

Sawbones 547: Wasps

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["Medicines" by The Taxpayers plays]

Justin: Hello, everybody! And welcome to Sawbones! A marital tour of misguided medicine. I'm your co-host, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

Justin: And I am so happy to be here with you, Sydnee, as a survivor first. [titters] And we are—this is one that has really touched our household, and I am so happy to be talking about it with you here today.

Sydnee: We've had a rough—we've had a rough go of it recently. I mean, I say rough. Like, relatively, it really wasn't that bad. It's been annoying. We've had an annoying go of it lately.

Justin: Yeah, that's a good—that's a good way of putting it.

Sydnee: Yeah, some annoying medical maladies. Nothing serious, nothing that really merits complaining about.

Justin: No.

Sydnee: But we're gonna complain about it, because...

Justin: What else?

Sydnee: Why else do you get a podcast, right?

Justin: Yeah, right? [chuckles] Yeah.

Sydnee: So, Justin, you and I both suffered an attack.

Justin: [titters] Yes, an attack.

Sydnee: [titters] Independent attacks.

Justin: Two independent attacks.

Sydnee: By members of the Hymenoptera.

Justin: The wasp community.

Sydnee: The wasp community.

Justin: Yes.

Sydnee: Not White Anglo-Saxon Protestants.

Justin: Saxon Protestants, no.

Sydnee: They have not attacked us, recently, that we know of.

Justin: Not recently, no.

Sydnee: We did—we did just do The Prom in Huntington, Virginia—

Justin: Perhaps—

Sydnee: And I was prepared, but they didn't.

Justin: I assume that they're always working in secret against my interests, of course.

Sydnee: [titters]

Justin: But they have not worked in the light of day against me, to thwart my objectives, recently.

Sydnee: No, but the insect, the wasp.

Justin: That guy... Listen, I was out there with my kids, trying to raise an umbrella so my kids could get out of the sun a little bit. And this guy comes out of nowhere and stings the... I don't know if bejesus is cursing, but that is what he stung out of me. So, that is what happened. And he stung me so badly, and I was so mad. And I thought, well, at least he's dead now, you know, because he stung me. But no. [chuckles]

Sydnee: No...

Justin: It don't work like that, which I discovered so quickly, when I adamantly went to go raise the umbrella again and found that I was being stung once more. And Sydnee, I realized two things at that moment. I was in a great deal of distress.

Sydnee: Right.

Justin: The distress felt beyond... pain. It was a—it was a distress that went beyond just the sensation of pain. And the—and I was also suddenly aware of the fact that I have never been stung. I was certain, in that moment, I have never been stung by a wasp before. I had thought previously I may have been stung by a wasp. I have not been stung by a wasp previously.

Sydnee: I—

Justin: And the children laughed at me, because I squealed and screamed, because it hurt like so bad.

Sydnee: And I will say that when I came home, the children told me about this first. They were—they were gleefully—

Justin: Oh boy—

Sydnee: Telling me the tale—

Justin: It was a highlight.

Sydnee: Of daddy getting stung by the wasps. I initially was—I kind of brushed it off, I will say, which I tend to do with a lot of medical things. Like, you're fine, you're fine. And I did, and I got my comeuppance. Because then, several days later, I go outside to our deck, where your grill and my plants are. And I went out to sit down for a second, I had been with the kids all day. And I just needed—you know what I needed? I needed—

Justin: Just a—just like a second!

Sydnee: I wanted to sit at our picnic table and eat some Baked Lays, and drink some ginger ale. And just like stare at the sky and my plants, and disassociate for a few minutes, right? So, I got to do that.

Justin: Sounds nice.

Sydnee: And I sit down. And all of a sudden, I'm aware that my left inner thigh is in more pain than I thought was possible.

Justin: Right.

Sydnee: It was on fire. Somehow, I've set just my left inner thigh on fire. And as I start to scramble—

Justin: It feels like a dis—like something has gone wrong. Like it's like—

Sydnee: Uh-huh.

Justin: It's almost like the awareness of it comes before the pain, as though you've remembered an injury that you've always had. [chuckles]

Sydnee: And it was a moment of sheer panic, why is my thigh on fire? And as I begin to try to scramble up from behind the table, I become aware that my right inner thigh is now also on fire. And then as I start swatting—because this is when I have the thought like, this is a wasp. This is a wasp. There is something stinging me. I am being stung. And so, I start frantically

swatting, which is not what you're supposed to do to, try to get away. I get stung on my left inner arm too. So, now I have three stings. I fling my chips, my drink and my phone, and run inside. [chuckles]

Justin: Yes.

Sydnee: And then collapse on the floor, yelling, "Justin, help." [chuckles]

Justin: Yes, I see this poor creature on the ground just looking at her limbs like they've betrayed her in the most foundational sense. Just like so... furious, I think, with the state of discomfort that you are in.

Sydnee: Now like—but like any good scientist, when you have a moment of sheer panic like this, when you have encountered a... some sort of malady that you are not prepared to encounter, it's an opportunity.

Justin: Right.

Sydnee: To science.

Justin: I had already been pushing—I had already been pushing the wasp narrative around our house.

Sydnee: Mm-hm.

Justin: And this is a great opportunity to... to take them on firsthand.

Sydnee: So we're going to talk a little bit about wasp stings. I had to do—I had to do a fair amount of research, because I'm not...

Justin: A waspologist.

Sydnee: A wasp expert. I don't know about the Hymenoptera, other than their interactions with humanity. And I had to read about that. But I also want to talk about some of the kind of folk remedies. Some of your—the things that maybe your parents or grandparents or neighbors or aunts or uncles, someone is gonna tell you, "Oh, well, next time you get a wasp sting, do this." So, we tried some of those.

Justin: Yeah.

Sydnee: We actually applied some of these—

Justin: Why not?

Sydnee: Modern day poultices—

Justin: Absolutely.

Sydnee: To my wasp stings.

Justin: Yes.

Sydnee: Much to the delight of our children.

Justin: Yeah! They love to be practitioners.

Sydnee: So, we'll walk through what the result was. But first of all, Justin, how much do you know about wasps?

Justin: Well, honey, they are angry, big bees.

Sydnee: Well, they're not—they're not bees.

Justin: Big, angry—

Sydnee: Neither a bee—

Justin: Big, angry bees!

Sydnee: Nor an ant. They're of the narrow-waisted suborder Apocrypta, of the order Hymenoptera.

Justin: I don't know why it has to be about that, but okay. [chuckles]

Sydnee: They exclude the broad-wasted saw fly, so—

Justin: Classic.

Sydnee: They seem—

Justin: I've been there. It sounds like middle school for me.

Sydnee: Oh? They seem pretty mean. But so, the wasps, the Hymenoptera you may encounter; hornets, yellow jackets, around here, a lot of the wasps we come into contact with are paper wasps.

Justin: Okay?

Sydnee: And you may recognize a wasp nest from these specific kind of wasps, because they're that sort of like honeycomb-like structure, like a vert—vertical pores, is what those are.

Justin: Okay.

Sydnee: And they look papery. Do you know what I'm talking about? They're like brown, papery.

Justin: Yes.

Sydnee: There was one, it turns out, under the bench, next to our picnic table.

Justin: Yes.

Sydnee: Which is why I got stung so many times. So, they do like to attach themselves to things like the sides of trees or houses or benches, or umbrellas, very classically.

Justin: Oh, boy.

Sydnee: If you have a big like outdoor umbrella table, like next to a pool or something, you've got a big umbrella? Be careful! Especially the first time in the season that you go to open that thing.

Justin: Oh, because of the big bees. Be careful.

Sydnee: Be careful—they're not bees?

Justin: [chuckles]

Sydnee: They're not bees. [titters]

Justin: The scientific community has agreed on that.

Sydnee: I was stung once by a yellow jacket when I was young, because—it was on a scooter. Like a little scooter. Not a cool scooter.

Justin: Mm-hm.

Sydnee: Like they have now. You know, but like a little scooter that my friend had that was yellow, and had The Simpsons on it.

Justin: Oh, wow.

Sydnee: And so, it was a Simpsons-themed scooter. Mine was themed like Joe Cool. Remember that Snoopy character, Joe Cool?

Justin: That beloved Snoopy character—

Sydnee: Uh-huh.

Justin: Joe Cool? Yes, honey.

Sydnee: But my friend Tommy's was Simpson's themed, and it was yellow, and there was a yellow jacket on the handle. And I grabbed the handle, and the yellow jacket stung my hand.

Justin: Ah!

Sydnee: Yeah.

Justin: What's a yellow jacket?

Sydnee: It's just another kind of wasp.

Justin: Okay.

Sydnee: A lot of it is distinguished by somewhat their behavior, their living—like, are they social or solitary? And then their pattern of color. The wasps that stung me the other day were kind of a brownish color.

Justin: Okay?

Sydnee: Whereas yellow jackets, very classically, have the yellow and black stripey pattern. And there are a lot of different—most wasps are solitary, so they just sort of like deposit their young in a nest and then go off on adventures for the rest of their lives. Like the mud dauber, or things like that, which lives in the mud, you may have guessed. But then the like yellow jackets and paper wasps and some of these other hornets are social creatures, so they live in these congregate nests, right? And so if you mess with the nest—

Justin: You mess with the best.

Sydnee: You get 'em all.

Justin: You get to—can I try again? Give it—give—

Sydnee: So if you mess with the nest—

Justin: You get all the rest.

Sydnee: There you go. That's right. That's right. And supposedly, yellow jackets are the more aggressive ones. Like, if you have food or something, they'll come at you.

Justin: Yeah.

Sydnee: And the ones that stung us, because those were also paper wasps—

Justin: They absolutely will defend—or at least my guy, absolutely defending a hive.

Sydnee: Yes.

Justin: There was one up there in the—in the umbrella. I saw it with my own two eyes.

Sydnee: Yes, they only attack if they're provoked, meaning that you got too close to their nest.

Justin: Yes.

Sydnee: So you don't have to—now, if you swat at them, you've made things worse. So that sort of like—I kept—I read all these articles about like how do you avoid wasp stings. And they talk a lot about the flailing motions of humans. And I like that entomologists are like, "You know, how humans have flailing motions." [chuckles] We do! When wasps come at us, or bees or whatever, we kind of flail.

Justin: Like a wavy tube arm man? Yes.

Sydnee: Right. And that makes them scared more further, because first—

Justin: Fair!

Sydnee: They're like defending their home. And at that point, when we start flailing it's like, "Oh, okay, now they're attacking me."

Justin: Imagine—like King Kong's already scary, right?

Sydnee: Mm-hm.

Justin: Imagine if King Kong started just like, [yells out] "*Rargh!*" Like just like absolutely flipping out. I think we'd all be pretty tripped.

Sydnee: And then we come at them, and it's scary, and so then they sting you. And they can sting you again, they don't die when they sting you. That's not true.

Justin: Yeah, they don't care. This guy did not care.

Sydnee: They can do it again. The stingers, by the way, are evolved from an ovipositor. Like an egg depositor.

Justin: Oh, gross! Yeah, great, gross.

Sydnee: Yeah.

Justin: Super gross.

Sydnee: But I mean, they're not depositing eggs in you when they sting you, but they—

Justin: They do more.

Sydnee: Also do that.

Justin: Okay, got it.

Sydnee: So, they can do that. And then, of course—

Justin: "Hi. We don't deposit eggs in you anymore."

[group chuckle]

Sydnee: So, once—here's what's happening. The wasp stings you. Okay?

Justin: Okay, listen, that part I was clear on.

Sydnee: And then they have a venom sack. So there's venom. Did you know wasps have venom? Like there's venom—

Justin: Okay, can I say, seriously? I didn't know that before, but there was absolutely a component of that where I realized there were other things going on in my—in my body.

Sydnee: So, when a wasp stings you, there are 13 different antigens in the venom, things that can trigger reactions in your body, that are present in that venom as it is entering your subcutaneous tissue, your skin, right?

Justin: Right.

Sydnee: The first thing is a stinging sensation. This is because of acetylcholine and serotonin.

Justin: Right.

Sydnee: So basically, they're making all the nerves in your skin, they're immediately like triggering all these pain receptors. And they're causing depolarization of all—they're called nociceptors. They're pain receptors in the skin. So, they're causing all of these immediate nerve reactions. They're triggering all these nerve reactions with the acetylcholine and the serotonin. Including like the blood vessels start spasming, so they can get really tight and then dilate, and so... anyway! All of that happens immediately, and it causes a great deal of stinging and pain.

Justin: Yes.

Sydnee: Which is, a lot of people like I've experienced, feel like you're on fire. You feel like your skin's on fire for a second.

Justin: It is very panic inducing.

Sydnee: It is! It is panic inducing. After that, there are other components that start to cause mast cells to degranulate, these big cells which release histamine. So then the histamine reaction happens, right?

Justin: Okay.

Sydnee: And so then you start getting swelling, you get redness, you get the stuff you recognize from any kind of bug bite or sting, right? The local inflammatory reaction.

Justin: Now, this was a wild one.

Sydnee: Mm-hm.

Justin: Like this was—this is not like a little bump. It was like an immediate like welt, is the word I would probably use. It was quite sizable, and the inflamed area was like pretty, pretty crazy.

Sydnee: It is—it is a—it is a large, inflamed area that it causes. I will say that on the Starr pain scale, which is the pain scale we use for Hymenoptera stings, out of a four, a wasp sting is only a level two. [titters]

Justin: Oh? Wow. Sheesh.

Sydnee: So—

Justin: Okay, good to know.

Sydnee: I mean... It could have been worse, I guess is what I'm saying.

Justin: Yeah, apparently.

Sydnee: Right. Now, obviously, for most people, that's what's gonna happen. You're gonna get all this stuff I just talked about, it's gonna cause a localized reaction. You're gonna get redness, swelling, itching, stinging, burning pain. It continues, by the way, throughout like the rest of the day.

Justin: Yup!

Sydnee: You have like these moments of like electric shock, like stinging burningness—

Justin: Yeah.

Sydnee: Just sort of like shooting through your arm or leg, and you're like, "Ah!"

Justin: I'm so glad to hear you say that, because I did think that was in my head. But it was—it was *extremely* unpleasant.

Sydnee: No, it takes a while, because the Venom's in there, and it's doing its thing. It takes a while for all of that to go away. And it takes quite a bit to heal. I will say, at this moment, as we are recording, I still have three very distinct, red... holes in my skin. [titters] Surrounded by, for me, I have developed a slight like maculopapular rash around the two on my thighs. Like little red, bumpy rash.

Justin: Mm-hm.

Sydnee: Not so much the one on my arm, but the ones on my thighs now have a slight rash around them.

Justin: Oh...

Sydnee: And they're still quite itchy.

Justin: Yeah.

Sydnee: Anyway, the worry is—

Justin: Cortisol cream or anything? Would that help?

Sydnee: I should, I should. I'm not putting anything on them, but I should. The worry, though, the thing that makes us worry the most about wasps, and bees and other insect stinginess, right? Is the idea that for some people, the localized reaction is not the end of the event.

Justin: Mm-hm.

Sydnee: So, in order to have what we kind of think of as like an allergic reaction, right? When we say somebody is allergic to a—to bees or to wasps

or whatever, then you have to have been exposed in the past. So. that's the first thing.

Justin: Oh? Okay.

Sydnee: So you would never have this reaction with the first sting.

Justin: Oh, that's comforting. Great.

Sydnee: Yeah. So, I mean, that was why like, in that moment, I—it hit me. I got stung by a yellow jacket—

Justin: Would this still be the first—

Sydnee: When I was a child, and I don't think I've been stung since. And I had this moment of, am I gonna be anaphylactic?

Justin: Would that—now, okay. Now, the fact that we were stung multiple times, it would still be just one time, right? Like—

Sydnee: Yeah. Well, you have to have a past—

Justin: This would be a stinging incident.

Sydnee: Yes, a stinging incident, exactly. You have to be sensitized. You have to rev up the immune system against the invader. And so that then when the invader shows up again later, it's like your whole body goes—

Justin: It wouldn't happen instantly.

Sydnee: Goes berserk.

Justin: Yeah.

Sydnee: In a way that is not necessarily helpful to you. And then that's what we really worry about, right? People who have these systemic reactions where all of this stuff happens locally. But then you also begin to maybe have trouble breathing, your airway begins to close, you have people who,

you know, I mean, need to go to the hospital, they go into shock. Maybe their blood vessels begin to dilate and their organs aren't being perfused, they're not getting enough blood flow and oxygen.

And so, that's what we worry about, is this developing into a severe anaphylactic response. This is not going to happen for most people, but it can. Which is why we do take wasp and bee and other, you know, insect stings very seriously, because if you are someone who is allergic, it can be a big deal. For most of us, it's just a pain.

Justin: The exhaustion was weird, though.

Sydnee: Mm-hm.

Justin: I didn't know that was part of it until you told me later.

Sydnee: Well, I think it had a lot to do with the fact that we had an intense cortisol release, a stress response. So like, our system was inflamed, we had the release of all these stress hormones and chemicals in our body.

Justin: out an hour after it happened, I felt like more—like tireder than I—and I was—I was watching our kids and... two other kid—god, four other kids. Six total children!

Sydnee: We had six girls at our house.

Justin: Yes, six girls. And I was like, oh my god, I'm tireder than I've ever been in my entire life. I'm gonna fall asleep watching these kids. Like, that's how exhausted I was after the sting about an hour later.

Sydnee: Now, this is interesting. These are—this is not the time when most people get stung.

Justin: Really?

Sydnee: Yeah, I thought this was interesting. The end of the summer season is usually when most stings occur. And it's because of like the colony structure, they begin to prepare for hibernation. The wasp nest begins to die

off, they don't produce as many worker wasps at that point. And so the ones who are remaining feel confused and disoriented. They don't have the same amount of food, and so they're much more likely to come into human spaces, interact with humans, scouting for food.

Justin: Oh.

Sydnee: And sting you. So, end of summer tends to be when most stings happen. But certainly, you can get stung anytime. Most of us will have five or fewer stings in our lifetime.

Justin: That's crazy that you and I used up like half of our total.

Sydnee: So, Justin, I want—

Justin: As a couple. [chuckles]

Sydnee: We did. [chuckles] I got three, and I got one as a kid, I'm all done. I'm all done. And I think I've gotten stung by bees, but it's never been like that.

Justin: Yeah.

Sydnee: The wasp sting was a whole other thing. So, Justin, I want to talk about our adventures, our science adventures with our children and all of our folk remedies. But before I do that, we gotta go to the billing department.

Justin: All right, let's go!

[theme music plays]

[ad read]

Justin: Welcome—okay, welcome back to the lab.

Sydnee: Hmph. Let's see what's on the slab?

Justin: [titters] Yeah.

Sydnee: So—

Justin: It's cucumbers.

Sydnee: [chuckles] Okay. So, I looked up common folk remedies. And some of these things I'd heard. Some of these things, actually, our family and friends told us to do when we shared our wasp adventure. But I wanted to see like what does the internet say I'm supposed to do? And let's—what do we have in our kitchen? What can we go ahead and just try?

Justin: Is there an all-timer? Is there one that you saw pop up like the most?

Sydnee: Yes, and we'll talk about it.

Justin: Oh?

Sydnee: But I want to say that I avoided anything that was—that I thought might be dangerous. Like I'm not going to put something on my skin that I think would be caustic, right?

Justin: Fair, yeah.

Sydnee: I'm not going to be silly about it. And I also, I knew two of them, even though they were listed as folk remedies, were probably the ones that would work. So, we'll save that for the end. I want to start though with cucumbers. I got really excited when I saw that cucumbers supposedly are a cure for wasp stings, or a cure—I mean, they alleviate—a lot of these folk remedies say that they alleviate the pain, the itching, the swelling that comes with a wasp sting. So, what they say to do with cucumber—I got really excited because I grow cucumbers. I had just grown...

Justin: You could be growing your—

Sydnee: Tons of them.

Justin: Own treatment. That's very exciting for you.

Sydnee: Right! And so I love the idea like, I grabbed a cucumber out of the fridge, I chopped it up. We ate some of it. Because it's good.

Justin: A whole—yeah.

Sydnee: It was a good one.

Justin: Yeah.

Sydnee: And then also, we used it on the wasp sting. So, the way that you're supposed to, according to the internet, use cucumbers. You wash the area with soap and water, and then you take a slice of cooled cucumber and you rub it on the sting until the pain subsides.

Justin: Okay.

Sydnee: Now, first of all, before I talk about what it did for me, why—I always like to hear the rationale. Because somebody's gonna tell you, there—it is—this is like true, almost without fail. If somebody's gonna give you a folk remedy, they have a rationale. They're gonna tell you why. "No, no, this isn't just like, you know, my grandma's grandma's grandma told her."

Justin: This is scientifically proven.

Sydnee: Yeah, we got a reason.

Justin: There's a reason, it makes sense. You just gotta think—gotta know the science.

Sydnee: So, I read several reasons that people—I mean, because this is recommended multiple different places.

Justin: Yeah.

Sydnee: Especially like, a lot of these are from either alternative med sites, holistic type bloggers...

Justin: Right.

Sydnee: Moms who want you not to take medicine, I don't know.

Justin: Probably whatever there—whatever their whole deal is! Whatever they're into! [laughs]

Sydnee: Yeah, I don't know, whatever—whatever that's all about.

Justin: I don't know when moms turn against medicine, but apparently, they got some issue.

Sydnee: I know, because my mom was not against medicine, the Dimetapp and the Benadryl flowed freely—

Justin: [laughs]

Sydnee: In the Smirl household, growing up. So, I don't know when that happened. But so, cucumbers supposedly have kind of an astringent effect. They like tighten the skin. They also cool the skin, according to some of these blogs. And I will say like, these were chilled cucumbers, so of course they were cooling. They were from the fridge. They felt cold.

Justin: That would feel good, right?

Sydnee: So yeah, sure. They also contain compounds known as cucurbitacins, which is my favorite new word. Cucurbitacins.

Justin: I don't think that that's right, babe. Cucurbitacins?

Sydnee: Yes, cucurbitacins. They are in multiple different foods, not just cucumbers, but like zucchini have them, bitter melon—

Justin: They're main for cucumbers?

Sydnee: I mean, obviously—

Justin: Same root, yeah?

Sydnee: Yeah, same root as cucumber. But they're in a lot of different vegetables, and they—specifically, the reason that you would know them in food science is that they give foods a bitter taste.

Justin: Okay.

Sydnee: Okay? So like, some foods are obviously much higher in them, the more bitter taste they have. Some foods are lower, if they're more sweeter and mild.

Justin: Okay.

Sydnee: Supposedly, cucurbitacins also have some anti-inflammatory properties. And there is a lot of research kind of in vitro, meaning in labs. They've taken—because there's a ton of different—cucurbitacin A and B and C and D. There's lots of different cucurbitacins. They have taken them—

Justin: [chuckles] It's a really good word, sorry.

Sydnee: It is a great word! And they've tried them against like tumors in a petri dish and, you know, inflammatory mediators. And found like, look, in a petri dish, this is very helpful. We don't really know what that means in the human body. I have no evidence that specifically these have anything to do with inflammation. But that's the argument, right? That these properties in the cucumber, the cucurbitacins, if there's enough of them, that they can reduce inflammation. Reduce the itching, the burning, the pain, the swelling... so on and so forth. I will say that foods that are high in cucurbitacins can sometimes make you sick if you eat too much of them. It can be toxic. The dose makes the poison.

Justin: Ah, yes.

Sydnee: And this is called toxic squash syndrome.

[group chuckle]

Sydnee: I didn't make this up.

Justin: You've just got cucumber fever!

Sydnee: I didn't make this up!

Justin: Cucumber fever, you can't stop jamming these green beauties.

Sydnee: So, there were—

Justin: Gonna poison myself with cucumbers.

Sydnee: I found this case, this is sort of like your index case. In France, in 2018, there were two women who ate soup made from bitter pumpkins. They got really sick, nausea, vomiting, diarrhea. They had hair loss afterwards. And it was because they ate so much bitter squash, which—the bitter pumpkin, which had so much cucurbitacin that they got toxic from it. And that is not typical.

It probably had to do with there was a high concentration of it because of cross pollination, or plant growth stress due to high temperature and drought. So it was a really bad year for bitter pumpkin, and these two women—

Justin: It was these—you don't understand, these pumpkins were so bitter, guys! It was unbelievable.

Sydnee: They were so bitter. They were so bitter. So, I will say that as I was reading all this, I started to get worried because it has been really hot, obviously, everywhere. But especially here in West Virginia, it's been so hot.

Justin: Right.

Sydnee: And my cucumbers that I harvested initially were sweeter. And then the last few cucumbers I've harvested have been more bitter.

Justin: Uh-oh.

Sydnee: And I wonder if it's the heat and the drought conditions. And then I don't know about cross pollination, I grow other squashes in there. There's lots of squashes.

Justin: Yeah.

Sydnee: Anyway, I'm worried about the cucurbitacins.

Justin: Honey, you've got to be on guard 100% of the time.

Sydnee: The outcome for me; they were cold. And that felt nice.

Justin: [chuckles] Okay! There you go. There's your scientific—

Sydnee: I did not see a huge change in the appearance of my skin, nor in the pain, really. But they did feel nice, because they were cold. Kind of like when you put 'em on your eyes. Like I learned how to do from Don't Tell Mom the Babysitter's Dead.

Justin: I would definitely say this next one was the... messiest. [chuckles] The ones our kids made the biggest mess with.

Sydnee: This next one is the messiest, and the one that I got told the most frequently. People I know personally told me to do this; baking soda.

Justin: Okay.

Sydnee: Baking soda, this is—this took me down this whole internet rabbit hole of baking soda being used for insect sting—insect stings. Both bees and wasps, and the whys and the why nots. So, the way to do it, and it depends on what you read, but generally speaking, everybody agrees. You gotta make a paste of the baking soda.

Justin: Right.

Sydnee: So, you take a little bit of baking soda and just keep adding tiny bits of water until it's pasty, right? Like you don't—I don't think we need a recipe for that, you know, make it a paste. Add water 'til it's pasty. And then what I read is to apply it to a bandage, and then put the bandage over the sting, so you kind of—

Justin: Right.

Sydnee: You know, create a compress with it.

Justin: Yeah.

Sydnee: And leave it for 15 minutes.

Justin: Okay.

Sydnee: Okay, why does baking soda supposedly do this?

Justin: If I had to guess, it's an acid base kind of deal.

Sydnee: That's exactly the rationale. So, the idea is that venom is acidic, baking soda is basic. So it will neutralize the venom, and therefore eliminate the symptoms of the venom; itching, pain, burn, swelling, blah, blah, blah, right? Okay. Here's the problem with this. Wasp venom is not acidic.

Justin: Is it basic?

Sydnee: This is a thing that I now know. I like—I like to know some things. I like to know things. And this is a thing I now know. Bee venom is slightly acidic! It has a pH between 4.5 and 5.5, so that's somewhere between beer and black coffee.

Justin: Okay.

Sydnee: That is the acidity of bee venom.

Justin: So maybe some neutralization there could happen?

Sydnee: So it is slightly acidic, okay?

Justin: Okay.

Sydnee: Wasp venom has a pH of around 6.8. Justin, what's neutral? Do you know?

Justin: Yeah, I do Sydnee. It's fi—se—seven?

Sydnee: Seven.

Justin: Seven.

Sydnee: Neutral is seven.

Justin: Neutral is seven, so... when you're getting lower, you gotta wonder, is that more acidic or less?

Sydnee: So, it's not... no, okay, lower is more acidic, higher is more alkaline.

Justin: As I said! As I said—

Sydnee: Seven is in the middle.

Justin: Yes, of course.

Sydnee: Seven is like water.

Justin: Yes, I agree.

Sydnee: Generally. Generally, generally. So, if bee venom is acidic, would baking soda then help neutralize it? No, probably not, because it's really not that acidic. [chuckles] That's the other thing! It's just not really that acidic. And we also don't know that neutralizing it does anything, or that baking soda applied in a paste would in any way infiltrate the dermis and...

Justin: Right.

Sydnee: You know what I mean? So like—

Justin: Yes.

Sydnee: There's really no evidence for the bee venom thing. But it definitely wouldn't work for a wasp sting, because wasp venom is not acidic. So the entire principle behind baking soda falls apart with wasp stings.

Justin: Hey! Our—hey, listen—

Sydnee: Now—

Justin: What can you do, though?

Sydnee: That being said, I found it unpleasant because my children applied a large amount of baking soda paste to my arm and leg. However, the redness did improve a little. I don't... I don't know.

Justin: Listen—

Sydnee: It didn't feel any different, but after we wiped it off, it looked less red.

Justin: Okay. Listen. Enough said.

Sydnee: Enough said.

Justin: You tell me. You tell me!

Sydnee: So, the next thing—and this this kind of falls into the same line. The next cure that I came across, I found people suggesting lemon juice and people suggesting vinegar. And these have the same rationale.

Justin: As acidic.

Sydnee: They're acids.

Justin: To neutralize the base.

Sydnee: To neutralize the base. So the idea is, you take some cotton or paper towel or something, soak it in lemon juice or vinegar, dab it on the sting.

Justin: Okay, so this—

Sydnee: It will neutralize the basic venom. However, what do we know about wasp venom?

Justin: It's not *that*.

Sydnee: It's not alkaline. It's neutral. [chuckles]

Justin: It's neutral, it's—

Sydnee: So it wouldn't—so this would do...

Justin: Not...

Sydnee: Nothing.

Justin: Nothing.

Sydnee: Except now you smell like either vinegar—

Justin: Bad.

Sydnee: Or lemon juice.

Justin: Good.

Sydnee: So, I chose the lemon juice, because I didn't want to smell like vinegar. And because by now, I'd already done the research on baking soda, so I knew this wasn't going to work. So maybe I'm biased.

Justin: Yeah.

Sydnee: Right? I'm biased now at this point.

Justin: [chuckles]

Sydnee: So we put—we put some of the lemon juice on it. It kind of did sting just a little, but also, I had an open wound, and I dumped some lemon juice in it. So, I don't really think that had anything to do with the—you know, like—

Justin: Yeah.

Sydnee: I think that just stung. My arm smelled like lemon, and it could have been vinegar, so... could be worse.

Justin: But yeah, that was a—that was an upgrade from vinegar.

Sydnee: But I would not recommend. And the last thing I let my kids try—and like I said, there are endless recommendations out there. We could have done this all day long, but it did involve my human body and substances put on it, so...

Justin: Yes.

Sydnee: I capped it at this last one.

Justin: Yes.

Sydnee: Toothpaste. I will say that when I was younger, I read—not on the internet, because there was no internet. Someone told me that toothpaste—

Justin: [chuckles]

Sydnee: Helped with acne. And I did indeed occasionally put toothpaste on acne, thinking that it would help. I don't think it did, but—

Justin: But—

Sydnee: I don't know, you'd have to go back and ask adolescent Sydnee.

Justin: But at least it's a old—it's an appeal to ancient wisdom. [titters]

Sydnee: So, toothpaste on the sting. Basically, I couldn't find out like what kind. Nobody knew.

Justin: Right.

Sydnee: My kids chose their toothpaste, which is blue and sparkly, and changes colors when you use it.

[group chuckle]

Justin: Probably not what Pliny the Elder had in mind. [chuckles]

Sydnee: They put so much of it on there. [chuckles] My leg, my inner thigh was just caked in blue sparkly toothpaste. Why? This is a pH thing, again, primarily. And the idea is that toothpaste is alkaline. Again, this doesn't work because bee venom is acidic, but wasp venom is not. However, the other things they note are that toothpaste has antibiotics like triclosan in it. So maybe if there's infection, it could kill the infection. And then also, it has some anti-inflammatory properties from the fluoride. This is the argument for toothpaste. I will say it did nothing for the pain. It made my skin redder. [chuckles] So like—

Justin: So in review—

Sydnee: It worked worse!

Justin: Yeah.

Sydnee: It didn't hurt more.

Justin: In review, it's sticky, it hurts more.

Sydnee: And then as I was trying to wipe it off, it started turning pink, because it was color changing. [chuckles] So, all in all, the toothpaste was maybe the worst?

Justin: Yeah.

Sydnee: The most epic of fails.

Justin: So we don't—

Sydnee: The lemon juice stung, but at least it—

Justin: This one is not—this one isn't great.

Sydnee: No.

Justin: This one, we didn't love.

Sydnee: So what worked, Justin?

Justin: You tell me, hun? Did anything work?

Sydnee: You know, you were there?

Justin: I know, I'm trying to add a little mystery. Ice. [titters]

Sydnee: Ice.

Justin: Good old-fashioned ice!

Sydnee: Ice packs and some ibuprofen. If you can take it, if it's safe, if you are someone who can take an NSAID. Some ibuprofen and some ice worked pretty well in reducing the swelling, the burning, the itching, the pain, the redness. I still do have a little bit of a rash. It's not completely gone. I probably could be using some hydrocortisone cream at this point, because they're kind of itchy. But overall, if you're not going to have—I mean, if you're just talking about a localized reaction, it's going to eventually go away on its own. I did find this interesting little footnote that it feels like, or

that we're seeing an increase in the percentage of wasps stings. Why? I mean, part of it is that people are—the more that humans encroach on, you know, forested spaces or wild spaces, the more interactions we're gonna have with all creatures great and small, right?

Justin: Mm-hm.

Sydnee: The heat doesn't help. So, I found this thing about how wasps sting more in the heat. Somebody was like, they get angrier. That didn't make sense to me. I mean, I don't think they're angrier. However, if it is warm, they grow more quickly, so they go through generations more rapidly. So, there is a reason why heat would lead to more wasps. And more wasps mean perhaps more interactions with humans.

Justin: Right.

Sydnee: Which could result in more stings. So, what should you do, Justin?

Justin: I don't know—well, Syd, I was just looking through these steps, and I'm realizing that I did—we typically do none of these—

Sydnee: Mm-hm.

Justin: Consistently. And I deserve what I got.

Sydnee: You need to be careful in areas where—where would there be wasps? Flower gardens, woods, orchards, rubbish bins.

Justin: Umbrellas.

Sydnee: Umbrellas. It's our whole house.

Justin: Umbrellas near rubbish bins.

Sydnee: If you see a wasp, remain calm.

Justin: Nope. Didn't do it.

Sydnee: Don't get close—if you see a nest, don't get close to it, because you're going to be perceived as a threat. So like, move away.

Justin: I can't help being perceived as a threat, that's been a problem my entire life.

Sydnee: [titters]

Justin: I can't help that others are intimidated by me.

Sydnee: If a wasp lands on you... hold still.

Justin: Didn't, nope. Didn't do that. How about this? What about spin around and scream? Like I just got a free bowl of ice cream.

Sydnee: Do not wave your arms. [chuckles]

Justin: [chuckles] No? Okay, wait—

Sydnee: Do not swat.

Justin: Both at the same time? I did that. Okay.

Sydnee: This will aggravate them.

Justin: Oh, yeah, I tried that.

Sydnee: Yeah. Cover your food and drinks, because they attract wasps.

Justin: Oh, yeah. The kids had—I had gotten Sonic for them for lunch, so it was just everywhere.

Sydnee: Yeah, so we had all the sugar. In every form. Solid, liquid, plasma form sugar, all the forms of sugar. Avoid using floral and fruity scents when you go outside.

Justin: Okay, now this one—

Sydnee: Also, wear clothes in subtle colors. [titters] This gets a little—after a while, you're like, I mean, all this for the wasps?

Justin: Well, yeah.

Sydnee: Right? If you have fruit trees, pick up fallen fruit, obviously. I mean anything like that is going to attract wasps. And then keep your rubbish bins sealed.

Justin: No, notably, because of the stupid, stupid raccoons.

Sydnee: Yes.

Justin: But I'm working against them now. I found a bungee cord lock for our trash cans. So I'm doing what I can.

Sydnee: Can I tell you, tonight, we came home, we dropped off some food to our—

Justin: Oh, man, I'm still steamed about it.

Sydnee: Our kids are rehearsing for outdoor theater at the park, we dropped off some food to them. And as we came back, there was a raccoon in our garage. He went running out of our garage into the blackberry bramble near our house.

Justin: *Ugh.*

Sydnee: And then after we walked out of the garage, and we were looking at the path where he just ran, he was peaking. Just staring.

Justin: Waiting for me to leave.

Sydnee: Staring Justin dead in the eye.

Justin: Waiting. He knows how much I hate his freaking guts.

Sydnee: Watching him.

Justin: Yeah.

Sydnee: It was—it was intense. If you do get stung, I mean, it's kind of—

Justin: Everyone roots for him, by the way. Anytime I talk about him, they always take his side. Like I've shared pictures of him before.

Sydnee: You have?

Justin: People are always on his team. Yeah, they never take my side.

Sydnee: I—listen, I love this boy. I do resent the mess he makes when we forget to bring our snacks in. We leave out snacks for delivery people on our front porch, and when we forget to take them in at night, it's just... it is like the biggest raccoon party has happened in my front yard. Just like wrappers and—

Justin: Sometimes they'll just take the snacks back to their burrow.
[chuckles] It's terrible, they won't even open 'em at my house. They take 'em to their house.

Sydnee: They open the ginger ale. How did they open the—I still—I still don't understand that.

Justin: So wild, man. I don't understand that.

Sydnee: Charlie said it's because raccoons have opposable thumbs, and I said no they don't. [chuckles]

Justin: Notably, hun. No, they don't.

Sydnee: If you get stung, there's really—

Justin: It's your fault. [chuckles]

Sydnee: There's two—there's two kind of situations here, right? If you just have a localized reaction, if you know you're not allergic, if you've been

stung before and you haven't had problems, or if you're not experiencing any severe symptoms, much like Justin and I, then you can do the things we did; some ice. If you were able to take an anti-inflammatory medication or a pain reliever like Tylenol or ibuprofen, or something like that, feel free. Ice will usually do it. You kind of alternate 10 minute increments on and off. Give it some time. It usually is going to be okay.

If you are someone who you know you're allergic, you've experienced anaphylactic reactions to Hymenoptera stings before, or if after you get stung, you begin to have shortness of breath, chest pain, you know, any kind of difficulty breathing, feeling disoriented, confused, dizzy, light-headed, feel like your throat is closing up, please call 911!

Obviously, if you have an EpiPen and you know this is an allergic reaction, you know what you're supposed to do, please do what you've been instructed to do by your healthcare provider. Please call 911, still, in those situations. You should still call 911. For most of us, it's annoying, it's painful, it is not that severe. But if it is something that is a severe reaction for you—and we see more severe reactions usually in adults, but that's because of the sensitization thing, right?

Justin: Right.

Sydnee: You're more likely as an adult to have been stung in your life. Usually, if you get stung as a kid, statistically, it's more likely to be the first time. But one way or the other, if you're concerned at all, please call 911, please seek medical attention. And try not to swat at 'em. I know it seems like they're out to get you. I feel like they're out to get me too. But generally speaking, it is—it is true with most, not all, but most flying insects with stingers, they don't want to mess with you any more than you want to mess with them. [chuckles]

Justin: Yeah. Hey, thanks so much for listening to our podcast. I hope you've enjoyed yourself. Thanks to The Taxpayers for use of their song, Medicines, as the intro and outro of the program. We really appreciate it. Thanks so much. Hey, thanks to folks who came out to Columbus to see us.

Sydnee: Yeah, it was so great to see you!

Justin: That was really fun. Thank you so much. We're going to be—My Brother, My Brother and Me and TAZ are going to be in Anaheim, in Sacramento, next week, or this week—no, next week, as you're listening to this. So, go to bit.ly/mcelroytours for information on that, and so much more. That's going to do it for us for this episode, until next time. My name is Justin McElroy.

Sydney: I'm Sydney McElroy.

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

["Medicines" by The Taxpayers plays]

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