Sawbones 447: Is Leg-Length Discrepancy Genetic?

Published February 28, 2023
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Clint: *Sawbones* is a show about medical history, and nothing the hosts say should be taken as medical advice or opinion. It's for fun. Can't you just have fun for an hour and not try to diagnose your mystery boil? We think you've earned it. Just sit back, relax, and enjoy a moment of distraction from that weird growth. You're worth it.

[theme music plays]

Justin: [singing] 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: [mumbling unintelligibly] Like, there's a meter and a—

Sydnee: [simultaneously] I don't—

Justin: You gotta resolve the melody.

Sydnee: I know. But I chose not to.

Justin: Hmm.

Sydnee: And that's really up to me, I think.

Justin: That is your choice.

Sydnee: You didn't ask me if I wanted our intro to be a song.

Justin: You could tell from my eyes, though. Couldn't you?

Sydnee: No.

Justin: You could tell from my eyes.

Sydnee: I mean, I could tell from the way that you just, like, made it a song. Like, you just went right into it.

Justin: Uh, yeah. I mean, from the singing you could tell I wanted to sing, you mean.

Sydnee: [snorts]

Justin: Yes, correct, I agree.

Sydnee: Yeah. You started singing so I assumed that your heart was overflowing with song, and it spilled out of your mouth.

Justin: Why are we in such a—that's how all singing works. Why are we in such a joyous mood? Well, friends, it's one of our funnest... episodes that we get to do.

Sydnee: Or most fun. [pause] [laughs]

Justin: This is untenable. This tenor... is untenable. It's an untenable tenor.

Sydnee: I can't. It was 80 degrees yesterday, Justin.

Justin: I know.

Sydnee: And I was—it was—that was so good for my mood.

Justin: Fool's—fool's summer they call it, Sydnee. A fool's—fool's spring.

Sydnee: And then it was 37 this morning.

Justin: I know. It's unthinkable.

Sydnee: Okay.

Justin: Okay. Well, that's the price you pay for living in a place that has four seasons.

Sydnee: I don't think it's that simple.

Justin: Hmm. You think there's other complicating factors?

Sydnee: I think there might be.

Justin: Impossible to say! Um...

Sydnee: No, it's possible to say. And to predict. And to address. But we're not doing a podcast about climate change right now.

Justin: No. We're doing a podcast about your medical questions! Here's your first one. Are you ready to expand your mind, Syd? Go full galaxy brain on all these and answer them to the best of your ability.

Sydnee: Okay. I will do my best.

Justin: "Hello, Sydnee and Justin!" Hello.

Sydnee: Hi.

Justin: "I have a weird medical question for you. There's been a lot of coverage lately about lots of popular chocolate brands having high levels of lead and cadmium in them. I eat a lot of chocolate, and now I'm worried I'm gonna get lead poisoning. Is there a way to test and find out if I have lead or cadmium at high levels? I've heard there's this thing called chelation therapy for getting heavy metals out of the body. Does everyone with a sweet tooth need to go get this now? Thanks! Katie."

Sydnee: Um, you know what? This was one of those questions where I thought, "Oh, I bet there was a news report that sort of sensationalized some sort of study, and the study was taken out of context and extrapolated to an extent that it really wasn't—" you know, like the conclusions of the media maybe outpaced the conclusions of the authors. That's usually the case, right? With a lot of this stuff. And then I went and read the study and some of the reviews and some of the, like, thoughts about it. And there is some truth here. So the—

Justin: I wish you all had been next to Sydnee on the couch when she was researching this. 'Cause I just heard a series of, like, increasingly distressed "Hmm. Hmm! Ergh... "

Sydnee: I like dark chocolate a lot, and I wouldn't say I'm a very regular—I don't have much of a sweet tooth. The salty is my problem, not the sweet. But—

Justin: Not your problem. Your preference.

Sydnee: You're right, you're right.

Justin: Your delight.

Sydnee: The salty is the thing that I will just keep eating 'cause I love it so much. The sweet I don't always crave. So anyway, um, there is—there was a study that was done I think originally released in December of last year, and then there have been some more articles written about it in the last couple months, so this is pretty recent stuff, that showed specifically dark chocolate had higher than what we consider preferable [laughs quietly] levels of cadmium and lead. And...

Justin: I try not to think too much about the fact that there are... totally copacetic levels of cadmium and lead. [laughs quietly]

Sydnee: Well, there aren't with lead, that's part of the thing is like, how much lead is okay? Well, none. So, I mean, part of it is like we don't want you exposed to it, but—I mean, 'cause they're heavy metals, and obviously if they accumulate in levels that are high enough they can cause you health problems. They can make you sick.

Um, so the process by which it gets into the chocolate is different for each one. Cadmium is being absorbed into the beans from the soil, so this probably has more to do with, like, overall pollution that cadmium is seeping into the cocoa. The lead is actually probably a little easier to troubleshoot. What they found is that lead was on the outside of the beans, and probably was from lead dust. Well, dust that was settling on the cocoa beans while

they're drying, and lead was in that dust. So there are probably some manufacturing processes that could be troublesh... troubleshot. Troubleshooted?

Justin: [simultaneously] Troubleshotted.

Sydnee: Troublesh—

Justin: Troubleshotted.

Sydnee: [laughs] In order to fix that.

Justin: Troubleblasted.

Sydnee: Either way, you can look—like, Consumer Reports did a breakdown of, like, which different chocolate brands had the highest levels of cadmium and lead and which ones were actually okay, so there's a wide variety.

Justin: Fun list to look at, by the way. Like, "Oh. We have that. Ooh, we have that."

Sydnee: "Ooh. Ooh. We have that."

Justin: "Oh, I have that. I have that. Oh no!"

Sydnee: I think right now it's in that sort of realm of, like, I'm not gonna tell—one, you don't need to avoid all chocolate based on these reports. Nobody's recommending that at least, as far as I can tell. They do recommend that you eat dark chocolate in moderation. That it shouldn't be... what did—Cookie Monster talked about a sometimes food. [laughs quietly]

Justin: Yeah, dark chocolate should be a sometimes food.

Sydnee: Yeah. And, like, I think that they are recommending that you eat it in moderation, especially right now while we're still figuring all this out. Certainly if you choose to avoid it—

Justin: [crosstalk] [quietly] It was supposed to be good for you.

Sydnee: I know. It was supposed to be good for you. And there are still good things about dark chocolate.

Justin: [simultaneously] It was supposed to be heart healthy.

Sydnee: Um, there are healthy properties. But—

Justin: That you have to now balance with the presence of lead and cadmium!

Sydnee: But the problem is we don't know. And so, like, there were questions, like, about people who are pregnant, or people who are breastfeeding. What could the implications be? We have no idea. Um, I would say you don't need to go get chelation therapy or go get lead or cadmium levels drawn just because you eat dark chocolate.

If you are ill and you go to your doctor and they evaluate you for a variety of things and they suggest, "Hmm, this might be consistent with heavy metal toxicity, and here are some test," or whatever, and then they recommend that, sure. But I would not get that test just because you eat dark chocolate, and I certainly wouldn't go get chelation therapy.

There's a lot of pseudoscience around chelation therapy. It's a real thing. Some people need it. There are a lot of people who use who absolutely do not need it, it is not necessary. So I wouldn't go do that, especially if somebody's doing it for, like, profit. There are people who will just do that, and I wouldn't…

Justin: Oh. Shock—imagine my surprise.

Sydnee: So the science is out—I don't have a hard and fast answer right now 'cause this is all pretty new. I would say that for me personally, as a lover of dark chocolate, I am going to moderate my dark chocolate intake. I'm not going to avoid it completely, but I'm also gonna be a little more, uh, picky about which brands I eat and how often I eat it for now, until there's more data.

Justin: And start looking for dark chocolate to advertise itself as being 100% lead-free. Guarantee within the next—

Sydnee: Lead and cadmium free, yeah, definitely.

Justin: Lead and cadmium free. You will definitely—and then you're gonna have missed this story, and then you're gonna think "Why are they... why are they saying that it's lead and cad—why—of course it's lead and cadmium free! Why are they saying that it's lead and cadmium free?!" And then you go down the rabbit hole.

Sydnee: [laughs]

Justin: Uh, here's another question for you, Syd.

"Good day! I was listening to the appendicitis episode and had a weird medical question. When I was—" I'm gonna try to pet Amelia. Hold on.

[pause]

Oh. No dice. Uh, "I had a weird medical question. When I was 11 or 12 I had my appendix removed. I was told that it could grow back. Is this real, and could I get appendicitis again? Thanks! Valerie."

Sydnee: So, your appendix cannot grow back. Do not worry about that. That is not something—I looked to see, like, has there ever been even a single case of this? And I couldn't find any evidence that this has ever—it doesn't make sense to me that it would happen, and I couldn't find a case where that had happened.

What can happen, if you ever read of a case of a recurrent appendicitis, what is actually occurring is an appendiceal stump... inflammation. Meaning where they made the cut to remove the appendix, they maybe left a little bit of tissue there, and that can get... stumpitis. [laughs quietly]

Justin: Stumpitis!

Sydnee: So there have been documenting cases.

Justin: Is that a [crosstalk], or—no?

Sydnee: —of just—no. Of just where they removed it, there's still a little bit of that tissue left, and then you can get a recurrent appendicitis there. But it is not because your appendix has regrown. That is not something that happens.

Justin: "Hi, Justin and Sydnee! I burned my tongue on a spoon that had been in a bowl that just came out of the oven. Look, I have ADHD and cannot defend my choices. And my roommate said that they heard from someone that eating straight table sugar is good for tongue burns, but they couldn't think of a scientific reason for that to be true. They also said that some other people talk about putting butter on burns? But that would probably make it worse, not better, because the layer of fat would prevent it from breathing. Is this legit? Either of these? Why do people think these things?" That's from AJ.

Sydnee: So I don't know—I tried to find a lot of, like, other references for the eating sugar for a burn or putting sugar on a burn. I couldn't find a ton of that. Sugar, or I should specifically honey, as a sort of form of sugar, has been put on all sorts of wounds and burns and skin problems for as long as we've known about it, right? So the idea that people might use that doesn't shock me. When it comes to the butter, that one I've heard, and that one I can tell you is not a good idea. Wherever your burn is, do not put butter on it.

Justin: I have heard that one too.

Sydnee: Yes. There is a concern that it would actually create sort of a coating over it and allow it to continue to burn, allow damage to continue to occur. And so you should not put butter over a burn. Best case scenario it does nothing, you know. So I wouldn't—don't do that. Don't put butter or sugar. There would be no reason to put sugar on a burn. I don't know why people would think to do that, but you shouldn't. The reason people think these things I think is because...

Justin: It's fun to eat sugar.

Sydnee: [sighs] Specifically with butter, my best guess is that it probably feels soothing in the moment. And so I think, like, if you look at stuff that's stuck around through history, we always say if it makes you—if it makes something happen, if it has an effect people will keep doing it, 'cause they think "Well, it did something." You know? And a lot of old fake medicine did nothing, so this did something. If your butter's cold and you put it on your burn, it probably felt nice. And so I think something that felt soothing was probably the best case at the time.

Justin: You also see a lot of these, like, kitchen staples. I think used in these sorts of, like, unconventional first aid treatments, just because you had a parent in the kitchen and the kid was burned it's like, "It would be nice if this was—" like, what do we have on hand? What is readily available that we can try to put on it? And I think that doesn't—it doesn't hurt that that's a common thing that you have on hand. You want to feel like you're doing something.

Sydnee: Well, I mean, think about a piece of raw meat on a bruise or something. If you're trying to bring down swelling and so you want to put something cold on something that is swollen, that is legit. So you grab... a steak, 'cause it's what you have, I guess? I don't know. These are very fancy people who all have steaks lying around. For us it's usually a bag of peas. Um, but no. Please don't put butter or sugar on burns. Um, these will not be helpful, and could be harmful.

Justin: "Hi, Sydnee and Justin. I went to a chiropractor a few years ago, and when they take x-rays it showed that one of my legs is slightly shorter than the other. The chiropractor explained that this is likely genetic and passed down from my mother. It made sense to me, at the same time, my mother and her sister both have hip/knee issues on their right side. My mom's about to get a hip replacement. However, I'm curious if this type of leg length discrepancy is actually genetic. If so, is there anything I can do to prevent the issues my mom is having later in life? Thanks, love the show. Francis in ATX," which is Austin, I believe. Right? Is that ATX?

Sydnee: I... I think? Yeah, I think that—that feels right.

Justin: That feels like Austin, right? I scoffed a little bit there because I didn't understand why one would need an x-ray to see if one leg is longer than the other. It seems like that wouldn't require any sort of imaging technology.

Sydnee: No. I mean, I guess it depends on how obvious the discrepancy is.

Justin: [simultaneously] I guess if it's not as pronounced, right?

Sydnee: Yeah. It is something that can just happen. You can just be born with a limb length discrepancy. That is, you know, congenital, meaning it occurs at birth. That can either be because one bone is actually shorter on one side than the other, and so they are genuinely two different lengths. Sometimes it's like a functional limb length discrepancy, and it has to do with the way that, like, the joint itself, like your hip, is functioning. Something can be contracted. The muscles that pull on the bones, the various things that connect, the tissues that connect to the bones can pull it so that it's actually—it is functionally shorter, even if, like, you took the two bones and laid 'em side by side they'd be the same length. Does that make sense?

Justin: [simultaneously] Mm-hmm, yeah.

Sydnee: It's being pulled in such a way that it's functionally shorter. That can also be part of the problem. I looked up to see if we know for sure that it runs in families, that it has that genetic predisposition, and I couldn't find a lot of evidence of that. I'm not saying it doesn't. Certainly it could.

Um, but it is just something that sometimes randomly happens. What I would say is that, you know, one, I would actually go see... your primary care provider would be a great place to start, but a referral to an orthopedist, especially one who specializes in that area, would be something I would recommend.

Um, over a chiropractor in this case, who would not be trained in treating or appropriately evaluating these sorts of situations, especially if it is something you've referenced there might be family members who need surgery down the road. Um, if that is something that you are concerned about or if you are

having significant symptoms as a result of this, you need to see somebody who is qualified to assess you and make those sorts of decisions as to whether or not you might a surgery.

And that would really be—I mean, I am a family doctor. I can do lots of things. I would send you to an orthopedist to evaluate those sorts of issues. So if it's causing you problems, I would ask your primary care provider about it. Maybe they have some more imaging or studies they'd like to do, and they could send you to an appropriate referral, would be my thought.

Justin: This is from Hannah. Hannah says some nice things about the show and then says "Every day after work I meet up with my kind and well-meaning neighbor to walk our dogs together. Any time I bring up anything to do with health or wellness so often has an at-home remedy to recommend, like putting on wet socks to bring down my daughter's fever. Now, usually a I just ignore and move on, but recently she's started mentioning stuff that's just wild, like putting her whole family on a weekend-long parasitic cleanse.

How do you broach this subject for what she's talking about is completely made up? Do you have any techniques for combating this kind of misinformation? I considered just sending her the Sawbones episode about it, but I feel like that might be too straightforward. Any help you can give would be great. Signed, Hannah the Nosy Neighbor."

Sydnee: I really appreciated this question, because I feel like it's a lot of what we try to do on the show, right? Um, but in all honesty, as much as I can provide information and I have training and schooling that gives me expertise, a personal relationship with somebody is often going to be much more persuasive or beneficial to changing someone's mind, or helping correct misinformation.

Um, that honestly—leveraging the relationship you already have with this person, any, like, trust or closeness that you have, is gonna be the best tool you have in that effort. Because people don't change their minds about stuff because you give them a stack of data, or even a link to a podcast. And I realize I'm saying "Don't share my podcast." [laughs] I'm not saying "Don't." I'm saying I don't think sending them a link to our show would make a difference, as much as I would love to say it would.

Um, if you want—if that is a helpful support to say "Let's listen to something together," and then you can secretly have picked one...

Justin: Let's listen to one together and make unbroken eye contact for 30 minutes.

Sydnee: No, no. But, like, if you have secretly chosen an episode that you think would be per—like, would be directly... but, I mean, honestly? The best thing to do is to recognize that a lot of people who sort of fall into these traps—and there are wellness traps, there are crunchy traps, there are lots of different versions of what this look like. You need to acknowledge that they probably have their family's best interests at heart, right? They're probably not trying to harm anyone.

I'm not saying no one is, but for the most part, no one's trying to harm themselves or their families. Nobody is trying to do something that is dangerous. They genuinely are trying to do the best they can for their—whoever is their family, kids or whatever. And they have been misled and they are misguided, but that doesn't mean... you're not going to be able to redirect that aggressively.

You can't... [sighs] beat them into doing the right thing. I mean verbally beat them I guess is what I mean. You know, you're not gonna talk 'em out of it. You're not gonna debate them. You're not going to argue them into doing something different. What you do—

Justin: What does that leave? Gaslighting? Negging? Negging is huge.

Sydnee: You find common ground.

Justin: [laughs]

Sydnee: You find—you find common ground. What you do is you find the things you agree on. You both want the best for your families, I'm sure. You both are trying to sort through all the information that we're inundated with all the time, to make the best decisions we can. Here are some things that you've found that work for you and your family. Here's some things or

some sources that you have found reliable that you think are good. Here are some ways that you have found to address those issues. "Oh, I can see why you would think that. That makes sense to me, and I know you're always trying to look for the best—you know,, the healthiest food to feed your kids, or the healthiest way to address that issue. I can totally understand. You know, I've tried this, and this has worked for me."

Those sorts of emotional connections, aligning yourself with someone and saying "We're on the same team, but we've come to different conclusions, and maybe if I show you why I came to my conclusions in a kind way, in an open, understanding way, you'll start to come to those same conclusions as well."

That is a much more powerful tool to change minds and help lead people away from dangerous misinformation than cold, hard facts or data is ever gonna be. And that's a lot harder to do. It's lots of small conversations that ease people in that direction, with no judgment, and no anger, and no laughing, and no mocking. Um, and that's hard. You're gonna have to bite your tongue a lot. [laughs]

Justin: That sounds too hard, actually, and I don't think I would be able to do that. I actually, thinking about it, definitely couldn't. I don't have the patience. I can barely do it with our children. I don't think I could take the time to shepherd a stranger away from crystals. [laughs quietly]

Sydnee: Uh, you gotta—you have to build trust with them. It does, it takes a long time. But you could slowly do that. If it's something that you—and, I mean, this is not your job. [laughs] You don't have to do this. But if it is something that you feel passionately about, and if its someone who you want to have a genuine relationship with, if you really value this person's friendship and you want to, you know, share the things you know with them, it might be worth the effort.

Justin: You think we can take a break, or—yeah, let's take a quick break.

Sydnee: Yeah, yeah.

Justin: And then we'll be back with more questions. Okay, Sydnee. Give me the line.

Sydnee: Let's go to the billing department.

Justin: Let's go.

[ad break]

Justin: "Dear Dr. and Mr. McElroy, how do I get a good primary care doctor? I grew up poor and my parents were a bit off grid, so I haven't had a regular doctor since I was a baby. In college I could always go to the campus health center, but that was only for urgent issues. Now I have my first actual adult job with insurance and everything, and I'm not sure how to go about finding the medical care I need.

Sure, I could just call up a doctor's office and ask, but I'm afraid they're going to be annoyed that I don't know what I'm doing. Worse, I'm scared that I won't be able to find someone who's gender affirming and won't be judgmental about my weight. Is it just a process of trial and error? Do I just have to go with whatever my insurance covers and call it a day? Any advice is appreciate. Much love. Milo." Milo rocks those they/them pronouns. And that sounds... hard. [wheezes]

Sydnee: That's a tough question, yeah.

Justin: That sounds really tough to me.

Sydnee: Yeah, it is hard, and it's harder than any of us—

Justin: Wait, no, this is actually easy. Ask Sydnee.

Sydnee: [laughs]

Justin: That is my solution.

Sydnee: Well, I mean, my answer is not gonna be incredibly satisfying, because I don't—and I'm not asking you to tell me this, Milo. I don't know where you live. [laughs] And so I—

Justin: [gruff voice] Where do you live? [wheezes]

Sydnee: I don't know all the resources available in your area.

Justin: We can't help you without your social security number, Milo. Send it our way.

Sydnee: [laughs] No, I—if you live in Huntington, I have lots of answers for you. But if you don't, I probably don't have direct answers to this question. Generally speaking, this is—first of all, let me acknowledge, this is a really challenging process for a lot of people. You're not alone. You're not silly for not knowing how to do this. Most people don't.

Justin: Hey, y'all? Straight up? Can I tell a story from my own life?

Sydnee: Mm-hmm.

Justin: I have carpal tunnel pretty bad in my wrists, and I have to get shots in my wrists, like steroid shots, to make it so I can still use my hands. And I didn't know—like, and I have had these before. I went to a doctor. I called the office that I had gone to previously. And I didn't know—but I had put it off for so long because I didn't know what to say, right? I didn't know if I needed to talk to my primary care doctor first, and I didn't know if I needed to call their office.

And, I mean, obviously you told me what to do, but like, had you not been there—like, I put it off for quite a while. And then when I finally called they were like, "You put it off for so long, it's gonna be six months before we can get you in to do the shots."

My hands hurt right then. So it's—even if you're married to a doctor it's, like, really intimidating. I don't know why it's so—it's so confusing.

Sydnee: It is. And the steroid shots gave you hiccups for a couple days, which is a whole other thing.

Justin: Oh, man! I didn't even tell you all about this. We gotta do an episode about this calamity.

Sydnee: Yeah. That's a whole other weird thing that can happen.

Justin: I had really, really bad hiccups for days!

Sydnee: For two days, but yeah.

Justin: Days is plural. Plural. Two days. Days, plural.

Sydnee: So, yes. It is—

Justin: And nights where I didn't sleep, 'cause of the hiccups!

Sydnee: And in this country, unfortunately one of the first places you do have to start is to figure out who is in your network. Who your insurance carrier will pay for you to go see. Because obviously you can see whoever you want, but if you see someone who is outside your network who your insurance doesn't cover, you're gonna end up paying out of pocket, and that can be very expensive.

It can be a few hundred bucks just to see the doctor, before you have gotten any studies done or paid for a medicine you might need or whatever else you might need. So a good place to start—your insurance provider should give you a list of doctors in-network. It may be available online, which would be an easy way so you don't have to make a phone call, 'cause I hate making phone calls, personally. But that would be a good place to start.

And then you have a list that you know at least is gonna get paid for. When you call a doctor's office, nobody is going to be annoyed that you don't know what you're doing. They're just sitting there doing their job. Nobody's annoyed. Nobody knows what they're doing. I don't know what I'm doing half the time when I call my own office to do stuff for, like, our family or my kids or whatever. Nobody's annoyed.

They're gonna ask you some information you might not know, and that's okay, if they ask you immediately about insurance stuff. I would have your insurance card handy. They might ask you who your carrier is, although normally they just ask "Are you insured?" They're probably gonna want to know your name, your birthday, your phone number... and then they might ask you if you have a preference as to, like, I know at our office they'll say, "Do you care what gender your provider is?"

And then they'll give you an appointment. So that phone call is probably gonna be very low stress, when you actually do it.

In terms of finding specific—

Justin: Oh, I'm already pretty stressed with the "What gender provider do you want?" I will stare blankly at you. There is no correct answer to this question. I have no idea.

Sydnee: I will say, most people don't care, but when they do care they want a female.

Justin: When they care, they care a lot!

Sydnee: When they care they want a female. I mean, almost—

Justin: Oh, well that makes sense. [wheeze-laughs]

Sydnee: I mean, that's—now, I'm not saying nobody prefers male doctors. This is not—I am a cis woman and I am speaking for myself only in this moment. There are people who call and ask for female doctors.

Justin: "Send us a—send us a woman doctor." [laughs quietly]

Sydnee: "Send us a lady doctor."

Justin: "Send us a lady doctor."

Sydnee: Anyway, the—the insurance is a big part of it. Making the phone call is not gonna be as bad as you think it is, I promise. The other piece of that, finding someone in your area who is gender affirming, or specific concerns you have, that's trickier. I know in our area, for instance, we have a resource guide that was made as a partnerships through Huntington Pride and Branches, the domestic violence shelter, that shows LGBTQ sensitive providers, affirming providers.

Justin: That's a good place to start probably, to see if there's a group like that in your area.

Sydnee: Yeah. I mean, so looking to see if there are—if you do have pride organizations or other LGBTQ advocacy organizations in your community, they may have lists. They usually do. Of people who are, like, either like, here are vetted resources, or even just, like, comments. Like, I know I went to this person and they were good, and this person—you know? So sometimes you have to do that. I wouldn't just randomly look for health reviews online, 'cause those can be all over the map.

But if you look specifically to organizations like that, they usually put together—we have statewide organizations and local organizations who have resource guides that will say, "Here are gender affirming providers in your area." So I would definitely look for those organizations as references, and then sort of cross-reference that with your insurance coverage list.

Justin: Not bad. Word of mouth, too. I mean, if you know people who have similar concerns to you, just seeing what they've heard or what doctor they see might be a good...

Sydnee: I know none of the kids use Facebook anymore, but it's a common Facebook post you'll see. So... [laughs quietly]

Justin: Um, "Hi, Justin and Dr. Sydnee. I know someone who's way too into TikTok, and occasionally says things that don't seem super connected to science. Recently they said I should stop using Liquid IV, an electrolyte additive for water, because it has unmethylated B12, which if you have the M... T-H-F-R gene," which sounds like a social media way of saying a bad word—

Sydnee: That's what we always said in med school, too.

Justin: Really? [wheeze-laughs] "Also, that kind of B12 may be generally bad for you as well. I couldn't get something specific from them regarding what it was that was bad, or what it causes, or how you would find out you have the gene. I was just curious if any of this is true, what the difference in methylated B12—the good vitamin, apparently—and unmethylated B12 is? I love the show and really appreciate your research. Thank you so much. Jill."

Sydnee: Generally speaking, here's what I would say. First of all—

Justin: Jill wants to know if Jill can keep using Liquid IV in their, um... their, uh—their borgs.

Sydnee: The electrolyte additive. In your—[laughs]

Justin: [wheezes] In their borgs.

Sydnee: This is for a borg, isn't it? No.

Justin: It's okay, Jill.

Sydnee: I am not aware of any danger specific to that product. I have never heard of that issue. A lot of the times, whatever the vitamin—

Justin: Fair—fair dinkum though. Didn't know about the [through laughter] lead in the chocolate until a few days ago!

Sydnee: When it comes to B vitamins, the nice thing is if you are taking in unnecessary B vitamin, generally speaking, you're just gonna pee it out. Now, obviously everybody can push everything. Humans will try anything. So is there an amount of B vitamin that you could take that I would recommend against? Sure. I'm sure you could come up with that. Generally speaking, if you're taking extra B vitamin, you're just gonna pee it out. You just have expensive pee, and that's it.

It is not one that is fat-stored in your body. It is water soluble, so it's just... gone. Most of us, especially if you've had your B12 levels drawn and they're fine, you don't need any specific kind of vitamin supplement, and we do not recommend at this time, like, broad testing for the MTHFR gene. That's not necessarily something that we need to do. We don't do that standardly.

Um, if people have certain problems, like blood clots, that might be something we look for. Uh, but otherwise that is not something that you need to... I would not lose a lot of sleep over this. I would not worry about it. And I don't know of any specific health concerns with using that product. I wasn't able to find anything.

Justin: "Hello. Long time listener, first time weird medical question asker. I actually have a few. Why does hair sometimes grow back curly after chemo? My mom always had straight hair, but it grew back curly and fluffy after she finished chemo. I heard it was anecdotal evidence... in other place, but I'm wondering if this is a real documented phenomenon." That's from Caitlin.

Sydnee: It is! It is a real, documented phenomenon. Your hair—not just curly—it can be curly, but after chemo your hair can grow back in different than it did previously. You know, it can be thicker, or fuller, or a different texture. All of those things can change. Um, it is usually the—so, chemo affects fast-dividing, fast-growing cells, so that's why you tend to have side effects like losing your hair or some diarrhea or nausea or vomiting, 'cause it affects the GI tract, and your hair cells as well.

Um, those drugs can continue to persist in your body and impact things, even after you've stopped taking them. It just takes a while for them to be completely out of your system, basically. And so that is why those hairs that first start growing in are still being impacted by that, so they're different. Over time, the expectation is your hair will start growing in the way it used to. That is generally what happens.

A lot of that can depend on exactly what chemo regimen you're on, how long you're on them... so when your hair grows back and how it grows back and if or when you can expect it to look like it did before, all of that is very variable. Your specific oncologist would have a lot more information, because

they would know about the agents you're on, but that is definitely a real, documented phenomenon.

Justin: "Hi, Sydnee. I love the show and hope you're doing well. My weird question is, should we reduce fevers when we are sick? It was my understanding that fevers are an immune response by our bodies to fight infections more effectively, so isn't trying to reduce a fever counter intuitive? Thanks, Nick from Pittsburgh." That's a good question.

Sydnee: Um, I can understand why—a lot of people ask this question. And there are a lot of people who are afraid to treat fevers for this reason. What I would say is, first of all, there is no reason to think that—your body is not heating up to an extent that, like, it's eliminating germs through heat killing them. Does that make sense?

Justin: It feels like boiling the water, you know what I mean? A boil water advisory, like, to kill off the germs.

Sydnee: No. That's—I mean, it's part of a whole inflammatory cytokine pathway that does lots of things. It's doing lots of things in your body to fight off the infection. It is not just heating you up to kill off the germs. If we heated you up enough to kill off the germs, we would kill off other... things.

Justin: Oh, yeah. That makes sense. We have a lot of stuff in us we need.

Sydnee: Yeah, exactly. So it is—

Justin: We're mainly microbes. We're basically bacteria.

Sydnee: [laughs quietly] We're at least equally microbes.

Justin: Fair enough.

Sydnee: But I would say that on the flip side of that—so it's okay to treat a fever. It's fine. You're not harming your immune response. On the flip side, we do tend to over treat fevers, I think. I think we have sort of this fear, especially in kids—if a kid gets a fever—and I've been that parent—it's scary. And it can make you feel like you need to hurry, hurry, hurry, and do

something. So I do think there's a tendency—I'll hear a lot of pl say like, "Well, you gotta alternate the ibuprofen and the Tylenol, and you keep that fever down, keep that fever down."

No. I mean, it is not generally necessary to eliminate all fevers. There is of course an extent to which when it gets high enough, we are concerned, and we do want to treat that fever. Or maybe they need to go in and be seen, if you're that concerned. So I think that there's a point here where you're like, yes, every time someone has a temperature of 100 we don't need to throw medicine at them. But it is fine to treat a fever.

Justin: Okay. Easy.

Sydnee: Take the recommended dosing that's on the bottle, and according to your health conditions, and all those other things of course too. I feel like I should—is that—is that understood?

Justin: Yeah.

Sydnee: Don't just take medicine willy nilly. [laughs]

Justin: Uh, "Why do we need sunlight to get Vitamin D? I feel like most minerals and vitamins you get from food 'cause you're actually eating the vitamin, but that sunlight is just photons, not like there are some vitamin D molecules in there." That's from Lorelei.

Sydnee: Uh, Justin, do you know about Vitamin D, why we have to get sun?

Justin: I do, but I'd like to test you.

Sydnee: Oh.

Justin: To see if you know.

Sydnee: Do you know?

Justin: Yeah, I don't want to spoil it for you.

Sydnee: Um, we need—so, okay. You can get Vitamin D from food, of course, or from supplements or whatever.

Justin: Milk, right? Milk's high in Vitamin D?

Sydnee: Yeah, milk. Milk has Vitamin D, for sure. Um, but you also—your body will make Vitamin D from cholesterol in your skin cells. So there's cholesterol on the skin cells, UVB rays from the sun hit that cholesterol, and change it to turn it into Vitamin D.

Justin: Really?

Sydnee: Yes.

Justin: [snorts] That's weird!

Sydnee: Yep.

Justin: How did we figure that one out?

Sydnee: Yeah. And, I mean, there's a whole chemical pathway that it goes down where it starts as a form of cholesterol and ends up as Vitamin D.

Justin: I don't care what—

Sydnee: But that is why we say you need sunlight. You're not absorbing Vitamin D directly from the sun. You're absorbing UVB rays, which cause a reaction in your body that turns cholesterol into Vitamin D.

Justin: I don't care if you're a religious person, an a-religious person, a hardcore anything. No matter whether you believe, you know—whatever you believe. Can we all just collectively as a people take a moment to appreciate, whatever force brought us to this point, that one day this force was like, "I don't know. They keep dying. Just right away." And then they were like, "I got—hey, listen. I know I don't speak up in these meetings a lot. I got a wild idea. What if the sunlight turns cholesterol to Vitamin D?"

Everyone's like, "[through laughter] That is wild! Let's try that. That's a wild thing to happen. Should we do it with other vitamins?"

"Nope! Just this when thing where the sunlight turns cholesterol in the skin to Vitamin D."

What a wild play that was. What a swing.

Sydnee: You know what is wilder, Justin, is that the way this—as a scientist—the way this happened was incredibly slowly, over the course—

Justin: Oh, you're gonna make this more boring than mine, aren't you?

Sydnee: —of thousands of years—

Justin: Yeah.

Sydnee: —where creatures that had this ability to utilize the sun's rays to convert cholesterol into Vitamin D in their own bodies had an evolutionary survival advantage over those who didn't. Probably because we need Vitamin D for healthy bones.

Justin: Yeah, but do yours—do yours as a skit. It's nothing. I mean, that's not a skit. Mine's a skit!

Sydnee: I know, but it—

Justin: Yours isn't a skit!

Sydnee: I think that's—if you cannot see the—like, it's just beyond comprehension that over time—

Justin: It is, it is.

Sydnee: I mean, it is. I mean, I understand. It is comprehend—I guess it is—we can. I just explained it. But, like, it is incredible to think about, but that is how we evolved.

Justin: [simultaneously] Belief system or no belief system, you cannot fathom. [wheezes] [through laughter] What brought you to this point. It is unfathomable.

Sydnee: It is an incredible process. But that is why creatures that gained this ability through evolutionary changes had a survival advantage over creatures who didn't. That's why the sun has to be involved. And of course there's a lot that comes with that. We've done a lot of shows on sunscreen and sunburns and, you know, the risks of overexposure to the sun. We're well aware of that. Um, but there is a degree to which some sunlight is necessary.

Justin: That's the other fun thing about it. That's the other twist, the spin they put on it. Like, "Well, too much Vitamin D makes 'em super powerful."

Like, "Okay. Well, we'll just... it'll make 'em burn if they get too much sun."

Sydnee: Well, actually, there—

Justin: [crosstalk] Super powerful.

Sydnee: Now, Vitamin D, unlike Vitamin B, is something you can get too much of.

Justin: [mumbling] Okay. Sydnee.

Sydnee: So don't just take—

Justin: [quietly] That's not a good skit. [crosstalk]

Sydnee: Don't just go out there swallowing Vitamin D nonstop. That accumulates. That's a fat-soluble one.

Justin: I'm, sorry. Big [crosstalk]—

Sydnee: D, E, A, and K. Those are the ones that you can just keep accumulating in your body.

Justin: I—listen, folks. We don't have enough time to answer this last question. Big Podcast says that we gotta clear out the studio. But I'm gonna—you know what? Forget about it. Forget the man. I'm just gonna do it anyway.

Sydnee: Okay!

Justin: "Hello, Sydnee and Justin. Why are some babies born jaundiced? I was talking to my mom the other day and she mentioned I was born jaundiced. I was kind of shocked it had never come up before, but she was like, 'Don't even worry. It just happens to newborns sometimes. No big deal.' But typically jaundice is a pretty big concern, right? Seems like it'd be extra scary for a totally fresh new baby."

Sydnee: [laughs quietly]

Justin: That's from KC, with they/them pronouns.

Sydnee: It is—you're right that a lot of times, especially in adults, jaundice is a big deal. Jaundice meaning yellowing of the skin, probably usually as the result of accumulation of Bilirubin which is something in your blood that can be caused from the breakdown of blood cells.

Justin: [crosstalk] sounded like a lounge singer from the 70's.

Sydnee: Billy Rubin?

Justin: "Hey, I'm Billy Rubin. Love to be here in the Catskills. Always a treat."

Sydnee: And if you're having—especially as a sign of liver dysfunction. This is when we worry. When we see jaundice, we generally are worried about your liver.

Justin: Billy Rubin would be jaundiced. Don't you feel like Billy Rubin [crosstalk].

Sydnee: Billy Rubin would be. Yeah, he would be jaundiced. In babies, the reason we say it can be no big deal is that early, early in a newborns life, their liver may not be functioning at 100% quite yet. It's still, like, ramping up. And they have a lot of red blood cells, too, that are being broken down. That combination can lead to neonatal jaundice. Um, so it is incredibly common that I newborn might have jaundice. It's estimated six out of every ten babies who have jaundice.

Justin: Ahh, so it's weird if you don't have jaundice.

Sydnee: If you're born prematurely, eight out of every ten.

Justin: Alright.

Sydnee: Um, only about one in 20 have levels high enough that they might need some sort of treatment, and the initial treatment for newborn jaundice, if you need it—which is why, by the way, the monitor a newborn at first. Um, both with this thing called a Bili meter, which is just like an external meter that can give them an estimate of how high the Bilirubin might be, and then they can actually draw blood and check Bilirubin levels if they're worried, if you're looking kinda yellow. But the treatment, if they do find that it's too high—which is again, why the monitor, so it's okay, they're watching for it—is, um, UV lights.

Justin: Huh, cool.

Sydnee: Because again, the UV light can help break down the Bilirubin. Isn't that cool?

Justin: [crosstalk] so cool.

Sydnee: So if you've ever walked by a newborn nursery and you see a baby laying in a little baby tanning bed—and they put, like, little baby—like these little soft—

Justin: So cute.

Sydnee: —they're not goggles 'cause it's like a soft thing that they just sort of put over their eyes to protect their eyes, and they just lay their in these little baby tanning beds. But if you ever see that, that's what they're doing. They have blankets that also release this—that also have this UV light, so you could even take 'em home with a Bili blanket.

Justin: Wild for the baby, man. Like, "So this is life, huh? This is what... okay! Alright! Sure, I guess."

Sydnee: But if you ever hear of the Bili lights or the Bili blanket, that's what they're talking about. It's just to reduce that. And then your liver starts functioning up to snuff, and then you're fine and you don't need to continue that. But that is why generally speaking it is no big deal. There are cases where newborn jaundice could be indicative of some other underlying problem, which is why we watch it closely, which is why we check levels, which is why we treat it, which is why we monitor. Most of the time it is no big deal.

Justin: Thank you so much for joining us for this episode. A couple of quick plugs. First off, The Adventure Zone is a graphic novel series that my brothers and dad and I wrote. The fifth book just came out last Tuesday. It's called The Adventure Zone: The Eleventh Hour. If you haven't read the series, I'm really proud of it and I think it's really good. So if you would go buy that book and read it, that'd be really nice.

Also, March 17th, nine PM Eastern Standard, we are going to have a My Brother, My Brother, and Me live and virtual show celebrating the kickoff of our 20-Sun and Sea year of touring. We're gonna have a very cool, young podcast called Sawbones opening for that show. Maybe you've heard of it. Tickets are $10. It's March 17th, nine PM. The video will be on demand for two weeks after the event. You'll be able to watch it, or you can pick it up for two weeks after the event. Go to bit.ly/mbmbamvirtual, and come watch. It's gonna be great. I'm certain of it. Right, Syd?

Sydnee: Absolutely.

Justin: And we'll be there, you and me.

Sydnee: Yeah.

Justin: Assuming our children go to sleep.

Sydnee: [laughs quietly] I'm hopeful.

Justin: Thanks to The Taxpayers for the use of their song "Medicines" as the intro and outro of our program. And thanks to you for listening. We appreciate you very much. That's gonna do it for us. Until next time, my name's Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

[theme music plays]

[chord]

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