

Sawbones 363: St. John's Wort

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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: What a thrill it is to be here, Syd. I'm so excited to be recording this episode with you.

Sydnee: I am too. Except the weather is starting to get nice again outside, so I do... can we start recording outside, or will that interfere—

Justin: You wanna do it out on the quad? [laughs] "Can I record out on the quad today?"

Sydnee: "Hey, hey prof?"

Justin: "Hey prof, can we do our podcast out on the quad?" Because the problem is somebody starts to do the devil sticks three feet from you, you get a bunch of [tapping sounds] in the mics the whole time. That's not pleasant.

Sydnee: That's true.

Justin: You get somebody crooning Cat's in the Cradle five feet away from you, no thanks.

Sydnee: Well, and I have to imagine that we're like hidden in this tiny room in our house with all of this padding on the walls for a reason.

Justin: Yes.

Sydnee: Some sort of sound-related...

Justin: Yes.

Sydnee: Like, quality reason. And not just— this is not just like, your design aesthetic.

Justin: No. I have— no, they're foam. They're very important scientific purpose that I definitely would notice the absence of, were these sound panels not here. Definitely.

Sydnee: Okay. So that takes outside..

Justin: Know exactly what they're doing, basically.

Sydnee: Out of the equation.

Justin: I wrote a book about podcasting, I don't know if you know.

Sydnee: [laughs]

Justin: I wrote the book. [laughs]

Sydnee: That's— okay. Well, Justin, I have a topic this week that I'm kinda surprised we've never done before.

Justin: Yeah, I had heard of this one for a long time. So it was, you know, I feel like at this point got a lot of the low-hanging fruit, if you will.

Sydnee: So, I wanna thank Kayla for recommending this topic because I don't know— again, I don't know why we've never talked about it before. It's a very common old remedy that is still in use today.

Justin: And it's made of warts.

Sydnee: No.

Justin: Oh.

Sydnee: But it is called St. John's Wort.

Justin: Yeah, that's confusing. A lot of people are actually still confused about the difference between those.

Sydnee: I'm gonna tell you what the word wort means. That's part of it.

Justin: Thank God.

Sydnee: That's not— but that's later. That's in a minute.

Justin: I won't get ahead.

Sydnee: It's not that much later. Don't get too excited, it's just, it is something I looked into because I realized that a lot of things are called wort, but we don't mean wart like W-A-R-T, like warts, we mean W-O-R-T, wort. And you know, if you use a word enough, you should probably know what it means.

Justin: That's fair. I've, in my experience, if you use a word a lot without knowing what it means, uh, it can get you some in some hot water. [laughs] Maybe you've been saying something pretty stupid for a decade. So, you know.

Sydnee: Now, if you use a word a lot that you know what it means but you mispronounce it regularly, that just means you read a lot. That's always been my excuse. [laughs]

Justin: Oh, I love that, yes. "I'm more of a reader than a speaker."

Sydnee: "Than a talker to other humans." So, this is, like I said, one of the oldest and most common, I would think, herbal prescriptions. Used globally, certainly. Here in the US as well. There is actually a lot more use of it as a standard treatment of sorts, a standard therapy.

Justin: What does that mean?

Sydnee: Here, you would consider it like an alternative medicine, an herbal supplement. It's regulated as a supplement. It is not regulated as a...

Justin: Medicine.

Sydnee: A medicine. A drug. A cure. A treatment. It is not like that. Outside the US, it's not necessarily regarded that way, but here, it's a supplement.

Justin: It's seen more as a medicine?

Sydnee: Yes, exactly. Over time, the diagnoses for which you could use St. John's Wort have changed dramatically.

Justin: Hmm!

Sydnee: It was, at one point, and we'll get into this, somewhat of a cure-all. These days we don't really consider it that, whether you're using it as an alternative medicine like a supplement here, or somewhere else in the world, a lot of European countries it would be a lot more standard to use, either way. We sort of targeted what we use it for.

Justin: Long-time Sawbones listeners like myself probably have their, uh, their phony-baloney alarms going off pretty crazy right now.

Sydnee: Well, I don't know that that's necessarily true because so many people are familiar with it.

Justin: Yeah. Yeah, but people are familiar with a lot of things. Like colloidal silver? Let me see how that turned out.

Sydnee: Well, okay.

Justin: [laughs]

Sydnee: Don't use colloidal silver. This one's a little different.

Justin: Okay.

Sydnee: This one's a little different. Hypericum perforatum is the name, the scientific name—

Justin: Bless you.

Sydnee: [laughs] Of the plant. This comes from a couple Greek roots. Hyper and eikon meaning, uh, over and either image or apparition, so over an image, over an apparition. It's because of the power that the plant was thought to have for a long time.

Justin: Okay.

Sydnee: It was thought that hypericum had this sort of magical quality that allowed it to ward off evil spirits or demons or, you know, bad stuff.

Justin: Okay.

Sydnee: Which is part of why I think there was a hesitance to accept it. Because, we've talked about on the show, there are other, like, plants that we realized were medicine, right?

Justin: Sure, yeah.

Sydnee: That happens. I mean, medicine's gotta come from somewhere.

Justin: Advil tree?

Sydnee: Sometimes it's a lab, sometimes it's a, you know, field. A lovely meadow. [laughs]

Justin: A field of Advil trees.

Sydnee: No, not a field of Advil trees. So, there was this sort of mystical connection with it. That it had this ability to protect you in some way. Part of it, and we'll get into this, and I think this probably does look magical. I've never had, I've never seen a St. John's Wort plant in the wild – I guess you can, like you can find them in the wild.

Justin: You may have seen one in the wild, I don't know. Would you recognize it? Are you...

Sydnee: I've looked at pictures of it now, you can—

Justin: So in hindsight you mean, you haven't seen? Alright.

Sydnee: Yeah. If I did, I didn't know that's what it was. But I don't recognize it around here. It could— one place that I read that it could grow are like, abandoned mining areas.

Justin: Seems like we might have it.

Sydnee: It's gotta be here, I mean it has to be here.

Justin: Yeah. Not a lot of that in Huntington, but still.

Sydnee: It's all over. Anywhere that's temperate, it's there. Like, it's all over the place. It's an invasive species in most of the planet now. That's not where it started, but nowadays you can see it a lot of places. The perforatum part of the name comes from these little translucent spots you can see if you hold the leaf up, so it looks like it's been perforated, it looks like it's got little holes in it. But the mystical part, in part, might be

because if you take the flowers and crush them they give off this very dark red sort of oil or juice or something. And that looks... cool.

Justin: Like blood?

Sydnee: Pretty metal, I guess. [laughs]

Justin: [laughs]

Sydnee: The name, the colloquial St. John's Wort was given to it by Europeans who noted that the flowers tended to bloom around June 24th, which is the feast day of St. John the Baptist.

Justin: Mm.

Sydnee: That is at least one thought as to how it transitioned from hypericum perforatum, which you know, of course, everybody was—

Justin: They probably didn't lead with that, yeah. [laughs]

Sydnee: To St. John's Wort. And there are a bunch of other names, but this is, you know, nowadays, St. John's Wort is definitely the one that stuck.

Justin: I would guess it did not translate— transition from hyp— hyp— hypericum perforatum. It probably transitioned from "that plant with the weird flowers" to St. John's Wort. [laughs]

Sydnee: [laughs] Uh, there is also a legend about the name that maybe it is because— so, like I said, you can take the flowers and you can crush them and let out this sort of red juice. And like, if you just put them in oil eventually it will just sort of turn the oil red, and that was something you used to do as like, um, you'd want to infuse like olive oil with it. And so, you would just put the flowers in olive oil and then after a certain number of days, the oil turns red and you know it's in there. And supposedly the first time that happened was on August 29th, which I guess is the day that John the Baptist was beheaded?

Justin: Okay. Okay, sure.

Sydnee: I'm looking at you cause I've... like—

Justin: Like I'm supposed to know because I was Baptist for a while?

Sydnee: And Baptist is in the name, so I thought maybe...

Justin: Okay. You thought maybe I'd be plugged into John the Baptist.

Sydnee: Mm hmm.

Justin: I mean I know some stuff about John the Baptist, but none of it relating to his warts.

Sydnee: If his name was John the Raised Catholic, you know, you could look at me.

Justin: That's fair.

Sydnee: [laughs] So, anyway, magical stuff.

Justin: I don't know but I—

Sydnee: I think though, the timing where it blooms is the most likely, you know.

Justin: Probably. It sounds more logical.

Sydnee: Right. But it does do that cool thing. Wort is an old word for plant.

Justin: ... Oh man!

Sydnee: Yes. It comes from the old English 'wyr't', W-Y-R-T, which means plant.

Justin: Everybody was gearing up for some classic Sawbones dinner party trivia.

Sydnee: No.

Justin: And what we get is wort means plant back in old times.

Sydnee: It goes, the, so you know there's a lot of— there's some words in English and German that have common roots and overlap. The German word wurtiz, which is from the word wurzel, which means root, and then wurtiz and then wyr't, and then wort.

Justin: Wort means plant.

Sydnee: There you go. Now you have wort—

Justin: This probably makes a lot more sense to you, a person who's looking at it on a page, than someone who is listening to you say it. [laughs] It kinda sounds like you're—

Sydnee: It was German and then old English and now it's wort and it means plant.

Justin: Got it. Done.

Sydnee: Like I said, it was native to parts of Europe and some parts of Asia, but then it was transplanted all over the world. A long time ago. I mean, it's been here, I think the first time it was noted in the US was the late 1700s.

Justin: It's a good occasion to use transplant, because that is 100% what is happening when you are moving a plant from place to place. [laughs] I love that.

Sydnee: Um, and it was— everywhere it went, it was sort of prized for it's perceived medicinal benefits. I mean, everybody pretty much agreed, like, "This is a great medicine. I love this plant."

Justin: "Of the medicines we have available to us, this is top ten!"

Sydnee: "This is a great one." There are two compounds in it that are mainly responsible for the activity that it has. Something called hypericin and then hyperforin. So there are two, like, active compounds in it that can do stuff in your body. There's a lot of other stuff that might have effects, but those are the main two things, right?

And that's just important to know, if you're gonna have something that like, is gonna be used as an herbal supplement, it needs to actually contain the things from the plant that actually do something, you know? So we're talking about a whole plant. That's different than the idea of like, a synthesized chemical that you take because you know exactly what is in that pill or that oral suspension or whatever. We're just talking about sort of crushing a flower and eating it, you know?

Justin: [laughs]

Sydnee: Hippocrates spoke of uses for hypericum. He mainly focused on things like anxiety as well as like, inflammation in general. It could also be applied topically. So, you could eat it or you know, take it as part or like an oral preparation or you could just rub it on you.

Justin: So he thought of it as kind of like CBD oil. [laughs]

Sydnee: [laughs] Yeah, yeah. Kind a like that. Dioscorides also advised its use as a diuretic and for wound healing. Galen said it was good for that kind of stuff as well. So, you see a lot of, um, a lot of rubbing it on yourself. But that's not unusual with some of these herbal preparations of old, that you would, I don't know, put it in some wine and drink it but then also maybe make it into a tincture and yeah. I mean... or an ointment. Pliny the Elder wrote—

Justin: Yes!

Sydnee: Yes. I know, I've missed him. We haven't talked about him.

Justin: Been too long—

Sydnee: We haven't talked about good old Pliny—

Justin: Since we've checked in.

Sydnee: For a while. He wrote of several different uses for it, uh, it was good as a diuretic, again. Something that makes you pee. A lot of people agreed it could make you pee, but it wouldn't make you poop, it would stop that. It would stop up the diarrhea.

Justin: Oh...

Sydnee: So, that's kinda nice. [laughs]

Justin: It would turn the poop into pee, basically. Chemically speaking.

Sydnee: Mm... no...

Justin: It would turn the poop into pee so you would have more pee.

Sydnee: No... in addition, he said you should mix it with wine—

Justin: Period.

Sydnee: If you have a bladder problem.

Justin: End of sentence. [laughs]

Sydnee: [laughs] Pliny always said you should mix it with wine, though. Pliny was also like, "And if you're gonna take it, you might as well."

Justin: "Listen, you're not feeling great, just go ahead and hook yourself up."

Sydnee: Might as well take it with some wine. You could also, so... [laughs] you could use it to make you, like I said, make you pee, or you could use it to make you throw up. That was something that um...

Justin: [laughs]

Sydnee: In hydromel or in wine or in water. He thought it was good—

Justin: I feel like that's such a wide use case. Like, this might make me pee and this might make me throw up. [laughs]

Sydnee: He said it was good for getting rid of bile. Because again, we're talking four humors. So like, sometimes you gotta balance them out and get rid of some bile.

It was good for sciatica. And then he said also, like, you can prepare it different ways to rub it on yourself for gout, for burns, for wounds and if you're bleeding. You could just rub it on there and stop the bleeding.

So many things, again, were recommended to stop bleeding. And I wonder if it was just like, I mean, pressure is the number one thing to do when something's bleeding. So, I guess whatever goop on your hand when you apply pressure, maybe you're just gonna think it was the goop?

Justin: Maybe it was the goop.

Sydnee: Maybe it was the goop. But it was your hand.

Justin: Yeah. You know, it's a shame we didn't just try that first. Because pressure, we already had. I mean, we have that, it's pretty easy, you don't have to get it from a bush or something. Shoulda just led with that. Try that first.

Sydnee: [laughs] But they had stuff on their hands.

Justin: They had goop.

Sydnee: Yeah. Um, Celsus would also later include it in some urinary-related sort of potions and things. And he credited it as being part of— we've talked about before, mithridates, famous all-poison antidote. Like, every poison cure. Theriac.

Justin: Yes, that sounds familiar.

Sydnee: We've talked about this before.

Justin: Yes, I remember this.

Sydnee: Because you knew it from— you'd heard of it in like, games.

Justin: Yeah...

Sydnee: Your games you play. About magic.

Justin: Yes. The games I play about magic, yes.

Sydnee: Yes. You'd heard about it there. But it was sort of like a famous mythical potion that supposedly could, you know, be used to cure or ward off or make you able to tolerate any sort of poison. And hypericum was supposedly one of the many— I don't know that that's really, that makes it a stand-out. There were a lot of ingredients in that thing. Like, that was the whole thing. It was a big, giant thing.

Um, but then it continued to be something that rose to more prominence and we found more uses for throughout the middle ages. And I wanna tell you about that next.

Justin: Okay.

Sydnee: But before I do.

Justin: Mm hmm?

Sydnee: Let's go to the billing department.

Justin: Let's go.

[ad break]

Justin: Oh Syd, it's never a good time when we have to dig into the middle ages. The worst time for medicine. I know I ride the middle ages pretty hard, but I feel like it just doesn't get worse than the middle ages.

Sydnee: Oh, I don't— you're always so hard on the middle ages.

Justin: The classic arc has been— we're just about to make some headway and then everybody's like, "Let's try knights and stuff," and then thieftoms and whatever, and then we just stop medical progress, it all went backwards. The middle ages are the pits.

Sydnee: I mean, there have been more recent times in human history that I think you could probably also say that. Like, we were heading in a good direction and then collectively as humans we went, "Why don't we just stop and go backwards for a while and really regress and take up some really dumb stuff for a bit." [laughs]

Justin: There's an upstroke and a downstroke for sure in culture, two steps forward, one step back, I understand that.

Sydnee: Uh huh.

Justin: But never, I think, did we say, "You know, it has been an entire age – nay, several ages, since we have done anything good or worthwhile. And you know what, it's been so bad I don't even wanna call this, like, the Before or After, this is just the middle." [laughs] "These are the middle ages where we all just sorta chilled for a while and got worse and then we decided to try again later."

Sydnee: Listen, we just lived through 2020, so...

Justin: That was one year! These are ages! Entire ages! I don't even know how long an age is!

Sydnee: There were four rough years there, Justin. But anyway, uh, Paracelsus was a fan of the herb as well. Paracelsus of the very long name.

Justin: Yeah.

Sydnee: Remember that whole thing?

Justin: [laughs] Yeah.

Sydnee: Theophrastus was in there. Bombastus.

Justin: Paracelsus we talked about right after Celsus, which I always love, because Paracelsus—

Sydnee: He was next to Celsus.

Justin: Picked his name because he was like, “Me and Celsus...” [laughs]

Sydnee: Von Hohenheim was at the end, there.

Justin: “Yeah, that’s where I rank.”

Sydnee: I love that guy.

Justin: We sell that t-shirt, I think. We have a Paracelsus...

Sydnee: Yeah, we do. That’s probably why I remember.

Justin: T-shirt on McElroyMerch.com.

Sydnee: I may have pieced together enough of the name... I don’t know. It’s almost all there.

Justin: Maybe it sold out, I dunno. It was a great shirt.

Sydnee: He noted that it specifically— and this is something that would continue as a theme with this specific herb, that it has specific useful effects on mental health.

Justin: Hm.

Sydnee: The way he worded it, and this was in the 1500s, “Each physician should know that God has placed a great arcanum in the herb, just for the spirits and mad fantasies that drive people to despair.”

Justin: Wow.

Sydnee: That was his way of saying—

Justin: Pretty intense.

Sydnee: Yeah. Well, it was his way of saying this is good for depression.

Justin: Okay.

Sydnee: We just didn't— back, like, if you wrote that in a chart today, if you wrote that in a medical textbook, they wouldn't let you write medical textbooks.

Justin: No, you would be fired.

Sydnee: Yeah, you would be fired for that. We don't really talk like that anymore. Now, we say, "This medicine has been found useful in the treatment of depression". And so, he wrote specifically about depression, melancholy and over-excitation.

Justin: Hmm.

Sydnee: So, probably anxiety. Probably what he's trying to say. Not just like, you're excited. [laughs]

Justin: You're just like, "Ooh..."

Sydnee: You're just really—

Justin: "Woo! Woo! I'm too— I'm pumped! I need a medicine for this."

Sydnee: Not "I'm so excited, I'm so excited... I'm so scared."

Justin: Right.

Sydnee: Just, probably anxiety. Other physicians at the time would continue to use it for other things in addition to this, especially pain. St. John's Wort began to be prescribed for all sorts of different pain complaints. And again, wound healing.

A lot of history, it has been used— and that has been investigated since then for like, did it have some sort of maybe antibacterial properties or something, you know, antiviral properties? Something specifically that people kept using it for wound healing. And it's like a lot of these compounds where, I mean, if you put things in a petri dish, a lot of things can kill germs. But that doesn't necessarily mean it did that in the human body

Justin: I've been— I've actually taken a softer view on cure-alls that actually have an impact. Because I don't— I think that I used to think of it

as like, misdiagnosis, but really like, everything's so interconnected in the human body, especially with stuff like— I could definitely see it having an effect on like, for example, anxiety or depression, but it's treating something else, but like, that stress or that— whatever is cause— like, the two are connected.

You know what I mean? Like, treating one helps relieve the other, rather than it being misapplied. Now, keep in mind, I have no idea what St. John's Wort does actually do, if anything.

Sydnee: I'm gonna get to that.

Justin: Okay. I'm on pins and needles.

Sydnee: The plant is spreading across the globe at this point, as people are sailing—

Justin: Culturally, or just like, literally going all across the globe?

Sydnee: Well, it was physically being carried all over the globe and transplanted and grown and cultivated in different parts of the world, and as that happened, different regions, different cultures, different people would sort of bring it into their medical traditions and use it for different things.

It began to be used not just for things like anxiety and depression, but also for, again, as a diuretic, if you were bloated, for gastritis, there were more, like, sort of vegetable-based oil compounds that were made with it to be placed on things that were inflamed, like a hemorrhoid. You could use it for hemorrhoid. And then for more, you know, minor injuries like a burn or a cut or a sore or something.

There was also a lot of belief that it was good for, especially in Germany, for nerve damage, neuropathy, that kind of thing. And so, the topical application or taking it, you know, internally for that sort of nerve damage or pain or something was a very common use, as well.

It would become part of the traditional herbs that were used by cultures indigenous to the Americas as well, as it showed up here. Like I said, I think the first time that they found it in the U.S. was in like Pennsylvania sometime in the mid-1700s, and then it continued to grow and spread around here, and everywhere that it went. It's an invasive plant and it just does its own thing.

Justin: Like kudzu vine.

Sydnee: Yes. Except I don't think it has any medicinal...

Justin: That we know of!

Sydnee: Yeah. Man, remember when I tore a ton of that off the back of our house?

Justin: Yeah.

Sydnee: That was like a whole day.

Justin: I appreciate you doing that, by the way. I meant to tell you earlier.

Sydnee: [laughs] When we live— that was— yeah, we don't even live there anymore.

Justin: Yeah, but I meant to tell you earlier. I do appreciate you doing that.

Sydnee: I bet the people who live there now appreciate it.

Justin: Yeah!

Sydnee: Like many herbal medicines, especially in this country, I should say at this point, it began to fall out of favor in the 19th century as we turn more and more to, um, sort of a scientific, like an empiric tradition of medicine where if something's going to work, you have to be able to test and prove why and how and that it works in multiple people. And like, also separating the last vestiges of this sort of spiritual tradition of medicine from the scientific, physical, you know, literal world tradition of medicine.

Herbs like this, like St. John's Wort who— I mean, the name speaks to its sort of magical, mystical properties and these beliefs associated with it, and because of that herbs like this especially were discounted by a lot of physicians out of hand. Because, well, you know, the idea was, "The only reason... this is a folk medicine, the only reason people believe in it is because they think that it wards off magical spirits and all this kind of stuff." And so, things like that were dismissed by a lot of mainstream medical practitioners.

Justin: Right.

Sydnee: Now, in the U.S.— like I said, outside of the U.S., this wasn't always necessarily the case, especially for this medicine in Germany. There as a strong tradition of using it in Germany and this would spread to other parts of Europe.

But the eclectics in the U.S. really kept it alive. We talked about the eclectic medical tradition that really peaked in the late 1800s. It was sort of like in line with the Thomsonians and other alternative medicine traditions that basically looked at mainstream medicine and said, "You guys don't know what you're doing." Which was true in many cases.

Justin: Right. "We don't know what we're doing either, but were just gonna take a shot at it."

Sydnee: Well, and some of this was "The mainstream doctors don't know what they're doing, and the things they're doing are hurting and killing people." And those are all valid things to say.

Justin: Yeah, for sure.

Sydnee: So, this was more, like, "Let's try to do things that help people, again, without any sort of rigorous scientific effort, but maybe we won't try things that are so harsh." [laughs]

Justin: Yeah. That makes sense.

Sydnee: "Let's drink an herbal tea and worst case, it makes you, you know, have diarrhea or something." [laughs]

Justin: But that's the worst case. [laughs]

Sydnee: Which, compared to what some of the, you know, mainstream physicians at the time were doing...

Justin: Not bad.

Sydnee: You know, drilling holes in heads. It didn't seem as bad. Um, however, the eclectics kept it alive even though it had sort of these magical things, because they didn't mind that. That was also part of the eclectic thing, is we don't mind if it kinda has this magic thing to it. If it works, it works. You know. We're okay with that.

And so, like I said, it continued to be used here, mainly, again, for the things that it— I think the reasons that it stuck for these certain conditions is probably because they saw more effectiveness just, like, out there, person to person, for things like anxiety and depression. And in Europe it became a lot more standardized.

My understanding is that it would not be unusual for a patient who was being treated for one of those mood disorders to be on St. John's Wort. And I believe the production of, you know, what you're actually taking, the pill or tablet itself, is a lot more standardized as a result.

Justin: Mm, yeah that's a problem with herbals, I know.

Sydnee: Mm hmm. In the US, it is still considered, like I said, an herbal supplement, so it is not regulated in that same fashion that we would a prescription drug, so what you're getting in a pill, the way that it is made and, um, what it's compounded with and all those different things can be a lot, a lot more variable.

Now, even though— I'm gonna get into the actual, like, studies that have been done on it, because there are a lot of people on it here in the US, there are probably people listening who take this on a regular basis. Like many cure-alls, it has been tried for a lot of stuff that we've never really seen good solid evidence it works for.

As I mentioned, there was a lot of interest in it as some sort of antibacterial agent or antiviral agent, um... we've said this many times, a lot of things can kill something in a petri dish, that doesn't mean we can put it in a human body and it'll do the same thing. Although, we do have the advantage of knowing that St. John's Wort doesn't— it's not the same thing as bleach, right?

Justin: Where it's like, totally bad.

Sydnee: Yeah, where you can't put it in a human body because it'll also kill the human body. But it was— there were studies trying to say that it could cure cancer and you know, HIV, all the— the usual things. Any of those big, I hate to say it this way, but if it's a big-ticket diagnosis, one that the cure could come with—

Justin: One of the heavy hitters.

Sydnee: Well, that the cure could come with a lot of money and fame and also there are going to be a lot of people that are scared and willing to seek out alternatives because they might feel that they are out of other options, traditional mainstream options. You're always gonna find this kind of thing. So, it's been tried for a lot of different things, anti-inflammatory type purposes, and none of those studies have ever really shown anything interesting. But—

Justin: So what— but you've been hinting about the fact that it might actually have some effect on something.

Sydnee: So, the one area in which it has been much more rigorously tested, and again, not to the level of a lot of the prescription drugs we use in this country, but it has been more rigorously tested, is when it comes to anxiety and depression. And specifically depression. That is the main area where St. John's Wort has been tested.

In those trials, the results have been kinda mixed. There was one in 2011 where they sort of compared it to a traditional, um, SSRI, that's a Selective Serotonin Reuptake Inhibitor, which is sort of the mainstay treatments we use for depression. So, they compared it to one of those medicines and basically, they found that nobody got any better. [laughs] The people on placebo, the people on the SSRI, the people on St. John's Wort, there was no difference.

Justin: Okay.

Sydnee: So, they didn't find any of it effective. So, that was an interesting study.

Justin: Whoa, that's a— so they said that SSRIs weren't effective?

Sydnee: The SSRI— in this particular study, it was a 2011—

Justin: This is a wild study, I don't know.

Sydnee: It was a 73-person study.

Justin: Alright.

Sydnee: There you go. There was another one that was done—

Justin: Maybe it was just at a very depressing time—[laughs] it was in like the middle of 2016. It's like, "No, I don't feel better. Why would I feel better?"

Sydnee: [laughs] There was another one that was done, it was a bunch of data that was collected in 2002 and they finally analyzed it in 2012, and it suggested that it was similarly effective in effectiveness to an SSRI, a different one. A different antidepressant.

Justin: To be fair, that is what the first study said, too.

Sydnee: [laughs] They tried citalopram in the first study, they tried sertraline in the second. A 2008 much larger review of 29 studies from all over the place, so not just in the US now, they took— these were international studies.

Justin: Okay.

Sydnee: Uh, they said that they think it might be better than placebo and on the same level as some prescription antidepressants, from looking at these 29 studies. It was really interesting, because specifically studies in Germany showed them to be more effective than other places, which the question there, what you have to start asking is, one, there's a much longer tradition of it being used in Germany, so is it like—

Justin: Confirmation bias.

Sydnee: Well, and cultural acceptance of it, like, we know this is a treatment for depression here, we don't question that. But the other thing is the thing I mentioned. I wonder— I don't know from study to study, where they were getting their St. John's Wort. I mean, they're buying it somewhere. It's not like you would go grow the plants and crush them and, you know, yourself for the study.

Justin: [crosstalk] test that right, though?

Sydnee: Well, I don't know. I mean, it doesn't speak to that, that I'm reading. But it would be really interesting to see, is it maybe more effective in Germany because maybe they're using a more purified version of the plant. Of the actual active substrates of the plant. You know, not just like the whole plant with all the other crap that's in there that your body doesn't need.

And there is another study that was a little larger that said it was no more effective than placebo, that kinda threw a wrench in that. Anyway, this information, by the way, all comes from the National Center for Complimentary and Integrative Health. So, these are the people whose job it is to look at alternative and herbal things outside the mainstream of medicine and see where the evidence is.

Justin: They're pretty impartial?

Sydnee: Well, what I mean is, yes, they should be impartial, yes, but they also would be the first to say if something worked. These are not people who are just gonna naysay because it's an herbal med.

Justin: I gotcha.

Sydnee: You know? If the evidence is there, they say it. If it's not, they say it. So, pretty even-handed review from the people that are supposed to do these sorts of reviews. Basically, their bottom line is, it's not consistently effective for depression. Maybe it is for some people, but we can't consistently say that it is always effective for depression, is basically what they say. They don't recommend that you self-treat with it, because you can buy it over the counter, right, in this country.

Justin: Yeah, course.

Sydnee: So they don't recommend that if you think you're depressed or your doctor tells you you're depressed, that you just go buy some at the local drug store and take it on your own.

Justin: But that's what— but, it's not a controlled substance, right?

Sydnee: Yeah, but what they're saying is that depression is serious and you shouldn't just try to self-treat with something that we can't promise you would work. We would rath— we recommend that you continue to see professionals.

Justin: Okay.

Sydnee: You know, for treatment of depression. I mean, it's the same as anything. I mean, if I diagnosed a patient with hypertension and they said, "Okay, well I'm gonna go try to manage this on my own, bye," I would say, "I don't recommend that. Let's work together."

Justin: [laughs]

Sydnee: [laughs] "Let me help you, let's talk about how you're gonna manage it. Yes, of course, you are ultimately gonna manage it, but the counsel I could provide and the monitoring and such, will help you with this endeavor."

And it's the same for depression. Let's work together to do this, either as your physician or your counsellor or psychologist or whoever you're seeing. Their big point is "We don't recommend you just go try to handle your depression without seeking any sort of professional help."

Justin: Okay.

Sydnee: Which I think is good advice, right?

Justin: Yeah, that's reasonable.

Sydnee: Now, the other reason that they say this, though, is products in the U.S. that are sold like this, as I have mentioned, are not uniformly regulated. So, you might not be getting what you think you're getting. That's the other important point to just trying to self-treat with something like St. John's Wort. Even if you might be one of the people in whom it could be effective. Maybe it would be, if you are actually taking the right thing.

Justin: Maybe they're cutting it with baking soda or something like that.

Sydnee: Well, I mean, you say that in jest but, I mean, there have been plenty of studies. That was actually, the listener who recommended this topic, Kayla, that was one of the things that they sent along with their email, is that there have been studies that have shown that when we take over the counter herbal products in the U.S. and just test them to see, "Is the thing that's on the bottle actually in there?" Not always.

Justin: Oh, good.

Sydnee: Yeah, in this study they were able to authenticate about half of the products. [laughs]

Justin: [laughs]

Sydnee: That's not great.

Justin: Sure.

Sydnee: But one third also contained contaminants and fillers that were not listed.

Justin: Great. Even better.

Sydnee: And some of those can pose serious health risks.

Justin: That's BS, particularly with a brand that sounds healthy like Pure Life or True Leaf or something like that.

Sydnee: [laughs] It's really interesting, because what it speaks to is even if St. John's Wort may be an effective treatment for depression in a patient, the thing you're buying over the counter, you have— we just don't regulate it that way. You can't be reassured that you're actually buying something that one, will contain the active components of St. John's Wort and two, won't contain other possibly harmful contaminants. That's just the problem, and this is not me saying, "So don't ever use St. John's Wort," it's just you need to know you're getting the real thing.

Justin: Yeah.

Sydnee: Maybe in Germany it would be better. And the only other thing I'll throw out there, and this is really important to know about St. John's Wort, and this is true for any sort of, again, unregulated herbal supplement. It can interact with other medications you're on. We know it can do that. We have tested that. And specifically, it's broken down, the pathway that it uses is called Cytochrome P450—

Justin: Oh, one of the classics.

Sydnee: [laughs] It's a liver— it's a pathway through the liver that things are broken down, an enzymatic pathway that is used by a lot of medications that you might take. And specifically, the way that St. John's Wort interacts with Cytochrome P450 is it induces it, meaning it can make it go faster.

Justin: Oh, okay.

Sydnee: Make it break things down quicker and more efficiently, which—

Justin: Sounds good.

Sydnee: No.

Justin: No! Aah!

Sydnee: Because what will happen is it could decrease the blood levels of other medicines you're on, lower than what we want them to be.

Justin: Oh, cause your body's too busy with the St. John's Wort.

Sydnee: Because it breaks it down too fast. So, it makes you break down a medicine you need in your body faster than you should, and as a result you don't have the right levels of it. So, for instance, just some examples, it can decrease the effectiveness of birth control.

Justin: Oh no, that's a big one!

Sydnee: Yes. And so— and it can also affect the way that certain blood thinners like Warfarin, the levels of those in your body. So, you should never take this, or any herbal supplement, without talking to your doc about what else you're on and are there interactions. Cause these things are easy to look up and check, and this definitely can interact with other meds.

In addition, if you're already on antidepressants, it can negatively interact with those medications to increase your serotonin levels too high and you can get something called serotonin syndrome, which can be deadly.

So, the point is, St. John's Wort does appear to have clinical activity in the human body, and there have been some studies to suggest that it could help with depression. For sure, I'm not saying that that's not true. But the problem is, in the US, if you're just buying it at the drug store, you don't know that you're getting what they say you're getting.

Justin: It could be anything, yeah.

Sydnee: Yeah, for sure. You just don't know. Two, it can interact with other medications you're on, not for depression, so you really need to talk to, you know, your primary care provider about that first. And three, it can interact with other antidepressants you might be on. So whoever prescribes you those, you really need to talk to them about all that first. Don't take it and don't try to treat mental illness or any illness on your own without consulting with a professional, please.

Justin: Please.

Sydnee: That's never a good idea.

Justin: Or based on what you hear on a podcast.

Sydnee: No.

Justin: That probably goes without saying.

Sydnee: Well, that's why I always say go talk to your doctor.

Justin: Hey, thank you so much for listening to Sawbones. We hope you've enjoyed yourself. We sure have enjoyed being with you. Thanks to The Taxpayers for the use of their song "Medicines" as the intro and outro of our program. And thanks to you for listening, we sure appreciate it.

Oh, we got a book! It's on Amazon. It's the Sawbones book, now in paperback with expanded material. So, go get it.

Sydnee: I thought you were gonna say explosive material.

Justin: Explosive! Hard-hitting! Earth-shattering. Oh, Sydnee's got a TikTok. @SydneeMcElroy on TikTok.

Sydnee: Oh, you didn't have to... no...

Justin: Go follow Sydnee's TikTok, it's great.

Sydnee: Don't say that on here!

Justin: You'll love it. If you like Sawbones, you'll love Sydnee's TikTok.

Sydnee: This is a different Sydnee. [laughs]

Justin: [laughs] Thanks for listening. That's gonna do it for us. Until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

[theme music plays]

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