Sawbones 207: Chili Peppers

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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, "Medicines" by The Taxpayers, plays]

[audience cheers]

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

[audience cheers]

Sydnee: And I'm Sydnee McElroy!

[audience cheers]

Sydnee: Thank you!

Justin: What a pleasure it is to be... in the greatest theatre in the world, the Keith-Albee.

[audience cheers]

Sydnee: We've never really gotten to do a show here.

Justin: No. It's a thrill.

Sydnee: Yeah.

Justin: It's thrilling. It's a beautiful—beautiful, beautiful, beautiful building. And uh—and also, it—by extension, the greatest city in the world: Huntington, West Virginia.

[audience cheers]

Justin: Now, listen. I say that at lots of cities...

Sydnee: [laughs]

Justin: ... but I mean it here.

Sydnee: Everywhere else, he just says it 'cause, like, that's what you have to.

Justin: Yeah.

Sydnee: And then everybody claps for him, and so—Justin loves that.

Justin: Love it.

Um, whenever we go on tour to a different locale, we try to do something that's, like, thematically appropriate. Like, when we were in DC, we did presidential medicine.

Sydnee: Mm-hm.

Justin: And—

Sydnee: And then last week, our episode about the history of soda as medicine, is because Atlanta is the home to Coke. So...

Justin: There we go.

Sydnee: Coca-Cola.

Justin: So in Huntington, we—we, uh—we wanted to try to pick something that would really speak to our people, and something that would really touch

them, something that's really close to, I think, all of our hearts. And uh... we're gonna talk about chili.

Sydnee: [laughs]

[audience cheers]

Sydnee: I was trying to think—and I love—let me—let us preface: in case you don't know, we both grew up there. We were both born in Huntington. I love Huntington, and I was trying to think, "What do I love about Huntington? What's special?" And so I say this with complete sincerity, we have a lot of food festivals here... which is great.

Justin: Like, a lot. In a way that when you leave Huntington, you're like, "So... what is it this weekend for you guys? Like, croissants, or what's the food this weekend?"

And they're like, "Well, we don't actually... have a food festival this weekend?"

And you're like, "Wait, what? It's Saturday and Sunday, you know? Coming up."

"So what—no f—no food. Okay. Alright."

Sydnee: And when we think about Huntington food festivals and medicine, I think it's obvious that, like, the hot dog festival's probably out.

Justin: That's a short episode. [grimly] "Don't."

[audience laughs]

Justin: [laughs] Don't hot—if you care about your human body, probably don't hot dog.

Sydnee: I hate to say that, because we have a lot of hot dogs here, y'all. Like, lots of—

Justin: I personally have a lot of hot dogs. This is definitely a black kettle situation, like, for sure.

Sydnee: But I don't think that there's a medical element to eating hot dogs. And rib fest, well, we won't even go there. But... chili fest, it's intriguing, because chili, obviously, is usually made with chili peppers. Usually.

Um, and chili peppers, specifically capsaicin, which is the active ingredient in chili peppers that makes them spicy, has been used as a medicine for thousands of years.

Justin: By the way, it's almost certainly occurred to you now that we do have a theme this evening. And that was unintentional, it just—

Sydnee: Yeah.

Justin: It just sort of shook out that way. But now you—I feel a lot more prepared, sort of from an etiquette perspective.

Sydnee: And this feels so wrong, because for any of you who attended chili fest, after you have stood outside in the heat for four or five hours, eating small cups of chili and drinking beer, you probably don't feel great. You're probably not thinking, "Mm, that was medicinal."

Justin: "Mm, medicine! Good!"

Sydnee: Um, but the truth is, like I said, there's more to capsaicin than meets the eye. So capsaicin, all of the chili peppers in the genus capsicum have capsaicin in them. And that's the—like I said, that's the thing that makes them spicy, and it ranges depending on what kind of pepper you get.

And a lot of people are familiar with the Scoville units, how spicy a pepper is, ranging from like a bell pepper that has no capsaicin, so no Scoville units, it's not—bell peppers aren't spicy, to like, the jalapeño pepper, which I guess is supposedly the pepper that most of us enjoy. It's like, the right amount of capsaicin for most people.

Justin: Not you. Not you.

Sydnee: No. No, I think they're too spicy. I'm not a spicy fan. And I also—I was chopping peppers once—do you remember this? And they got on my hands, the oil did, and my hands burned for like a day. It was terrible. It was terrible.

Justin: It was. I heard a lot about it.

Sydnee: [laughs] It was awful.

Justin: I remember vividly.

Sydnee: But to all the way to things like the ghost pepper, which is very, very spicy and I would never touch, um, but no matter how much capsaicin, no matter how spicy a pepper is, people have been using any spiciness as a marker of something that is good for you as medicine.

It is an irritant to mammals, which probably is so that we won't eat it...

Justin: Oops!

Sydnee: Joke's on you, peppers. We don't care. We're gonna eat you anyway.

Um, the way that it works, is it activates certain sensory nerves that we have there, channels on them, that usually are activated by things like heat, or if you get some kind of like, abrasion, like a scrape, then you would activate these channels of these sensory nerves, then you would get this like, burning sensation and pain because, you know, you're touching a stove and it hurts.

Well, capsaicin also activates these channels, so that's why you get this burning sensation, even though you're not actually being harmed by the pepper. Although, it can trigger inflammation. So if you're activating these nerves enough, your body thinks that you're getting burned, or that you have some sort of—like, road rash would be a good example. Some sort of

really bad abrasion, you scraped your—you know, you fell off your bike and really bit it, you scraped your knees really bad, that kind of burning.

You can get inflammation afterwards just from handling peppers, or from eating a lot of peppers because you have triggered this inflammatory response. And that's when you get, like, nausea, and your stomach hurts, and your nose runs, and, you know, all this extra fluid and swelling, and all that kind of stuff.

Also, in case you're not aware, this doesn't go away after the chili pepper travels through your GI tract. And the sensory nerves around your rectum are very sensitive... so you can get irritation on the way out, as well, if you eat a lot of chili peppers.

Justin: Yeah. Yeah, I...

[scattered audience laughter]

Justin: I'm no—listen, folks, I'm no scientist, but she is right about this one. I could go ahead and verify from a layman's perspective.

Sydnee: All that said, it is odd to say that the first humans who ate chili peppers went, "This must be medicine."

Justin: [laughs] Yes, that's tr—well, it doesn't feel good, and so few medicines do. And it—it hurts. It burns.

Sydnee: That's true. That's true. It hurts, it burns.

Justin: It looks like a pill, but they probably didn't have pills back then.

Sydnee: Mm-hm. No. No, the first use of peppers as, like, seasoning for something, for food, dates back to 7000 BCE in Mexico, where we found evidence that people were using it to spice up their foods. And a lot of South American cultures were already using it for seasonings. They thought that the burning and pain that would accom—this was all written down, like you would eat these foods, and it tasted good, but you'd also get this

burning and pain, and people started to suspect that, like I said, maybe this was doing something for you... medicinally.

Justin: That's a common theme, actually, that we see throughout history, I think, is that... before we understood things, the things that we thought were medicine were the things that got a response. So like, if something was a diuretic, a lot of people assumed, like, "Oh, that's getting the evil out. That—" they also thought that germs were evil. Uh...

Sydnee: You just used the—you used the word diuretic.

Justin: Oh. Well, I guess I—

Sydnee: I'm proud of you.

Justin: That word-a-day toilet paper is finally paying off.

Sydnee: Do you remember—do you remember what it means?

Justin: What?

Sydnee: Do you remember what it means?

Justin: Uh, yes, Syd, I should say I do. But I only know it in Latin, and I don't wanna bore everyone here.

Sydnee: It makes you pee. [chuckles] No, but that was good. I'm very proud of you.

Justin: Thanks.

Sydnee: But uh, people—

Justin: You are being very patronizing right now, but...

Sydnee: [laughs] The people would notice that if you took—if you ate chili peppers, or especially if you apply some sort of paste made out of peppers topically, somewhere on your skin, that after multiple times you would start

to not feel the burning sensation. And so they began to theorize that if you keep applying it, you'll become, like, desensitized to pain.

So those were the initial ideas of why this might be medicine, is that if you keep applying this substance to yourself, we could eliminate pain. You could be invincible... I don't know, you could get stabbed or whatever—

Justin: So like, it would toughen you up? Or you mean like, literally, it would like, desensitize your...

Sydnee: You would not feel pain anymore.

Justin: Okay.

Sydnee: I mean, they didn't—they were—it wasn't, like, an understanding of the sensory processes that were happening, it was just like, "You keep applying it to your skin, and eventually no pain."

Which is interesting, because this is actually kind of similar to how it does work in some medical applications today, which we'll get to.

Justin: Whoa!

Sydnee: Yeah. But they just observe this. The other ways that it was used medicinally was to induce sweating. [chuckles] Because these were parts of the world that traditionally were hot, and so sweating was good, you're getting rid of excess heat, and so you would—if it's like, "Well, I'm feeling really hot," eat a chili pepper, you'll get hotter, [chuckles] you'll sweat, and you'll get better.

Justin: And that's true.

Sydnee: No, it's just something that they did.

Justin: Oh, got it.

Sydnee: [chuckles] In addition, there were some uses that probably were a little more magically-based, which were uh—new babies' feet were often rubbed with chili peppers.

Justin: "Hey, welcome to Earth!"

[audience laughs]

Justin: "Welcome to Earth! It's really good here, I think you're gonna love it."

Sydnee: This was thought to be good luck. The—and I mean, you're also—like, you're toughening them up.

Justin: They knew what it did, though!

Sydnee: You're preparing them for the world!

Justin: It's not like—it's not like, "We found you in the pumpkin patch." Like, it burns, and they rubbed it on the babies' feet! That's cold. I'm sorry, that's just mean.

Sydnee: I was also, sometimes, be burned at funerals. You would burn, like, a big pile of chili peppers at a funeral to create a really noxious, awful smoke that would ward off evil spirits, and also I guess... everybody at the funeral, 'cause... that's really uncomfortable, if you've got, like... chili pepper smoke in your face.

Justin: Yeah, like, that day's hard enough.

Sydnee: It's—it spread because of Christopher Columbus, who observed... yeah.

Justin: [sarcastically] Great.

Sydnee: I know. I'm not—I'm not paying tribute...

Justin: So he did do *something*.

Sydnee: ... I'm just saying, like, he spread the chili pepper around. So he tried it, and he actually thought it was a lot like something called a long pepper, that was native to Southeast Asia that was used for a lot of cuisine already. Like, you could get sometimes in Europe, that was not—it was rare, and it was exciting, and it was spicy for other reasons. And he thought it was similar, so he called it a pepper, because it reminded him of this other pepper.

Justin: Huh.

Sydnee: Which is why it's...

Justin: I guess my man Christopher Columbus had kind of a habit of doing this, huh? Just kinda calling stuff whatever he sort of felt like it reminded him of!

Sydnee: [laughs]

Justin: "Your name's Darla. You look like my aunt Darla. You're Darla now."

"Okay, Chris. My name's Bethany, but fine, I guess."

Sydnee: "No, I showed up, here, and I decided that your name was Darla, so... "

Justin: "Yeah! I thought I was in India, so you're an Indian, right?"

Okay, cool. Bye.

Sydnee: Peppers.

Justin: Peppers. No, they're not—they're *peppers*.

Sydnee: But they did—they did, as a result, spread back to the Old World, and they were actually a lot easier to grow, and so they kind of overtook the use of the long pepper, which you don't find as often in cuisines, it was just

easier to grow chili peppers, and you can grow all kinds of different varieties, and so it became very popular throughout the world.

And use as medicine became very popular throughout the world, as well. Everybody with the same idea: one, observing other people using it medicinally, and then two, "It burns, it must be good for me." So you can find mention of capsaicin or chili pepper extract—usually, like, "cayenne" is what they would've called it in the world. We're talking about the same thing. All these words are being used interchangeably in a lot of old pharmacopoeias. It's chilis, it's cayenne, it's the spicy stuff.

So a lot of capsaicin extracts would be put with alcohol, and you'd make these little tinctures of alcohol. And you could use it mainly for topical, again, applications. So if you have some kind of pain, they would use it—what was called a counter irritant.

The idea of a counter irritant is that... let's say that you got, like, a really awful wound, for some reason. I don't know, you were out doing something dumb and you fell and you hurt yourself. You have a really awful wound on your arm, it hurts. A great idea would be to use a counter irritant that will make you hurt worse, 'cause then you don't think about the pain. [chuckles]

Justin: Wow. Things were rough back then, huh? Just from like, a... medical perspective.

Sydnee: Yeah, well, it would distract you, and then the other thought was, it would draw the bad humors away to this other site, and it would draw inflammation. We didn't know what inflammation was, but you know, it would draw it away, and so it was often used as a counter irritant because you'd put it on your skin, and it would burn, and you'd be like, "Okay, now my other wound is gonna be much better, because my skin burns."

Justin: Humors aren't real, by the way. Some people who don't regularly listen to our show might be here, so Sydnee just kind of threw out the term "humors" as if they're something that doctors are still into. Humors are not a thing anymore. Just so you know.

Sydnee: No.

Justin: We're very used to talking about humors. They come up a lot. That doesn't make it more real.

Sydnee: Yes, the—the belief was that there are four humors that you have to keep in balance, and that's why you get so much of medicine that's like, something that makes you puke or makes you poop or makes you pee, it was just to balance out your humors. We're just trying to get rid of one, or give you more of one, or whatever. That's why we bled everybody. Obviously, that was wrong. [chuckles] We were all wrong.

Um, and in addition, after you put this on your skin, it would make it red and swollen, and again, "So it must be working, because now your skin is red and swollen, so there you go."

Justin: "Did something. I don't know."

[theme music, "Medicines" by The Taxpayers, plays]

Sydnee: As it—as it spread throughout the world, it expanded to other ailments. As I said, pain was the biggest application for it, but you also found places where it was used to stimulate digestion in the Caribbean, so it was thought, like, you eat a little bit of the spicy stuff, or take a little bit of this tincture at the end of the meal, and you would digest your food faster. In China, it was used for pain relief, but also again for stomach issues. Which is always so weird to me, to think about, like, "Oh, my stomach's upset. I need some chili."

Justin: Yeah, that's not... not the route you wanna go down.

Sydnee: Um, in Japan, you can find it—even to this day, and—you know those foot detoxifying pads? You ever seen those on the internet, that you're supposed to apply to your feet at night, and you take them off the next morning, and they're dirty, and it's a sign that they detoxified your body? ... Yes, you have oily feet, and that's it. They're not really detoxifying your body. Some of them do have capsaicin in them, and have for a long time. That doesn't make them work better, 'cause—

Justin: No, they're still fake, everybody. Just 'cause they have something in them...

Sydnee: It was also a very popular, uh, toothache remedy in the UK. So they would have little drops of cayenne to put on your tooth, if it hurt.

Justin: And then... we don't—listen, we don't have a third step for you. We just—your tooth hurts, and we're gonna put this painful juice on it. But after that, yeah, I mean, anybody's guess at that point. We actually don't know what happens after—we haven't thought that far through yet.

Sydnee: In the—in the US, it was a big—herbalists, early herbalists, were a big fan of capsaicin. And Samuel Thomson was one of the leading herbalists in the early days of the United States, and he popularized it for anything that was considered a "cold" illness. There were certain diseases that were thought of as "cold" diseases, so we would try to treat you with things that were warming to fix them. And then "warm" diseases, we would treat you with things that make you cold to treat them. Again, none of that was real, but that was the thought process, so this was thought to be a warming herb.

He—he thought most illnesses—Samuel Thomson thought most illnesses were the result of coldness, so you can see why cayenne would be a very popular choice for him, because then it'll warm you up. So he recommended cayenne, steam baths, or anything, again, that would make you puke or poop.

Those were his biggest—his biggest suggestions. Cayenne was his second favorite herb, only because his first favorite, lobelia, is really great at making you throw up.

Justin: Great.

Sydnee: So he usually recommended lobelia first...

Justin: Mm-hm.

Sydnee: ... for puking, and then second, use some cayenne, 'cause it'll warm you up. And it could treat cold diseases, like any kind of upper respiratory infection – flus, pneumonias, any kind of respiratory ailment was thought to be something cold. And so cayenne would help with that.

And then later, it was expanded to use for things like ulcers. Skin ulcers, cayenne was commonly used for. And heart disease, as time went on. It was a very popular, "Well, if you have a bad heart, take some cayenne."

Justin: [sighs] Yeah, I mean...

[scattered audience laughter]

Justin: I guess it was before—I'm about to bloviate for a second, sweetheart, so if you wanna drink some water... I need you to stay hydrated.

Sydnee: Okay.

Justin: Okay. Go ahead.

So like, do you think that doctors back then ever looked somebody dead in the eye, and said, "Listen, I appreciate you coming to me, and it means a lot, your trust in me. I should warn you that – and you know this – medicine hasn't been invented yet, right? So everything in here is gonna be a lot more challenging, physically and spiritually, and... they won't invent medicine for a while, and I don't think you're gonna see it, so just... I'm just gonna go crazy here, okay?"

[audience laughs]

Justin: "Just gonna take you on a freeform jazz odyssey... "

[audience laughs]

Justin: "... of different poking and prodding and lying, just lying to you. 'Cause we don't have medicine yet. But check back once medicine gets

invented, 'cause you're just gonna go... gaga for it. And it's just gonna—you'll see, it's weird—the weirdest thing is—"

"Now, is that another—"

"No. Here's the wild thing. It does stuff! That's the big thing with medicine that they're working on right now. When it's invented, it actually affects... things... and makes you better, so we're trying."

[scattered audience laughter]

Sydnee: I hate to tell you this, we still get it wrong sometimes.

[pause]

Sydnee: [laughs]

Justin: I mean, it works... better than lying, and—

Sydnee: Okay, it works better than this.

Justin: It works better than wishes.

[audience laughs]

Justin: And honey. Which is basically all of medicine at this point.

Sydnee: It really is—on our show, we talk about medical history a lot, and we always get to the heroic era of medicine, which is my favorite era, because it was basically like, "Look, we don't understand anything. We don't know how to fix anything. We don't know why people are sick. Whatever we do is better than nothing. Just throw everything at patients. Do every surgery you can think of. Yeah, cut that off. Yes, open that up. Throw that on 'em. I don't know, make 'em drink it. Shoot 'em full of that, too." That's my favorite era of medicine.

Justin: Yeah.

Sydnee: It was really just like—eventually, people went, "Ethics? No?"

Justin: It's the—it's the—

Sydnee: "Stop killing people?"

Justin: It's the Hail Mary of medicine. It's like, "Listen, we tried stuff for thousands of years. We have *nothing*. We're just gonna try it all." Hail Mary? Where my jocks at? Okay.

[audience laughs]

Justin: Sydnee, go ahead. [laughs]

Sydnee: [laughs] Um, as far back as 1878, capsaicin was actually—the active ingredient was actually isolated in a lab, and studied, and—we actually—you see this trend in medicine, and I—probably—I study medicine, but other sciences too – there were smart people who figured out, Andre Hodges, who figured out... how capsaicin worked on sensory nerves. All the way back in the 1800s, which is really cool. And then, it was just like, lost. He wrote it down, and everybody went, "Whatever," and moved on, and kept saying, like, "I don't know, it burns your skin, it's really cool," and then we forgot about... how it really worked.

Justin: [laughs]

Sydnee: And then later in the 1900s, we did more research, and then we relearned this thing that we already had known, and that's when we started to see that this concept of desensitization to pain... actually is somewhat... true.

So how does this work? Capsaicin induces your nerves to—release something called Substance P, which is a neurotransmitter that's released in certain kinds of pain, usually chronic pain. So not like, "I put my hand on a hot stove," pain. Pain like arthritis pain. Stuff that bothers you every single day for a long time.

So this capsaicin will stimulate the release of this substance, just like chronic pain would, until like, you burn yourself out. You release so much of it, you deplete your nerves, and you don't have any. And so then you have less of this chronic pain.

So capsaicin actually really can, to some degree – not completely eliminate, but can some degree – help alleviate chronic pains, like neuropathic pain, nerve kind of pain that like, diabetics, for instance, often get in their feet and hands. Arthritis pain.

It's not so good for quick pains, like you wouldn't wanna use it, again, because you chopped your finger off or something like that. But for these more chronic pains, it actually does do something.

Justin: If you chop your finger off, there are a few other things you should do first.

Sydnee: [chuckles]

Justin: I mean, definitely try to eat something spicy, but you are gonna wanna find the finger? First? That's one.

Sydnee: [through laughter] "Give me a jalapeño!"

Justin: "Quick! A jalapeño, quick!"

Sydnee: [laughs] No. [laughs] But we did—we began to understand that, which was really cool, and we begin to investigate other things that haven't really yielded as much evidence. Things like exactly how does it work on the stomach, what is the effect on the GI system, is it good, is it bad, does it help, does it—you know. And weight loss... it's been studied for weight loss for a really long time.

They also figured out that it lowers the body temperature in dogs. I don't know. There's that fact for you.

[scattered audience laughter]

Sydnee: [laughs] I always wonder, like, who did that study? Who was like, "I wonder what it does to a dog"?

Justin: I wish I could've been there when they told the dog. "Hey, good news! Remember when we had you eat, like, a lot of spicy food?"

"[gruff voice] Yeah?"

[audience laughs]

Justin: "[normally] It lowers your body temperature!"

"[gruff voice] Uh, okay?"

[audience laughs]

Sydnee: [laughs] I mean, you have to imagine, like, as they set up that study, they gave the capsaicin, whatever, they gave the dog some chili peppers, and then they watched it eat it, and thought, "Should we... take its temperature? I don't know. What do you wanna do?"

Justin: "How much uh... do we let him... eat? Before it does something?"

[scattered audience laughter]

Sydnee: Also, how spicy were they? Did you have to coax the dogs into eating—'cause if it were me, I'd be like, "No, I'm good."

Justin: Also, I do wanna mention, that's why they call it a chili dog.

[scatter audience laughter, clapping]

Sydnee: Don't clap for that.

Justin: [chuckles]

[audience clapping loudly]

Sydnee: [sighs] So—

[audience laughs]

Sydnee: No. In a—in addition to these medicinal uses for capsaicin, because it is, as I mentioned, an irritant, and it can make you uncomfortable, it has also been used as a weapon over time.

Justin: Nice! Now we're getting somewhere!

Sydnee: Um, as I mentioned, we have accounts of people burning chili peppers to create these, like, chili pepper smoke, you know, like, weaponized smoke, basically, that would really irritate your airways, and could even constrict your airways if you breathed it in, so it was a really good kind of—so it's like a chemical weapon kind of thing.

And we also see accounts of that being used among, like, ancient Chinese police, as well. So it was known to be an irritant, and then of course, pepper spray.

Justin: Sure.

Sydnee: So, yeah. It's also weaponized. And it's also fair to say about capsaicin, that it does have – and you'll see this touted as way more than what it is – but it does have some antimicrobial properties. There are things about capsaicin that inhibits the growth of bacteria, which is cool, but don't get carried away. The next time the way you have a urinary tract infection, please don't go eat chili [chuckles] instead of going to the doctor.

Justin: I mean, you *can*... I mean, you can also eat chili.

Sydnee: But—yeah, on your way to the doctor, please.

Justin: On your way—don't eat chili on the way to the doctor! That's unsafe driving, okay?

Sydnee: [laughs] Swing through Wendy's afterwards and get your chili.

Justin: Yeah!

Sydnee: No, but it actually does help to inhibit the growth of bacteria, so that's one theory as to why if you look at how spicy some ancient cultures would make their food, it probably helped in food preservation. So you didn't have refrigeration yet, so you can probably put a ton of chili peppers in there, and the food would stay fresh longer. That's great, but it's not gonna—as far as we know, it doesn't kill bacteria in the human body when you have, like, pneumonia or something like that. You still need to, again, go to the doctor.

Like I said, today, we do use capsaicin for pain relief. There are capsaicin creams that are available. And generally, it's for these kinds of chronic pains that we talked about. Things like neuropathic pain, or arthritis pain, that kind of thing. And again, I don't wanna overstate it. I'm not saying it completely eliminations these pains and eliminates the need for any other kind of medication, but it can help.

Um, they're doing research, especially to weight loss, but again, I wouldn't get too excited about it. So far, all of the actually blinded studies properly done haven't really shown a big effect.

It's not dangerous. If you really like chilis, go for it. But there haven't been a huge weight loss as a result of eating chilis.

And they're also investigating—the long pepper that I mentioned before, has shown in some studies some—that there are compounds in it that inhibit the growth of tumor cells, so then people have thought, "Well, is that true for chili peppers as well?" So like, they've done some studies on that, but this is all done in labs. There's no proof that eating chilis reduces your risk of cancer at this point. Again, I'm not trying to discourage you from eating chilis, but don't—you know, I never want to overstate what they can do.

Justin: Right.

Sydnee: And don't use that instead of going to the doctor.

All that aside, it is still—herbalists still really value cayenne as one of their kind of main herbs. I read over and over again that if you can only master the use of one herb in your life, cayenne is the one to master. I read this one quote, [laughs] "If I were allowed only one emergency herbal medicine, it would be cayenne tincture." [laughs] Because it stimulates—

Justin: Emergency herbal medicine.

[audience laughs]

Sydnee: It stimulates circulation through the entire body. When the Venus structure becomes filled with mucus, the blood thickens, and has a harder time circulating, and cayenne will move the blood like no other.

Now, there's problems here. [laughs]

Justin: Let me start with "Emergency herbal medicine."

[audience laughs]

Sydnee: And you—and on our show, we often say that cure-alls cure nothing, and I think that's an important thing to remember. If you see somebody trying to convince you that *anything*, any medicine, whether it be herbal or, you know, what we think of as traditional medicine, that it will fix all of your problems. That's probably not true. And today, you will find cayenne or capsaicin or chilis uh, listed as a cure for pain, as an appetite suppressant, as an appetite stimulant, for circulatory and metabolic stimulation. It's prescribed for upper respiratory infections, dyspepsia, colic, flatulence, arthritis, rheumatism, low back pain, sore throat, heart disease, and muscle aches. That's a lot, guys.

Justin: Mm... That's a lot of things, huh? For spicy powder to do... seems like a lot of things.

Sydnee: They also advise—it's also advised that if you think you're having a heart attack, you should eat some chilis and it will stop the heart attack. And if you have a wound that's open and won't stop bleeding, you should dump some cayenne on it.

[audience groans]

Justin: Oh, no!

Sydnee: And it will stop bleeding. And if that wasn't enough to convince you [laughs]... You can take a tablespoon of cayenne and a tablespoon of olive oil, and you can mix it all together, and dump it on your head, and your hair will grow back. So...

[audience laughs]

Sydnee: There you go.

[audience laughs]

Justin: I thought for a second you were gonna say, "And rub it on a steak." Like, okay, great! Cool! Good ending!

Uh, anyway, folks, thank you so much, to—for having us. Thank you to the uh, the fine folks in the Yeager program.

Sydnee: Yeah, thank you all. This was really exciting for me. The Yeager program meant so much to me. It was—I can't tell you how many ways it changed my life and gave me so many opportunities, so this was really an honor, to be back and be parta symposium. So thank you all.

Justin: And uh, thank you to you all for coming. That is gonna do it for us for this week. Uh, thanks to The Taxpayers for the use of their song, "Medicines," it's the intro and outro of our program. And thank you to you one last time.

Sydnee: Yeah, thank you for coming.

Justin: That's gonna do it for us. So until next week, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

[audience cheers]

[theme music, "Medicines" by The Taxpayers, plays and ends]

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