Sawbones 242: Asbestos

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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: Gettin' topical today, Syd.

Sydnee: Yes. Yeah, we're breakin' the chain, though.

Justin: You know me, I'm all—aw, that is sad. So we'll—let's take a moment… what a great chain.

Sydnee: It was only three.

Justin: Three-chain, memorialized… moment of silence… [quietly] one, two three… okay, good.

Sydnee: You know, you already did a moment of silence for that, and I was gonna do a moment of silence for the fact that today is the day in history that Pliny the Elder perished while trying to rescue people from Mt. Vesuvius.

Justin: But not when people hear this.

Sydnee: Oh, that's true.

Justin: It'll be well after.

Sydnee: Well, then never mind.

Justin: What, uh—so we're getting—

Sydnee: Remember that you forgot. [laughs quietly]

Justin: Remember that I forgot. So we're, um—we're getting a little timely today, Syd. What're we talkin' about?

Sydnee: Well, I wanted to talk a little bit about asbestos, and the illnesses that can be caused by asbestos. 'Cause there's been a lot of talk in the media, and we've gotten a lot of emails and tweets and questions regarding the changes in the way that the EPA is going to regulate asbestos moving forward.

And, um, they're—it sounded pretty outrageous when I first started reading about it, and usually when I hear that I think, "Well, I'm—this is probably not as outrageous as it sounds. I'm not understanding something."

And I think it—it almost is as outrageous as it sounds, actually. So I thought it would be helpful for us to kind of look into what asbestos is and what kind of health risks there are from it, and the history of that. How did we figure that out, you know? Why—do you even know, Justin, what Asbestos is?

Justin: Well… [pauses] it's, uh—

Sydnee: I didn't, so don't feel bad if you—I had no i—I mean, I knew—

Justin: It's, like, fireproof dust.

Sydnee: Eh, yeah, that's fairly close.

Justin: Fireproof, like, fibers, I think. Insulation.

Sydnee: Yeah. That's pretty good.

Justin: People use it in insulation.

Sydnee: That's a good guess—I really had no concept—I mean, I learned in medical school, of course, what it can do, and so I knew to ask the question, you know, if I saw certain, like, symptoms of patterns on X-rays or that kind of thing, "Have you ever worked around asbestos?"

But if you broke it down to, like, what actually is this mineral? I was very clueless to that. To that end of it.

Um, asbestos is actually the term for six different silicate minerals. They're just naturally occurring—they're just crystals. Like, you can mine them. Anywhere on Earth, actually.

Justin: Mm-hmm.

Sydnee: Asbestos occurs naturally all over the planet. Every continent has—you can dig down and find asbestos.

Justin: So what're we wasting our time podcasting for? Let's go get rich. Let's go get asbestos.

Sydnee: Well… what?

Justin: Let's go get that asbestos! It's waiting out there for us!

Sydnee: Do you—[laughs quietly]

Justin: It's the asbestos rush of 2018! Let's go!

Sydnee: Do you—mm-mm. You know that, like, I'm gonna get to that it's, like, it does—

Justin: [simultaneously] Bad for you, yes, I'll get a mask!

Sydnee: —bad stuff.

Justin: We've got masks from when you had the flu, it's fine!

Sydnee: Well… okay, but now. Hmm, no. And, I mean, what're you gonna do with it?

Justin: Uhhhh… sell it to the highest bidder, I guess. I don't really—I haven't really thought through it.

Sydnee: No.

Justin: You discovered that I haven't really thought through it.

Sydnee: Let's not mine asbestos.

Justin: Let's not even mine asbestos, Syd.

Sydnee: Let's not do that. Um, nobody's doing it in the US anyway.

Justin: Okay. Well, then [crosstalk]—

Sydnee: There are other places.

Justin: —pioneers, the first—

Sydnee: No, mm-mm, no. We stopped doing that.

Justin: Oh.

Sydnee: But you're getting ahead of us. Um, so these crystals are made of long, thin fibers, and they can break easily into many, many, many little teeny fibrils whenever it's agitated, so when you try to break the rock apart, or break the crystal apart, right?

So mining it, for instance. Chipping away at it would be a great way to… basically turn this into—

Justin: Particulate that's flying through the air.

Sydnee: Yeah, particulate dust that's flying through the air that you're breathing in. Or, um, building with it, cutting it.

Justin: Yeah. Pretty much inter—interacting with it in a destructive way.

Sydnee: Any—in any way.

Justin: Yeah.

Sydnee: Um, there are various types, and we usually identify them by color. There's blue asbestos, white asbestos, brown and green. And it exists—like I said,

it exists on every continent and it has been mined since ancient times. We have known about it for a very long time.

Uh, way back in 4000 BCE, asbestos was used for wicks in candles and lamps. Asbestos fibers.

Justin: Wait, I thought it was fireproof. Or is it just fire resistant?

Sydnee: It's extremely fire resistant.

Justin: So it can kind of, like… yeah.

Sydnee: So it's great for a wick, right?

Justin: It's great for a wick.

Sydnee: Right. Um, they actually used to make burial shrouds out of asbestos. For, um, two reasons.

One, they preserved the body pretty well. They're pretty—they're pretty everything-proof. Like the—because it's such a thin crystal fibrous thing, you can, like, weave it into cloth and things.

Justin: Huh!

Sydnee: Or, like, mats, and that kind of thing. It's a very flexible, adaptable material.

Um, so you would put it over the body of, like, an ancient pharaoh. Um, it used to be, uh, like, part of clay pots. You would make it into—into clay pots, in order to make them more resistant to heat, so you could heat things in them because of the asbestos fibers in them.

Um, you could also put them over bodies on funeral pyres, the idea being that because they were so heat resistant, at the end you would have separate ashes of the deceased, and then the fire itself, so that if you wanted to save the ashes of your deceased love one—

Justin: Oh!

Sydnee: —much like we do today.

Justin: Sure.

Sydnee: That's separate from everything else. And the asbestos cloth allowed you to do so.

Uh, supposedly Charlemagne had a tablecloth made out of asbestos.

Justin: Oh! Great.

Sydnee: And you can hear, like, stories of great rulers who would, like, have their cloth made of asbestos that they would clean by throwing into the fire and then removing it.

Justin: That sounds—okay. Listen. We've been—

Sydnee: Which sounds pretty cool.

Justin: That sounds awesome. [wheezes] That sounds so easy!

Sydnee: Um, the name "asbestos—"

Justin: I want a—you know what would be amazing?

Sydnee: What?

Justin: Kid's clothes made out of asbestos. Because that—

Sydnee: [laughs quietly]

Justin: —they are so messy all the time. Imagine the convenience. I'm gonna look into this. Imagine the convenience of being able to throw all your kid's clothes into a fire.

Sydnee: Well, there's some obvious problems with that. But I will say that a lot of baby clothes, especially, um, sleepwear, comes with a tag that tells you how flammable it is.

Justin: Yes.

Sydnee: So it would solve *that* problem.

Justin: At least it solves that problem. It may create others, though.

Sydnee: Yes, as we will get to. Uh, the name "asbestos" probably comes from our old pal, in memoriam, Pliny the Elder.

Justin: Aww, my dude!

Sydnee: Yes! Who—he used the term "asbestinon" in his—

Justin: [Optimus Prime voice] Asbestinon!

Sydnee: —natural history. Um—

Justin: [Optimus Prime voice] Targeting systems active! Asbestinon, destroy!

Sydnee: It actually means "unquenchable" or inextinguishable," so it's in reference to the fact that it was very heat resistant, fire resistant. And he talks about how heat resistant it is, and also that it was really good to, like, wrap it around a tree before you cut it down.

Justin: Because…

Sydnee: It was very quiet. It would dampen the sound. It's also very soundproof. It's great for soundproofing.

Justin: This is a great building material!

Sydnee: He also thought it was a vegetable.

Justin: Aww, Pliny! [wheeze-laughs] Aww, Pliny! You did so good! Except for that one! The one thing you beefed!

Sydnee: There aren't a lot of documented—

Justin: Maybe it is a vegetable, though. It's hard to say.

Sydnee: [laughs quietly] Like most toxic substances, somebody usually tries this kind of thing for medicine at some point. There aren't a ton of documented

medical uses—well, I mean, there are none real—there are no real ones. But usually I list some fake ones. "People tried to use this for A, B, C."

There was some, um, scattered use of it for skin conditions sometimes. Like, to put on skin lesions. Um, especially stuff that itches to try to calm the itch. That probably doesn't work.

Justin: No.

Sydnee: Um, but largely, asbestos from its, you know, discovery was used mainly for things like clothes or paper, jackets, helmets, money. There was some money. Purses. You could, um, maybe wrap flaming pitch and tar in asbestos and then catapult it over a wall at your enemy. You know, those kinds of things.

Justin: You see this sometimes, though. If something's already very useful in other contexts, a lot of times people don't… uh, don't try to find other medicinal uses for it.

Sydnee: [laughs]

Justin: It's like—it's almost—you see this assumption that, like—I think it's part of why, like, you see feces used so often. It's like, "Everything should be pulling its weight. Like, what are you doing? [laughs] Like, asbestos, you're good. You're very useful. Um, cow turds, like, what's goin' on? What do you got?

Sydnee: [laughs]

Justin: "You must do something! What are you here for?"

Sydnee: So asbestos was known to be useful for a very long time, but the mining of asbestos really picked up in the 19th century, uh, with the Industrial Revolution. I mean, that was—as the Industrial Revolution occurred, that's where you really see, um… asbestos being used widespread, and mined widespread. Because it was great for building applications. It was very good insulation. It was very heat resistant, like I said. It was soundproof. You could mix it with a lot of different stuff. You could weave it into fibers. You could, um, mix it into cement. That was done a lot to be used during construction.

It was great insulator for steam engines and turbines and boilers and ovens and electrical generators. It was used in shipbuilding. Obviously it was used in all kinds of building building, you know. Because—we know that because it is so

often, now removed very delicately from buildings that it has been used in in the past.

Um, but there were just so many different applications for it! It was a very adaptable material. It was good for the things that we were using it for. You know, I mean, it did the stuff that we needed it to do. And, uh, the industry grew until over 30,000 tons were being produced annual by 1900.

Um, and because of that, if you start to think about asbestos was being used all throughout the world in these different applications, people were being exposed to it that way, but because the demand for it was so high, the first thing that changed was how many people were being exposed to it in the processing.

So you have the people who are mining the asbestos, who are all obviously being exposed directly to asbestos as they're chipping it out of the Earth, right?

Justin: Right.

Sydnee: And then you have all of the people who are involved in the processing of asbestos. It could actually be, like, carded, kind of like you think of, like, wool. Like, woven, and, you know, put on a card.

Justin: Yeah.

Sydnee: Um, and you could employ—not just—usually men were used in the mines but you couldn't—you didn't just need men for this. You could use women and children. So you start to see women and children exposed to asbestos, because they're being used in the factories to collect the asbestos and process it and card it and weave it into, you know, whatever. And then sell it. Ship it out for whatever you're gonna use it for.

So a lot of people are now involved in the asbestos industry at this point. A lot of people are being exposed to raw asbestos, constantly.

Justin: Now, are we seeing a—is it sort of like we're—you saw the advent of… black lung, where it took, like, a long time before people started accepting, like, "Oh, this is having an effect."

Or is it like a one-to-one, uh, like—is everybody getting sick?

Sydnee: Everybody isn't getting sick, but a lot of people *do* start getting sick. But it—it's exactly like you said. It takes a while it's—I think, um, occupational illnesses like this, comparing it to coal workers' pneumoconiosis or black lung—it's a good comparison because it seems like in retrospect—you look back and obviously inhaling coal dust seems like a bad idea.

Justin: Right.

Sydnee: It seems like it should be bad for your lungs, and of course it is. Inhaling asbestos fibers—when you look at it from the surface you go, "Well, obviously that's gonna damage your lungs. It makes so much sense."

But it took a while. Um, one, for everybody to realize that's what was happening, and two, for industry leaders to… acknowledge it.

Justin: Mm-hmm. Wink.

Sydnee: And for—yes. [laughs quietly] And for governments to regulate that. Because, as I've already mentioned, it was a really great product for so many things! If you were making asbestos, if you were selling asbestos, you really didn't want it to be dangerous.

Justin: Right.

Sydnee: Um, especially as dangerous as it ends up being. So, um, in 1858, Henry Ward Johns founded the H.W. Johns Manufacturing Company in lower Manhattan when he was 21. Um, and he—because of him, when we talk about, like, the US story of asbestos, he greatly expanded the uses of asbestos.

That was a lot of the, um, more, like… in different building applications, a lot of the ways that asbestos started being used in the US after that was because of this industry, because of this guy and his company. He actually merged with the Manville Covering Company to form the largest manufacturer of asbestos in the US. Uh, and he would later die of what was diagnosed as "dust phthisus pneumonitis."

Justin: Hmm.

Sydnee: At age 61. So he probably was one of—and we'll get into some of the earliest cases of, um, pulmonary asbestosis, so, you know, the destruction of the lungs that occurs because of asbestos—he was probably one of the earliest cases

of that, and he was one of the founders of one of the largest asbestos companies in US history.

Um, as early as 1897, we started to see that maybe this was dangerous.

Justin: Okay.

Sydnee: Right? Like, kind of like you said. We—

Justin: As early as when?

Sydnee: 1897.

Justin: Okay!

Sydnee: So, before we reached this big boom, we were already starting to suspect that maybe the mining of asbestos could cause some problems for the people who were mining it.

Uh, there was an Austrian doctor who was examining one of his patients who worked in the asbestos mines and said, "You know what? I really think all these lung problems he's having might be due to the asbestos dust."

Um, and there was an 1898 report that regarded the asbestos manufacturing process in England, where factories had been routinely inspected since 1833 and said, basically, "There is widespread lung damage because of—this is—the asbestos mill. Because of the dust. We don't know exactly what's happening, but we know—but we really feel that all these people working in this asbestos factory have lung damage, and this is why."

Justin: Okay.

Sydnee: Um, so we have some reports that are saying, like, "Yeah, we think this is bad." Of course, this isn't slowing anything, at this point.

Justin: No, no, no, no, no.

Sydnee: Um, asbestos was listed as a harmful substance by Adelaide Anderson, the inspector of factories in the UK in 1902. She was one of, like, the first females to hold a position like that.

Justin: Cool!

Sydnee: I think that's cool. And she was one of the first to, like, say, "You know what? Asbestos is probably dangerous."

Again, it didn't change anything yet. And in 1906, we have the first documented death of an asbestos worker from pulmonary failure. Um, by Dr. Montague Murray at London's Charing Cross Hospital.

Um, and the—there was a 33-year-old, and the autopsy showed all of these, uh, large asbestos fibers in his lungs. And the thought was, "You know what? Maybe this fibrosis that's occurring… maybe this is related to the asbestos."

Um, and this was in the—this was in the UK and that started to be understood there. But, other places in the world—the US, for instance—was not ready to accept that or acknowledge that.

Justin: So—it was so hard to protect workers from stuff like that back then. The gears turned so slowly, it seems like.

Sydnee: Mm-hmm. No, it's—

Justin: Without the proper protections in place.

Sydnee: And you—you're also looking at a time when it took a long time for information to spread.

Justin: Oh, sure, yeah.

Sydnee: So if we're talking about isolated case reports, and you have a lot of people with a lot of money who have a vested interest in keeping that quiet, it can be very hard to get that research out. It's very easy for me to go back in history and kind of see the case building—

Justin: Right.

Sydnee: —but at that time, these would've been isolated blips all over the world, where doctors were finding this and the pathologists were looking at the fibers in the lungs and saying, "I think something's going on."

But not everybody was communicating yet.

Justin: Not on—it's not on Buzzfeed. [laughs quietly]

Sydnee: Exactly. Exactly. The high pro—

Justin: 'Cause they didn't have internet.

Sydnee: —what—what really—[laughs quietly] well, yes. Yes, honey. That's—there you go.

Justin: It's different.

Sydnee: You got it.

Justin: Than it was.

Sydnee: The really high profile case that probably changed a lot of stuff in the UK was Nellie Kershaw. This was a young woman who started working in asbestos, like, manufacturing companies and factories when she was 12. Uh, she was employed by Turner Brothers Asbestos, and at age 29 she started showing symptoms of pulmonary fibrosis, which is odd in a 29-year-old woman.

Uh, by 31 she was so debilitated she couldn't work, so she went on leave. She tried to file for worker's comp, and the company basically said, "No. This has nothing to do with asbestos. And, uh, we are never going to acknowledge anything otherwise, and you'll never get a penny, because as soon as we acknowledge that, we probably owe a lot of people money."

Justin: Yeah!

Sydnee: "So… no way."

She fought, never got any worker's comp, died at age 33 of… what we now know is pulmonary asbestosis. Um, and even after that, uh, there was still—the company still said "No." They actually employed somebody to do an autopsy and say, "Oh, no, it was just, uh, tuberculosis."

A second autopsy by a different doctor, Dr. William Edmund Cooke, later looked at her lungs again and said, "No, she did have tuberculosis and there was scarring, but that had resolved. What caused her death were these big pieces of asbestos that I found in her lungs."

Justin: Mm-hmm.

Sydnee: "That definitely caused the fibrosis and resulting in her dying."

Um, and he published this in the British Medical Journal, which is what lead to parliamentary action to start to list asbestos as a dangerous subject, or a substance, and regulate it. And that was really the beginning of the end of asbestos across the Atlantic, um, was this case. This was a big, high profile case.

Justin: In England.

Sydnee: In England.

Justin: [laughs]

Sydnee: In England. Um, you know, she has a, uh—a monument to her memory, to her as well as every other worker who probably died of asbestos exposure without it being recognized. It was finally erected in 2006.

Justin: Well, that's somethin'.

Sydnee: Yeah. Um, and alongside this—before we get to what happened in the US, alongside this was this new concept, this new disease that was starting to be recognized at this time in history called mesothelioma. Now, doctors had been debating for a while whether it was possible for cancer to arise from the mesothelium, which is this lining around our lungs and our abdomen and our heart. It's just this specific kind of cellular lining, right? Specific kind of cell.

Justin: Okay.

Sydnee: Um, and they had found tumors there, rarely, before. It was kind of a—a rare cancer to find. Um, largely on autopsy. But it was always assumed that it had metastasized from somewhere else. This was a cancer that came from somewhere else that just ended up in this lining, but it didn't start there.

Justin: Okay.

Sydnee: It was not the primary cancer. Um, it was very rare. It was very aggressive. There were some case reports, but not enough for anybody to piece

together exactly what this was or why it was happening, or was it its own entity or just, you know, a progression of another kind of cancer?

It was finally proposed in 1935 by London pathologist Steven Gloyne that maybe the asbestos is connected somehow, and this is a distinct entity. This is a cancer unto itself, not just a progression of another cancer. But it really wasn't accepted until 1960.

There were two guys, Wagner and Sleggs, who were observing these South African—

Justin: Those are good names, by the way. I just—

Sydnee: [laughs]

Justin: —I don't wanna pass that by without saying that Wagner and Sleggs was good.

Sydnee: Uh, they were observing these South African mine workers, and they started to notice how many of them who worked in these asbestos mines had these plaques, this big, cancerous plaques forming on the linings of their lungs. And they started to study them, and unfortunately a lot of this was autopsies, because people were dying of this.

And they published their findings in the British Medical Journal in 1960 and said, "Look, almost all these people got mesothelioma! This is a cancer, and it's asbestos, and that's the problem."

Justin: It's not a coincidence.

Sydnee: No, it's not a coincidence. And this was supported by a researcher in the US, Dr. Irving Selikoff in 1964 who started following all of these different, um, Union Asbestos and Rubber Company workers in New Jersey. Over a thousand workers, and found that the mortality rate among these employees was 25% higher than you would expect, than statistics would suggest. And that they died largely from asbestosis, asbestos-related lung cancer, other types of lung, stomach, colon cancer—basically, asbestos is killing people. It's destroying their lungs and it's definitely causing cancer.

Um, this is 1964 is when we figure all of this out, uh, that mesothelioma's its own thing, and asbestos… is the problem.

Justin: It seems like there was a time—I mean, it seems like there was a time period, maybe, where we were kind of turning a bit of a blind eye! [wheezes] To this, perhaps!

Sydnee: So what you would expect is after I read these sentences for me to say, "And asbestos was banned, and we've never used it again."

Justin: Short episode, but a great one. Thank you, Sydnee, and thank you for listening. Uh, that's gonna do it for us for this week. Um, I wanna thank—

Sydnee: No. We—so you're probably wondering why I'm still talking about asbestos right now.

Justin: Yep.

Sydnee: Well, I'm gonna tell you, but let's head to the billing department first.

Justin: Let's go!

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[theme music plays]

Justin: Our first sponsor this week is Squarespace. You wanna start a new business? You wanna make it stand out? Then you wanna get started with Squarespace. It's a place to showcase your work. You can blog or publish content or sell products and services of all kinds, and Squarespace is gonna make it really easy for you to make a beautiful, customizable website from these lovely templates that are created by world-class designers.

They used to have a bunch that were created by *real—real* jags. Like, really useless doofuses.

Sydnee: [laughs quietly]

Justin: And they were like, "These are all terrible! They're all green, they all have GIFs of guys in construction hats working on the website. Uh, there are counters, prominent counters, three to four counters on each of these templates."

Sydnee: None of this is true, by the way.

Justin: Cleared them out. Let's get some world-class designers in there! So that's what you got at Squarespace. And, uh, they've also got 24/7 award-winning customer support, so if one of those terrible templates is still in the system somewhere and you ferret it out, you can call 'em anytime you want.

So, uh, head to squarespace.com right now—sorry, squarespace.com/sawbones! Don't go to squarespace.com without the /sawbones. You'd be wasting your time. You can get a free trial. When you're ready to launch, use the offer code "sawbones" to save 10% off your first purchase of a website or a domain.

Squarespace: they didn't give me a tagline.

Sydnee: [laughs]

Justin: [through laughter] So that's not a good one…

Sydnee: No.

Justin: That I came up with kind of off the top of my head. Uh, you know what I'm—I'm excited 'cause we're about to leave for vacation and tour, but you know what I'm sad about, Syd?

Sydnee: What are you gonna miss, Justin?

Justin: I'm gonna miss our kids, and our fish! And not really. I'm gonna miss our Boll and Branch… sheets.

Sydnee: Sheets.

Justin: Uh, we have been sleeping so well since we made the switch to Boll and Branch. You may've read about 'em in Forbes, Wall Street Journal, Fast Company—they're all talkin' about Boll and Branch. From bedding to blankets, these are 100% organic cotton that starts out soft and gets even softer!

Believe it or not. Shipping is free, and you can try 'em for 30 nights. If you don't love 'em, send 'em back and get a refund. To get you started right now, our listeners get $50 off your first set of sheets at bollandbranch.com, promo code "sawbones." Go to bollandbranch.com today for $50 off your first set of sheets.

That's Boll, B-O-L-L, and Branch.com, promo code "sawbones." Bollandbranch.com, promo code "sawbones."

Lastly, Syd, uh, Stitch Fix. Can you tell me about it real quick?

Sydnee: So, I love Stitch Fix.

Justin: Oh yeah.

Sydnee: Um, and that's because I'm not really great, necessarily, at picking out clothes for myself. But I do know what I like when I see it. And Stitch Fix has got your back if you're like me, because you just answer some questions about your sizes, your favorite styles, what your budget is, and a personal stylist will select five brand new clothing items just for you. They'll ship them to you. You can try 'em on, and only pay for what you keep.

Now, if you're like me, you're gonna end up keeping everything almost every time, 'cause my stylist has really got a sense for what I like now, and I love the clothes I get there. It's really—it's revolutionized buying new clothes for me. I was always somebody who kind of hated shopping, 'cause I wasn't good at just searching through racks, and this has fixed that problem for me. Um, if you don't like something, if you need another size, you send 'em back. Shipping is free both ways, and, uh, if you hurry to stitchfix.com/sawbones right now, get started, you can keep all five items you receive, and you'll get 25% off your entire purchase. Stitchfix.com/sawbones.

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Justin: Uh, so, Sydnee, you were about to say that the story of asbestos continued, against all odds. Inspirationally! [laughs]

Sydnee: [laughs quietly] That's right. So, uh, all this that's happening across the pond is not stopping anything in the US at this point in history. Um, I always think of—I read *The Lorax* to the girls recently, and I thought we were biggering and biggering our asbestos use.

Justin: [laughs]

Sydnee: Just biggering and biggering. Um, we were a country on the grow, and we were using 60% of the world's production of asbestos in 1942, so that was only growing. We had, um—we used—you know, in World War II thousands of

tones of asbestos was used for ships, to insulate piping and boilers and steam engines and things like that. Um, and for every thousand workers in the shipyards, about 14 died of mesothelioma, and who knows how many had asbestosis from that.

Um, the—the peak of our use came in 1977. That was when you really—and this is long after we have all these documented cases and regulation that was happening—

Justin: We know 'it' bad. We know it's bad.

Sydnee: And you can look all over—I—I used the UK as an example 'cause there were a lot of high profile cases there. Um, but there were other countries that were already—like, Canada was already figuring this out, and Australia was already figuring this out. There were a lot of other places that were already regulating the use of asbestos a lot more tightly than we were. Um—

Justin: And we knew we shouldn't.

Sydnee: Right.

Justin: We just looked at it and were like, "You know what? It's been a stressful week. Let's be bad. Let's just… use asbestos one time. Let's just keep using asbestos."

Sydnee: And this is not—this is not conjecture. I am not saying this from, like, a political standpoint. We documented—there was a lot of, uh, litigation about this. And, uh, there are court records that prove the asbestos industry knew what it was doing. They knew people were dying. They knew asbestos was causing asbestosis and lung cancer and mesothelioma long before it was released and revealed and regulated, um, the way that it was. So there was—this was a conspiracy, and it was covered up, and a lot of people were harmed because of it.

And there's not—this is not me saying that. There's documented evidence. It was one of the largest class action lawsuits in American history.

Justin: Mm-hmm.

Sydnee: Um, and you still see the ads today, right? On TV? Like, this is not—this is not news. I mean, you still see the mesothelioma—

Justin: If you—if you know the term mesothelioma, it's almost certainly because you were watching Judge Judy. [laughs]

Sydnee: I always remember that commercial—do you remember the one where the woman says, "My husband worked in a factory where the asbestos fell like snow."

Justin: Yes, I do remember that, actually. Yeah. Used to see that one all the time.

Sydnee: I think they also used to used asbestos for fake snow in Hollywood.

Justin: I've heard that, yes. I've heard that.

Sydnee: Anyway, um, so after awareness of asbestos-related lung disease spreading among the public, and especially among unions, um—a lot of unions started to, you know, demand action to protect their workers and their members, because the big companies were not. I mean they—you know they had a lot of money invested in using it.

Um, and at that moment, we didn't have other things to use to replace it. Now—of course now we do, but at that moment we didn't have better substances than that.

Um, the US started to pass legislation to limit the use of asbestos in the 70's, but not banning it. They started limiting it and regulating how we use it. Um, we, uh—and again, I just wanna reinforce: we knew it was dangerous since the 30's. It was linked to mesothelioma in the 40's. It was definitely dangerous in the 60's. The 70's, we start to regulate it. We don't close our last asbestos mine in the US until 2002.

Justin: [holding back laughter] It must be *so* good. Like, asbestos—I—I'm almost sorry I missed the heyday! Asbestos must've been awesome. Like, that must've been—asbestos must've been the best.

Sydnee: Well, it's not.

Justin: What?

Sydnee: I mean, it's bad! It's bad for humans!

Justin: But it must've been so great though. [through laughter] 'Cause it took us literally a half century to stop—to quit it. To finally give it up. Although it can be difficult to quit things, even if you know that they're toxic. That's—the human brain is not necessarily wired to avoid things that it knows is dangerous.

Sydnee: And I think—I mean—

Justin: And I think if you blow that out to a societal level, then it becomes even more challenging.

Sydnee: Well, and it took us a long time to stop using it, despite the fact that we knew it was definitely linked to lung disease and cancer, and I think with that statement you could see a very clear parallel that you could draw. [laughs quietly]

Justin: Well… yeah—

Sydnee: With perhaps another giant industry that—[through laughter] that is still just fine.

Justin: Yeah. You could also make the argument that, like… "I don't know, should we stop using this? I don't know. It's already in *everything.* [snorts] Like, we already used it to build pretty much everything in America, so I don't know that we're gonna do much good. Like, you can only get so wet. Like, we should just keep rollin' with it. I don't know. I don't know, it's in everything already."

Sydnee: Well, but it's really the—I mean, the agitation of the fibers is the really big risk, so the thought that it's in this insulation in this building isn't necessarily dangerous, but it can be! I mean, stuff degrades over time. Stuff gets damaged, so the risk is there, but the high risk is when it is actively being…

Justin: Right.

Sydnee: So, like, removing asbestos from a building is much higher risk than it just being there. at that moment.

Justin: Right.

Sydnee: Although, is it greater in the long run to get it out and dispose of it safely? Yeah, probably. I mean, um, it's just expensive, and time consuming. Uh, there is no safe form of asbestos. I say that because that's being called into question now. There is no safe form. There are ones that not, um, regulated to

the same extent, but they're all recognized as being carcinogenic. Every form of asbestos. Period. That's it.

Um, and there's no way to make it safe through mixing it with other substances. There was an argument for a while that you could put it in cement, and that even after, like—even when the cement was, like, chipped away at later or, like, began to break down or whatever, it would be safe. Like, it somehow made the—

Justin: It stayed bonded to it or something.

Sydnee: Yeah. And no, it's not true. Once you—once you start to break that cement apart, the little fibers that are released are identical to to original fibers that you find in nature, so that's not safe. Um, there was a big, high profile case related to asbestos and talc you may have heard of, 'cause this just happened on July 12th of this year—

Justin: Wow.

Sydnee: —that a Missouri jury ordered Johnson and Johnson to pay 4.69 *billion* to 22 women who alleged that, um, that talc-based products from the company were infested with asbestos and gave them ovarian cancer.

Justin: Oh, jeez.

Sydnee: Um, and talc naturally, like, where you mine talc—it's at a same—it can easily be, um… what am I trying to say? Like, contaminated by asbestos, 'cause they're close underground. Like, seams of one are close to seams of the other. Does that make sense?

Justin: Yeah.

Sydnee: Um, there was actually—for a while we were worried that, uh, crayons were contaminated with asbestos, because crayons can contain talc. Um, now they never proved any danger to children, but in response to that, US crayon companies all removed the talc from their crayons, to be on the safe side.

Justin: Okay. That's somethin'. At least the crayon industry is responsible.

Sydnee: [laughs] Uh, so… we know—we have established: asbestos exposure can cause fibrosis of the lungs, mesothelioma. It can cause lung cancer. It's worse with some types of asbestos, certainly, than others, but all are dangerous. Longer

exposures tend to be worse, like people who were mining it and working in the factories.

Smoking with asbestos exposure is way more dangerous than asbestos exposure alone.

Justin: Okay.

Sydnee: Um, but it's all dangerous. It's dangerous. And the treatments at this point aren't great. Treatment for pulmonary asbestosis is mainly supportive. We do things to improve symptoms. Um, supportive care for—you can—if you have enough lung damage, it can result in heart damage over time. Whatever the lung damage is from.

Um, it's very similar to—you drew the—again, black lung, coal workers' pneumoconiosis. Very similar to that. We do supportive treatments to try to prolong life, but it's a progressive disease.

Justin: Mm-hmm.

Sydnee: Um, and there's no cure, so to speak, for it, other than new lungs.

Justin: Right.

Sydnee: Uh—

Justin: Does that happen? Can you do lung…

Sydnee: You can do lung transplants.

Justin: Oh, I didn't—hm.

Sydnee: Uh, mesothelioma is a very aggressive cancer. The prognosis is still not great. Um, treatment over decades has kind of evolved. We tried surgery for a while, we tried radiation for a while, we tried chemo. Now we know that combinations of these things work best for most patients. Our surgeries have advanced a great deal what we can do with them.

Um, and usually it's—it's a tricky cancer because it's a little different in every person, so you have to kind of find what combo of these treatments works best for each patient, so it's a very challenging disease to treat.

Um, 125 million people around the world are still regularly exposed to asbestos in the workplace. Um, so there's still a lot of exposure, and it's still very dangerous.

So, with all this in mind, did we… did we recently legalize asbestos? That's the question everybody's—

Justin: Uh, that's what I've been led to believe by the media.

Sydnee: So, not—I mean, we sort of. Not exactly. So, the EPA under President Obama was already involved in this huge overhaul—

Justin: Obama did it, okay.

Sydnee: [laughs]

Justin: That makes sense.

Sydnee: No.

Justin: Alright!

Sydnee: No.

Justin: We got him, folks! We got him.

Sydnee: Uh, President Obama tried to save us from this issue. He—under his administration, the EPA was involved in this huge overhaul of what's called the Toxic Substances Control Act.

So what they were trying to do was streamline the way we regulate toxic substances and chemicals in the workplace in an effort to protect workers better.

Um, it provided a framework that would have allowed us to ban—'cause you know, asbestos is not technically banned.

Justin: It's just, like, we kind of all stopped—[laughs quietly] kind of just got out of the biz.

Sydnee: Yes, and we can't—there are certain uses that it's banned for. But, like, asbestos as a product is not—is not a—it's not a banned substance, as it is in

other countries. There are other places where it is. The US hasn't done that. Um, it's just very rarely used. We use very little.

But, this would have provided a framework to ban any new uses of asbestos. And that's a way of phasing it out of existence. So basically we stop using it completely, and then we start the very long, as you said, arduous process of trying to remove all the old asbestos, right? Because there's asbestos in so many buildings and things that already exist.

So first we stop using it, then we very slowly, over the next—I don't know how many years. Decades? Hundreds? I don't know. Remove all the old asbestos.

However, as we are aware, there are new Sheriffs in town. And under Trump and especially Pruitt, the EPA has taken this overhaul in a very different direction.

Um, once you kind of—and I think that makes sense. If you have legislation that you think needs fixed and so you start opening it up to try to change it, it's at a—like, there's a vulnerability right now, and you could have used it to protect workers or you could start skewing it to allow for businesses to perhaps decrease safety protections in order to make more money.

Justin: Yeah. Great.

Sydnee: And you can probably guess what direction we're going. So, they have sought what's called a significant new use rule for asbestos, which means, uh, this is a way of evaluating and regulating a toxic substance by the EPA prior to its induction, and this is being billed as, "Look, we just wanna do this so that we can regulate asbestos more closely."

But underneath it, they have opened the door to use asbestos in new ways, which wasn't the plan. The plan was to not use any more asbestos. What they're saying is, "No, we're gonna use asbestos, maybe, in new ways, and the EPA will be in charge of regulating that."

Justin: Great.

Sydnee: "We have a formula that we'll use to regulate to figure out, is the risk worth it? And if it's sufficiently minimal, then we'll allow for a new use of asbestos."

Um… the problem with that is, how do they decide if it's risky? How do they decide if this new use is risky or not?

Justin: Well, they don't need to, 'cause there's all this research that says it is.

Sydnee: Well, they're not going to use any of that research.

Justin: Awww, no.

Sydnee: Because a document that was published in May called "The Problem Formulation of the Risk Evaluation for Asbestos" outlines how they're going to evaluate the risk of new uses of asbestos, and it specifically prohibits the use of any legacy research. Meaning all this giant body of evidence that we have that says asbestos is dangerous in all these different applications? We're not gonna use any of that to decide if it's safe or dangerous in this new application.

Justin: [sighs]

Sydnee: So all that research we had for all these decades, of all the people who have—who have become ill or died from exposure to asbestos, none of that is going to be used in this new risk calculation. You're just gonna throw it all out and start over. And obviously that leaves the door open to… lower that risk and use asbestos in new ways. Um, which I think could be very dangerous for workers in this country.

Uh, why would we do this?

Justin: I don't know!

Sydnee: I—well, one, money. I mean… right? Like, there's gotta—there's money.

Justin: [simultaneously] Okay. Well, I should've said money.

Sydnee: There's money somewhere. Somebody—somebody's gonna benefit from this. Somebody's gonna profit from this. Somebody wants to use asbestos. Somebody wants to buy it. Somebody wants to sell it, and somebody wants to put it in something. I don't know what new use, but something.

Um, I would say part of it, too, is the fact that, uh, Trump does not necessarily believe that asbestos is dangerous.

[pauses]

Justin: Oh yeah? [snorts]

Sydnee: In *The Art of the Comeback* he states, "I believe that the movement against asbestos was led by the mob, because it was often mob-related companies that would do the asbestos removal. Great pressure was put on politicians, and as usual, the politicians relented."

So I guess if you didn't believe asbestos was dangerous to begin with, it would be easy to see why you would do this.

Justin: Yeah.

Sydnee: Of course.

Justin: Why'd you'd be pretty amped about it.

Sydnee: You'd also be wrong, though. Because whether or not you *believe* asbestos is dangerous really doesn't matter. It is. You don't have to believe that. It is.

Justin: It just is.

Sydnee: It just is. Truth is truth, and it is. Um, the other thing that I think is worth mentioning is as of 2015, over half of the world's asbestos supply was mined in Russia.

Justin: Whoa. We got him. That's it, folks!

Sydnee: [laughs quietly]

Justin: That should wrap it up! Woo!

Sydnee: I'm just saying, that is a fact.

Justin: Got it.

Sydnee: That's just a—

Justin: Smoking gun right there. Finally got some evidence.

Sydnee: Asbestos is dangerous. Asbestos, um, if, I mean, inhaled… [laughs quietly] obviously you have to inhale it for it to be dangerous. Its existence. on Earth isn't intrinsically dangerous, but once you inhale it, it can cause lung disease and cancer and death. And we have lots and lots of evidence, and lots and lots of doctors and scientists, um, who say that. Lots of former EPA employees who are outraged and speaking out against these new—these new regulations. Um, so… there it is. There is—it is—it is kind of as outrageous as it sounds.

The—the previously banned uses of asbestos are not unbanned. That's the only part that isn't true. They're not unbanning—like, if you couldn't use asbestos for this particular building thing, you still can't.

Justin: They're just—okay.

Sydnee: But maybe there's a new way we can use it.

Justin: They're not—they're not, like—they're not gonna revert to shared custody, but maybe asbestos can come by on weekends and holidays.

Sydnee: There you go.

Justin: Maybe there's something else that asbestos—maybe asbestos can, like… drive you to the park or something.

Sydnee: Mm-hmm.

Justin: That's a weird analogy to use. I'll come up with a better one next.

Sydnee: They're just—they're just—I mean, there is—this is opening a door to introduce more asbestos… into… our—I mean, I was gonna say into the marketplace, into the economy, into our lives?

Justin: Lives? Our lungs?

Sydnee: [simultaneously] Into our lungs?

Justin: Yeah, into our human bodies?

Sydnee: Into our bodies.

Justin: Of which we each have one.

Sydnee: And, um… I know that it's a very useful material but since it kills us—

Justin: So useful.

Sydnee: —I would—I am not a, um… builder. I am just a doctor, and my advice we be we keep it away from our human bodies.

Justin: Done. Okay. Good deal. Uh—[laughs] folks—

Sydnee: [laughs]

Justin: —that's gonna do it for us this week. Thank you so much for listening. I was gonna say I hope you've enjoyed yourself… [through laughter] I hope you're sufficiently motivated to vote, I guess? Um—

Sydnee: I mean, I think Pruitt's already out now, right?

Justin: Hey, we did that—that's, like—

Sydnee: I mean, that's done.

Justin: That's somethin'.

Sydnee: But this is—I mean, I—I think this exists around him and beyond him and outside of him, so.

Justin: Um, uh, we would ask that you, uh, share the episode. This episode, share it with some folks! Say "Hey, if you wanna know what's goin' on with asbestos, and that it is f—for real, totally bad, listen to this episode."

Uh, rate us on iTunes, etc, etc, etc. Thank you to The Taxpayers for the use of our song "Medicines" as the intro and outro in our program, and thanks to you! Uh, we really appreciate it.

We, uh—I should've mentioned. We, um, are gonna be trying to do Friday releases as much as possible. We know *Sawbones* has always been a little bit inconsistent, 'cause we're both parents of the same kids, so—

Sydnee: [laughs quietly]

Justin: —the trouble seems to, uh, to hap—come by, uh, simultaneously. We are gonna make an effort, though, um, to release on Fridays, so look for a new episode next Friday. Until that time, though, 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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