel style, so Away has a range of suitcases that are made from different materials, different colors, two different carry-on sizes, so it's very customizable to the way, um, you like to travel.

All their suitcases are designed to last a lifetime, with durable exteriors that can withstand [holding back laughter] even the roughest of baggage handlers.

And, uh, they've got four 360 spinner wheels, guarantee the smoothest roll... even through the most hectic of airports and stations. I saw a guy when we were

flying back who was in the American Airlines office complaining [holding back laughter] because they had just destroyed his third suitcase.

Sydnee: Oh, no...

Justin: And you could tell—well, *I* didn't feel bad for him, Sydnee. I said, "You know what you should've done?" I said this in my head to him. Right to his face in my head. "You should've gotten an Away suitcase."

Sydnee: If you just listened to the *Sawbones* podcast, then you would've heard about it.

Justin: Away offers a 100 day trial and free shipping and returns on any order within the contiguous US, Europe, Canada, and Australia. So, to get your suitcase and shop other travel essentials, visit awaytravel.com/sawbones20. That's awaytravel.com/sawbones20.

New sponsor this week, too, Syd.

Sydnee: Who's that, Justin?

Justin: Honey...

Sydnee: Honey... [pauses] Yes?

Justin: Not you! Ha ha!

Sydnee: Ah?

Justin: See, I was waiting. You were a little slower to—let's try it again, 'cause it's a great bit.

Sydnee: Okay, okay. Alright.

Justin: Okay. It's a real good bit. Got a new sponsor this week, Honey!

[pauses]

Sydnee: Yes?

Justin: Wow, e—still very slow—let's just, like, get us in that *Burns and Allen*, like, that s—that pattern.

Sydnee: Okay, okay, alright.

Justin: That pattern, okay. We got a new sponsor this week, Honey!

Sydnee: What is it?

Justin: [wheezes] [high pitched] It's—

Sydnee: [laughs]

Justin: [high pitched, through laughter] —it's not you. It's called Honey! [normal tone] It's a, uh, shop—

Sydnee: Oh, you really got me.

Justin: Uh—[through laughter] it's a shop—

Sydnee: What a—what a crack up!

Justin: [through laughter] What a crack—

Sydnee: What a knee slapper!

Justin: [through laughter] What a card I am. [inhales] Honey is a free online shopping tool that finds the best promo codes and applies them to your cart. What does that mean? Okay. So, you're shopping at a place and you're gonna buy something from the little drop down, and they have a thing that says "apply coupons."

And then Honey will just go out on the internet and look for coupons for you to use, and then help you make the prices drop. It's, like, imagine if you're physically in the store and they're like, "Do you have any coupons?" And you're like, "No." Honey is the friend that runs up to you—sprints up like, "[out of breath] Wait! Wait! I have coupons! Here!"

Sydnee: "Here they are!"

Justin: "[out of breath] Use these, please!"

Honey has found, uh, its over 18 million members over two *billion* dollars in savings. 100% true story? Uh, I installed Honey on my browser, and the first thing I needed to buy was, um, a f.. a pan, a frying pan. Uh, and it saved me \$17! Just 'cause when I went to check out, the little Honey thing popped up and said, "Hey! Let's look for coupons for you!"

It found me one that saved me 17 bucks on a pan. Are you kidding me with this? Fantastic. To not use Honey would simply be to just, uh, be—be passing up free money. It installs in two clicks, lives in your browser, and, uh, you can get it for free! At joinhoney.com/sawbones. That's joinhoney.com/sawbones.

Sydnee: Alright, Justin. Where did it all go wrong?

Justin: Where did it all go wrong?

Sydnee: As far—

Justin: Probably with us.

Sydnee: —as far as I can tell, the—it starts with a physician that was practicing in Baltimore in the 60's named John Myers. Uh, and it's hard for me to find a lot of information about Dr. John Myers, other than this specific part of his life. What other wonderful attributes he may have, I do not know.

Justin: Or terrible.

Sydnee: Or terrible. I don't know. All I know—

Justin: Who knows? Could be a real monster.

Sydnee: —is that after—or not. Like, let's not assume that.

Justin: No, I'm sure he wasn't, but I'm saying... we can't not know.

Sydnee: I don't know. What I know is that after he passed away in 1984, his patients went looking for new doctors. And I have been on the—that—this end of

things, where a patient will come to me and say, "Hey, I'm new to you. My old doctor used to do... whatever this thing is. Can you just do this?"

And I will think, "Oh, that's not... oh, that's not a thing. Oh, no! Why did they do that?"

And it's hard. It's hard for the patient, who loved their previous physician and had a trust in them. And it's hard for me as their new doctor, trying to develop that relationship to say "Ah, I can't—I mean, this is something that really stretches the bounds of what's safe and what's evidence-based and scientific, and I might harm you, and that—obviously I don't wanna do."

And that's a tough position to be in. But these patients went out looking for new doctors, and a lot of them started asking their doctors for a vitamin solution that Dr. Myers used to give them.

Now, whatever Myers' original formula was, no matter what anyone tells you, we don't really know. We have an idea of what was in it, we think, but mostly based on what patients told other doctors.

We don't have—anyone who says that they have the *original Myers formula*... no. You have what you *think* might be.

Justin: Yeah.

Sydnee: Um, I don't know if it matters or not, though. Because he was apparently using this for patients with—well, lots of stuff. Uh, chronic pain, heart conditions... things like depression or anxiety, fatigue, um—

Justin: That's getting to be a lot of things, Syd!

Sydnee: —and if they didn't get these regularly, the patients said that whatever their symptoms were would come back, and so he would give them regular in—these were more injections as opposed to—they were IV injections, not necessarily hook you up to an IV.

Justin: Right.

Sydnee: Um, but he used something that combined magnesium, calcium, thymine, Vitamin B6, B12, uh, calcium, Vitamin B Complex, Vitamin C, and some hydrochloric acid. Something to that effect.

Justin: Okay, wow. That's quite a—quite a blend.

Sydnee: Now, other docs heard about this. And I imagine there were quite a few like me who were like, "[quietly] I—I—not—that's—I can't. Um, that's not... there's nothing there. That's not... real."

Um, but said it in hopefully a nice way—

Justin: [laughs]

Sydnee: —although I have found us—usually people get frustrated with you and leave and don't come back. But you try. You do your best. You do your best. Um, but there were some docs who said "Hey, well, maybe ol' Doc Myers was onto something!"

Justin: Sure!

Sydnee: "I'll cook one up!"

Justin: "Sure, we can getcha a blend here! Just whip one up in my blender. My Blendtec."

Sydnee: So a lot of these docs started cookin' up their own Myers cocktails, Myers formulas, Myers whatever you wanna call 'em, protocols. Uh, and they changed 'em around a bit. Like, the hydrochloric acid was gotten rid of pretty quickly. Uh, some things were upped. Like, the doses that were reported of things like magnesium were so low... that they could not possibly be doing anything physiologically. [laughs quietly]

Um... they were like—it was like homeopathy. And so they—so a lot of the doctors would, like, up the things to a dose that might actually do... something.

Justin: Maybe cut back the hydrochloric acid, maybe?

Sydnee: Yeah, that was cut out.

Justin: Yeah.

Sydnee: Yeah, that was out. Um, and then they started giving their patients, the ones who adopted this, Myers cocktails for... anything. You find doctors claiming that it helps with asthma attacks, acute migraines, fatigue, uh, and chronic fatigue syndrome—both, just, acute and chronic fatigue—fibromyalgia, muscle spasms, upper respiratory tract infections, chronic sinusitis, seasonal allergic rhinitis—um, some patients would improve if they had congestive heart failure or angina or hyperthyroidism or dysmenorrhea, which means painful periods.

Justin: This is—you know what this feels like? It feels like the kind of thing where, like, if um... Dean Martin had to do a show that night but he was really sick, this sounds like the thing that the—like, the weird smoking doctor who they brought—he travels with with give him? Like, "[gravelly voice] Lemme just whip him up one of these. These cocktails. That's always perks him right up!"

Sydnee: It reminds me of that—there's an episode of *Mad Men* where they do that. Do you remember that? Where they invite everybody into the office 'cause they've got some doc there who's gonna give everybody an energy shot?

Justin: Oh yeah! Yeah, yeah.

Sydnee: And you have to assume it had some sort of amphetamine in it or something—

Justin: Yeah, right, right.

Sydnee: -'cause they're all runnin' around afterwards. Anyway—yeah, it—I mean, it really—it—it... speaks of that, except as far as I can tell there weren't any—everything in it is either, like, a vitamin or an electrolyte, or something like that. Like, it's not... I don't know of any, like, use where you actually put some sort of drug in it or something.

Justin: There's, like, a sub-logical fallacy with these where it's like... it's not—there's—I mean a subcategory of logical fallacy where it's like, if you get a lot of things that won't have an impact but mix them together, it sounds like a really potent cocktail of, like, "Wow, that's a lot of different things you've put in there."

Sydnee: You can also play on, like—and we've talked about this on the show before—people seem to fall for Vitamin C a lot. I mean, not that Vitamin C isn't important that you have an appropriate amount of it, but... supertherapeutic

doses, massive doses of Vitamin C has never been proven to do any extra thing. Um, other than make you pee Vitamin C. But there's that.

And then, like, B12. I find that's a common misconception, that taking B12 will give you energy, when the reality is that that's only true if you're deficient in B12. If you're not deficient in B12, getting extra B12 doesn't... do anything. So, I mean, certainly if you have a B12 deficiency you should take B12, but otherwise, you're not—that's nothing.

Justin: It's nothing.

Sydnee: Um, but that's a common misconception. And so from—from these early... uh, kind of reinventions of the Myers cocktail, you saw this spread to beyond just individual doctors, although there are still doctors doing this, probably for cash because... I can't imagine what you would bill an insurance company that would get this covered.

Um, but it's also done by, like, some chiropractors, some naturopaths. Um, and then are these IV therapy bars... that have sprung up. And this is a place where there prob—they probably have to have a doctor, I would say, on staff. Or at least by name.

Justin: [holding back laughter] Across the street?

Sydnee: Um—[laughs quietly] there is a—they usually claim a doctor affiliated with it, somehow. Uh, but they—this isn't the same as having something prescribed to you individually as a doctor. Because, uh, they've gone far beyond the Myers cocktail.

Most of these places still do offer what they call the original Myers cocktail, although as we have said, who knows what it was? Uh, they have in—

Justin: Well, that's pretty bad if you can't even get the—it's like a fake... version of the fake medicine.

Sydnee: Of the fake thing.

Justin: It's not a thing. It's, like, [through laughter] the guy in *Multiplicity*. [wheezes]

Sydnee: And they—[laughs] they have infusions for everything now. So, uh, initially I guess they were mainly targeted at people for hangovers and jet lag. Those were, like, the two things that these cropped up for, and you could even find 'em, like, at music festivals. And they would come to your house, like, if you were really rich. You could pay them to come to your house and they'd, like, help you recuperate after a rough night of partying, or if you just had to fly from coast to coast, and you had to... you know, I don't know, film something. 'Cause, like it was—

Justin: [simultaneously] Now, I'm assuming the base—

Sydnee: —it was very popular with celebrities and rich people.

Justin: I'm assuming the base is saline, right?

Sydnee: Mm-hmm.

Justin: That's mixed in—with other things mixed into it, right? Presumably?

Sydnee: Yes. Yeah.

Justin: That *would* work for the hangover, right? Like, you would at least feel better—not—you would at least feel better—

Sydnee: In—in part, but that also—it's a misunderstanding, and we talked about this on the hangover episode. A hangover isn't simply dehydration. Yes, you are probably somewhat dehydrated, and yes, part of the recovery from a hangover is to drink fluids.

But one, I have no data that says giving them to you IV is going to rejuvenate you, make you feel better from a hangover *faster* than just drinking. And two, there's also other stuff that makes you feel bad from a hangover that—

Justin: The toxins and the [crosstalk]—

Sydnee: Yeah, that saline isn't gonna fix.

Justin: Got it.

Sydnee: Um, but yeah, that was kind of where they started. But then they... they blossomed from there. Um, you can find a lot of these different places now.

Mainly in big cities, but they're spreading! They're spreading. I think they're—I saw that there was one in Ohio that we could probably get to if we—

Justin: [quietly] Great. Perfect. Let's do it.

Sydnee: —ever decide to abandon science altogether. Um, they will provide you with all kinds of different cocktails, and that really how—they call—a lot of the websites call 'em "menus."

Justin: Hmm.

Sydnee: So you can peruse their menu for the cocktail you prefer. And they have names like "Libido" and "Immune Booster," "Diet and Detox," "Pain Blaster," "Liver Cleanse," "[dramatically] The Performance—"

Justin: [snorts]

Sydnee: "Nirvana—"

Justin: [through laughter] The Performance?

Sydnee: —and "Brain Focus." Um, and you can—you—there's a wide variety of costs. The original Myers, um, from this one website—and from most that I was looking at, the original Myers is, like, your base. It's, like, 99 bucks, 100 dollars, something like that at most places. But you can—I mean, you can spend a lot more.

They're usually in the mid-hundreds to low two hundreds, and then I found called a Hydra Stem, which is for chronic pain, joint injuries, and tendinitis, which is \$4,000. Um, which made me wonder if it had stem cells in it, which is a whole other thing. Uh, but I couldn't find—that's the other tricky thing about this.

So, I looked through a lot of these websites, and some of them list what they call the key ingredients. [pauses] But I—it was very difficult for me to find any complete list of components anywhere, and some of these websites had *none!* They just said vague things like "A mixture of vitamins and amino acids."

Justin: Yeah, hard pass! No thank you! Like, you're just gonna inje—oh, but you'll just inject that into me? Okay, perfect, excellent.

Sydnee: I emailed one of the websites and said, "Could I just know what your—like, what are the components of these cocktails? Is there a place where I can research this, where I can look to a list?"

And I never heard back from them. Um, of course this same website—they had a—a doctor? Who wrote one article—they had a blog. And there was a doctor who put one article on the blog, like, attesting to how good and true all of this is.

Justin: Right.

Sydnee: And so I kind of dug into this doctor to try to figure out who—who they were, and it was—as far as I can tell, there is a real physician attached to the name. Um, I think. If it is the right person. But the photo on the website that is next to the doctor's name...? I—I reverse image searched it. It's a stock photo.

Justin: Hmm.

Sydnee: So that's weird!

Justin: That's weird, yeah.

Sydnee: But—

Justin: That's very weird.

Sydnee: —I don't know. So I don't know if that was really the doctor, the name I found was really a doctor or whatever. Who knows? But all of it is sketchy, because it—I mean, if it's really something that truly works, you should just be able to tell people what's in it, and they can make a decision, talking to an actual doctor.

Justin: They'd probably tell you it's a proprietary blend or something like that.

Sydnee: Um, of course if you want a list of the most, um, fashionable, chic... spa-like experiences you can get, check Goop out.

Justin: Sure!

Sydnee: Of course.

Justin: Yeah, of course!

Sydnee: You know Gwyneth Paltrow is into this. It sounds—it's expensive. [laughs quietly] It's prohibitively expensive—

Justin: And dumb.

Sydnee: —and it does nothing. *Of course* she's gonna be in on it.

Justin: Perfect.

Sydnee: Uh, and so you're probably wondering, is there evidence for this? Well, obviously for the IV administration of medications and fluids in appropriate medical situations, well, yes. Obviously. We know that. We do that every day in the hospital. When I am working in the hospital, I am ordering IV medications for my patients every single day.

Justin: Right. Very good.

Sydnee: Yes, because that is... science, and we have evidence and studies that say that this works. But as far as evidence for the Myers, there's just collections of anecdotes. There is no—there is no solid research that the—whatever you want to call the Myers, whatever various cocktail you wanna say is the original, none of it does anything beyond placebo.

They did a study with no control group at all in, like, a handful of fibromyalgia patients, and it showed short term some improvement, long term no improvement.

They did another study that actually *did* have control and a placebo group and all that with fibromyalgia patients again, and there was no difference between the placebo group and the Myers group. And moreover, they noticed an exaggerated placebo response within the study, which is probably because we know that the placebo response is higher when you get an IV than a pill.

Justin: 'Cause it seems like very intense medicine.

Sydnee: Mm-hmm. Um... the idea that this is based on is that we absorb essential vitamins and nutrients better through the IV, and so this is just inherently a better—like, 'cause this isn't just for if you're sick. I mean, they *will* take your money if you're sick and are looking, and, like, desperate—

Justin: Of course. Of course.

Sydnee: —and looking for hope. But they'll also take your money if you're just, like, a healthy person who wants to feel... that unattainable "better" that everyone wants to feel. They—they will take your money and tell you that this is for wellness. This is just for a boost. This is to give you a glow, whatever.

Justin: [scoffs]

Sydnee: Something like that. Um, because you can't get all the stuff you need from food and drink the way we can. Well, if that were true, we wouldn't be designed to eat and drink! If—if you have a functioning GI tract, you absorb everything you need from it!

Now, obviously there are people out there who have, for various reasons, various illnesses, don't have a GI tract that functions in that way and *do* need assistance getting the nutrients and essential vitamins and things they need.

But that is something—that's very individual, and it's something that a *doctor* should help you with, diagnosing and treating and, you know, managing, checking levels of things. Um, because there are risks to this. There are absolutely risks to this.

Justin: Of course! You're letting some, like... st—just person who is at a place put a needle in you! There's a risk!

Sydnee: Well, and I—I... we've accepted, like—I feel like it's such a... it's so hypocritical. At the same time, I feel like some of these wellness people, like—we keep hitting on Gwyneth Paltrow, but there are a lot of 'em out there—but they will tell you at the same time that the problem with doctors is that they won't give you individual... treatment. That they have these one-size-fits-all solutions with their drugs and their pills and whatever. If this isn't the essence of that, a one-size-fits-all—"Here, we have these IV cocktails that fix everything. So, you have a problem? Come here, give us 175 bucks, and we'll give you a solution. And if you don't feel better, it's 'cause you needed to come back again."

I mean, it's... it's obvious snake oil. Um, it's not needed. It's not proven to work, and there are risks, as you have alluded to. There are risks. Um, when someone is going to stick something into your vein, they need to be using proper sterile technique, whether it is in the hospital, under my supervision, or in... whatever IV bar that Goop told you about.

And if they don't, they could cause an infection. They could cause inflammation of those blood vessels, which can be very painful. Uh, they could easily give you too much of something. Because from what I've read, some of these places will take your blood and have you talk to a doctor first. But not all necessarily have a regimented process. 'Cause none of this is FDA regulated, by the way. They all have that thing on the bottom.

Justin: Oh, yeah, yeah, yeah. "Not—not—

Sydnee: Yeah. "This is not intended to cure or treat anything—"

Justin: "—to cure or treat or to—" yeah.

Sydnee: Um, none of this is regulated, so they can—they could hurt you by doing the IV, and they could also give you toxic doses of whatever their, you know—

Justin: Fantastic, yeah.

Sydnee: —you can get too much of some vitamins, and you could cause... liver failure, kidney failure. I mean, who knows what you could do? Electrolyte disturbances, and if your electrolytes get out of wack... your heart can stop beating. As we've already covered.

So I would recommend against any of these. I—I think that what they're doing has no evidence. They—while most people are just gonna be out a bunch of money, and probably not harmed by this, there *are* going to be people harmed by this, for sure. And celebrities are using this. It's very popular among, like, people on Instagram and that kind of thing.

Justin: Of course.

Sydnee: I read an article where suppose—I don't know if this is true, but they were reporting that Kendall Jenner had this done and then had to be hospitalized afterwards for a reaction.

Justin: Hm.

Sydnee: And I would say that that is—is likely going to happen more and more often, the more and more people who use this therapy, so do—do not do it.

Justin: Don't do it!

Sydnee: There is no benefit. If you think you have a problem, go talk to your doctor. Your doctor is best suited to tell you what you need... whether it be by mouth or by IV.

Justin: Don't do it. Uh, folks, thank you so much for listening to our show! Uh, just want to let you know that we're gonna be appearing with *My Brother, My Brother, and Me*, February 19th, Cincinnati, Ohio at the Taft Theater. If you go to bit.ly/20funny, you can, uh, see that and see where else, uh, we're gonna be touring around this year. Um, but there's not a lot of dates up there right now, but there will be very soon, from what I understand.

We got a book that we wrote. It's called *The Sawbones Book*.

[pauses]

Sydnee: That is what it's called!

Justin: It's at Amazon, or, like, bookstores. Rather than spend \$175 on that, go buy ten copies of our book. Give it away to friends. You'll do a lot more good. And—

Sydnee: Or just one...

Justin: —for us! Well, they're spending \$175 to burn anyway, Sydnee! They might as well spend it on us. That's all I'm saying.

Sydnee: Don't do that. Just don't do that. Save your money.

Justin: Give it to... a charity. Whatever.

Sydnee: [laughs]

Justin: Uh, fine. Thanks to The Taxpayers for the use of their song "Medicines" as the intro and outro of our program.

Sydnee: And next week—

Justin: Next week!

Sydnee: —you've all been emailing, and I am listening. We will talk about coronavirus next week.

Justin: Yes.

Sydnee: So. Since there's a lot of concern.

Justin: Get there.

Sydnee: Yes.

Justin: Um, that's gonna do it for us, though, for this week. So, until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

[theme music plays]

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