

Trichinosis

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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]

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: [much louder cheering]

Justin: About the same. That time it was about the same. Huh. That's cool.

Sydnee: I mean, it was pretty close.

Justin: It's about the same, that time.

Sydnee: It was pretty close.

Justin: We are... If you live in Huntington, West Virginia, and you want to see a concert, you're going to come to Cincinnati.

Audience: [laughs]

Justin: It's kind of like a home away from home.

Sydnee: Mm-hmm.

Justin: If you had concerts at your home.

Sydnee: That's true, that's true. If you had asked me, when I was a teenager, "What do you know about Cincinnati?" I would have said, "Bogart's?"

Justin: Bogart's.

Audience: [cheers]

Sydnee: That's where I saw a bunch of shows.

Justin: Jimmy Buffet plays at River Bend every year.

Sydnee: Jimmy Buffet.

Audience: [cheers]

Justin: It's where I facilitated Sydnee's dad meeting Jimmy Buffet and basically becoming basically the greatest son in law ever in the history of all time.

Sydnee: That's true.

Justin: No big deal. It's the Queen City, I don't need to tell you that.

Audience: [cheers]

Sydnee: And you didn't even mention the Smurf ice cream at King's Island.

Justin: Smurf ice cream at King's Island.

Audience: [cheers]

Justin: Heard they're getting some face lifts on Main Street, putting a little funding into that, bringing the antique cars back. Love it.

Audience: [cheers]

Justin: Bring back Tomb Raider and we'll talk.

Audience: [loud cheer]

Justin: Anyway. Anyway.

Sydnee: So when we first started talking about, what do we want to do a show on in Cincinnati, Justin's first suggestion was, well, chili.

Audience: [cheers]

Sydnee: And, inexplicably, we've done a show on chili before.

Audience: [more cheering]

Justin: That's the kind of podcast this is, we've already done chili.

Sydnee: In our medical history podcast.

Justin: I suggested a lot of whack things that were only tangentially related to Cincinnati.

Sydnee: Yes. And so I just started looking into the history of Cincinnati, and I found a nickname that the city used to have.

Audience Member: Oh yeah.

Sydnee: That maybe has gone away through the years, because I think people weren't a big fan of it.

Justin: Or maybe it's hot as ever and it's back. We have no idea Sydnee-

Sydnee: I don't know.

Justin: ... We're not locals.

Sydnee: But apparently your fine city used to be known as Porkopolis.

Audience: [wild cheering]

Justin: So, Sydnee hears that and she decides to do an episode on...

Sydnee: Trichinella.

Justin: Okay.

Sydnee: I mean, when you think of pigs, of course you think of eating raw pigs, and how that could make you sick, right?

Justin: It's what everybody thinks about. Just catching old Wilbur and getting a big bite.

Sydnee: Now, let me preface with, before I start talking about worms in your food, that this is incredibly rare, and almost never happens in the US anymore. So this is not something to worry about, unless you're a big fan of consistently eating raw pig and other wild game, then you might.

But otherwise, don't worry about it. But it used to be a bigger problem, and so I thought we could talk a little bit about trichinosis. And for everybody who's like, "I know I shouldn't eat raw pork but I don't know why", this is why. So, as we already alluded to, Cincinnati used to be the biggest pork producing city in the world, in the 1800s.

Audience: [cheers]

Sydnee: And meat was packed and shipped down the Ohio River and the city, obviously, was called Porkopolis because of that. And that is why one of your fine local delicacies, that used to be called strip groots, or dunking grits, but now you call goetta.

Audience: [cheers]

Sydnee: That's sort of the connection there. I think goetta is a way better name, by the way, than dunking grits.

Justin: I'm on the fence, honestly. Both extremely good.

Sydnee: I wouldn't eat dunking grits, but goetta's good, so I'll eat that.

Justin: Sydnee told me that Cincinnati is like the number one producer of goetta, and I was like, "Oh, nice." She said they're also the number one consumer of it, I was like, "That's beautiful, I love that." That self-contained ecosystem of goetta. I'm into it.

Sydnee: It's good. And I like pork, I like sausage. I'm not... This is not me—

Justin: I like oats. I like spices. What've we got? We got goetta, Justin.

Sydnee: So you're probably aware that pork has had certain religious prohibitions throughout history as to who should consume it and who shouldn't. And there are lots of reasons for that, but one thought throughout ancient history is that it may be also due to the fact that people would observe someone eating pork, back before we had proper cooking techniques and preservation techniques, and then they might get really sick.

And so that would be a really good reason to say, "Don't eat pig. That's a bad idea." There are lots of other reasons, but that's one possibility.

The reason is trichinella. Now, trichinella is a kind of worm, it's a kind of round worm, and it's actually a genus of multiple different round worms, different species.

Justin: The way your eyes light up. You used to look at me that way. The way your eyes... Whenever you get to talk about worms.

Sydnee: I love worms. I love parasites.

Audience: [laughs and cheers]

Sydnee: I do!

Justin: It's fine. It's fine. It's fine. It's fine.

Sydnee: They're just trying to—

Justin: It's fine.

Sydnee: ... live their little lives and they happen to cause some damage in there while they're doing it. They don't mean to. It's just, you know... Anyway. There are seven different species that can cause problems for humans. There's one in particular, *trichinella spiralis*, which causes most disease in humans, but there's a variety of roundworms that can cause problems.

And we always associate them with pigs. Like we always say, don't eat raw pork or undercooked pork because you'll get a worm of some sort. But there's actually a variety of animals that could cause this problem. So pigs kind of get an unfair shake here, because some more recent cases have because of horses.

Justin: Eating our horses.

Sydnee: Or bears.

Justin: Eating raw bears.

Sydnee: Moose or wild boar.

Justin: Imagine getting sick and your doctor's like, "Have you done anything totally buck wild lately?"

"I did eat a raw bear. Is that frowned on in the medical community? I'm not up to date on the literature."

Sydnee: I know that, this has always been an easy thing for me, because I've always been a fan of meat that maybe is more cooked than everybody else likes it. Like I like my meat done. Sorry. But generally speaking if you're not sure how long you should cook meat, just keep cooking it. Just don't eat it raw.

Justin: "Is that bear done?"
"I don't know. Let's keep going."

Sydnee: Let's keep going.

Justin: I'm not talking—

Sydnee: Just be really sure.

Justin: I'm not taking chances.

Sydnee: So what happens is the larva of the worm, they're actually in the muscle. So they're in the meat that you're eating. And they're in these little cysts. And because the meat wasn't cooked thoroughly, they're still viable in there. So they're just these little cysts. In your meat. And you're eating them.

And once they get into your stomach, some of the chemicals in there, the pepsin and the acid, the gastric acid, can start helping these cysts open up and blossom into little baby worms. That then can burrow into the walls of your small intestine, where they grow into adult worms.

Justin: Good. Yes. Good. Yes. Good.

Sydnee: They're just—

Justin: Hoo, hoo, hoo, hoo, good. Yes.

Sydnee: They're just like a couple millimeters big.

Justin: Not even that big of a worm.

Sydnee: No.

Audience: [laughs]

Justin: Welcome aboard, friend! Welcome aboard, sprout. Little fella.

Sydnee: These aren't like those massive tapeworms or anything; they're just little worms in your intestine.

Justin: Just a little worm. For fun. For the weekend. A weekend worm. For kids.

Sydnee: So they grow and they grow over the course of four weeks and then they can start releasing their own larva—

Justin: Oh, that's nice.

Sydnee: ... into your body and—

Justin: God, they grow up so fast, don't they?

Sydnee: And those little larva can migrate—

Justin: [singing] Sunrise, sunset.

Sydnee: Those little larva can migrate all over the place, mainly into your muscles and—

Justin: That's the sad part, you want them to stay at home. They're just gonna go wherever they're gonna go.

Sydnee: It'd be better if they just stayed in your GI tract, because then they would—

Justin: That's what I tell them.

Sydnee: ... naturally exit, at some point.

Justin: You kids don't know what it's like out there. Stay in the GI tract with Papa.

Sydnee: But they—

Audience: [laughs]

Justin: Papa will protect you.

Sydnee: But they don't—

Justin: You gonna go to the kidneys? Mm, mm, mm, mm, mm.

Sydnee: Actually—

Justin: Tough characters over there.

Sydnee: They don't typically go to the kidneys.

Justin: [whispers] It was a joke, Sydnee.

Sydnee: Well, I'm just saying.

Justin: How could you embarrass me in front of Cincinnati?

Sydnee: They mainly like to just go to your skeletal muscle. So they'll just be in your arms or your legs—

Justin: That's better.

Sydnee: Or just in your big muscles, where—

Justin: In my big muscles? [snorts]

Sydnee: In your big muscles.

Audience: [laughs]

Sydnee: In your Popeye muscles.

Justin: I'm in trouble. If they love... Oh no! These worms love big muscles! Darn it! Hoisted by my own petard!

Sydnee: So if you only get a few larva that travel around to your muscles, and by a few, I mean less than 10 per gram of muscle would be a few, which still seems like a lot, you might not ever know that anything has happened to you. You may just have these—

Justin: Have some worms.

Sydnee: Just have these encysted larva in your own muscle, they just get there and... Some species make cysts, some don't. The ones you probably would get do, and they just kind of encyst and chill in your muscle for a long time. If you do get a larger infection, then you will have some symptoms.

The first stage is when they're in your stomach, when they're in the intestinal stage. And then you're going to get what you think of as general, "I have a parasite" symptoms. My stomach hurts, and I'm nauseous, and I'm vomiting and I have lots of diarrhea.

Justin: "Lots of diarrhea" is an interesting... I feel like it's one of those situations where some diarrhea is lots of diarrhea, y'know?

"I've got diarrhea, but it's a manageable amount."

Audience: [laughs]

Sydnee: As a member of the McElroy family, I've found that that's a relative term.

Audience: [laughs]

Justin: Ha, ha, ha. Yes. Yes.

Sydnee: Once they get to your muscles, they hurt, if you get enough of them in there. Just a few, you won't notice it. If you get enough in your muscles, then they can start causing pain and weakness and tenderness. I mean, if you get a lot in there you can be bed-ridden, because of the pain of all the little cysts in your muscles. You can get fevers. There are some rare cases where people get really sick.

It has been fatal, throughout history, but it's not commonly that serious. But it can infect things like your heart muscle, and obviously that's a big deal. It can inflame your central nervous system. So in rare cases it's been deadly, but most of the time, that doesn't happen. Most of the time, these little cysts migrate to your muscles. It might hurt a lot at first. But then, after they encyst, they start to calcify over time and they die. And then they're just there.

Justin: Mmm.

Sydnee: And that's it.

Justin: They're just there. That's it. End of story.

Sydnee: And we have found them... We know that they have existed with humans for a very long time because we've found these little cysts, these little calcified cysts, in a 3200-year-old mummy that we dug up. And we looked through the muscles and found all these little white things that were

opened up and found to be trichinella cysts. So at some point, this Egyptian dude ate some raw meat of some sort and got trichinella.

Justin: Probably bear.

Audience: [laughs]

Sydnee: It would have been... He probably either would have been a member of the upper class or somehow associated with the upper class, because otherwise he wouldn't have had access to meat. That's the only thing I know. They named him—

Justin: Worm Man.

Sydnee: Nakht. Nakht ate meat, and they don't know why, because they think, "He doesn't look like the upper class, but he did get some meat, because we have all these cysts in his muscles."

Justin: Good for him.

Sydnee: Yeah. Good for him. He was on that grind.

Justin: Yeah, go get your meat.

Hello my friends, I hope you are well. I know I am. How are you? What are you up to? Oh, me? Well, I'm getting ready to head out on the road to Nashville and Indianapolis to do some shows out there. Just finished up packing and wanted to get you this episode of Sawbones to enjoy. Now, this was recorded in beautiful Cincinnati, Ohio, at a show we did up there. And I hope you're enjoying it. Anyway, we have sponsors this week of course.

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Thank you, sorry for the interruption. Hope you check out those sponsors, and now, without further ado, back to the shooooow.

Sydnee: So there are records throughout history of diseases that kind of sound like they were probably trichinella even if we didn't know that. Nobody wrote, "Oh, we found worms in their muscles", because nobody looked for them.

But if you go back to 404 BCE you find this record of a disease with severe dysentery and there was pain all over the body, and it was, in certain parts of Sicily, and it sounds a lot like it was probably trichinella. So modern scholars have thought, "Well, maybe this was a big outbreak of trichinella." You find other times where there was something called "The English Sweat"—

Justin: [big snort]

Sydnee: Or the "Sudor Anglicus."

Justin: That was my wrestling name.

Audience: [laughs]

Sydnee: And you find instances of this all throughout the 15th and 16th century, and the thought is that these might be outbreaks of trichinella. So somebody got like, some sort of, they brought down some wild game or something and shared it with a big part of their village, and everybody ate this meat, and then everybody got sick.

And so you'd see these isolated outbreaks where a bunch of people got sick, probably from sharing the big infected animal. And then it would go away. And they often called it things related to sweating, because you'd be in a lot of... You'd get the fevers and the stomach pain and you'd sweat a lot, and then you'd get all this muscle pain and you'd sweat even more, and so the sweating fever, the sweating plague.

Sometimes it was called things like dandy fever. I don't know why. Feverous diarrhea, because you got diarrhea and a fever.

So all these different names throughout history. Especially in Germany, there were a lot of cases that happened in Germany. They had a lot of problems with parasites. And so you saw a lot of these Sudor Anglicus cases. Of course they blamed the English. The Germans were like, "It's the English. They sent this sweating sickness down to us." And again, it's all the same thing, where you get descriptions of an illness that probably is trichinella, but you don't know for sure. We think so.

We didn't figure out the worm that was responsible until the 1800s. And there was the nicest, most collegiate little battle over who first discovered it. It's like a very polite controversy. And it's really not between the two original guys, it's like scientists throughout history who write about it. So—

Justin: It's almost like they weren't eager to be known forever as Dr. Pigworm.

Sydnee: I really think it's like, "Well, we found this gross worm."

Justin: "It's so gross. Don't tell my kids."

Sydnee: "My buddy found it." On February 2nd, 1835, James Paget, he was a medical student, and he was practicing at St. Bartholomew's in London. And he was dissecting the cadaver of this guy who had died of tuberculosis, but he found, in his muscles, all of these little white, calcified, cystic structures. And he thought this was very odd, he didn't know what they were.

So he called them "animacules" at first. He thought they were these tiny little animals, which had infested. Which—

Justin: Accurate.

Sydnee: Sorta. Sorta. And so he—

Justin: Not sorta. They're worms. They're animals. Tiny animals.

Sydnee: Yes. Yes. So he was sorta right, and so he started opening these—

Justin: Not sorta!

Sydnee: ... little cysts.

Justin: Stop it!

Sydnee: Well...

Justin: He did it, with no knowledge whatsoever. A called shot.

Sydnee: It was very impressive. He had to go borrow a microscope, because he didn't have a good one. He'd go around the department like, "Does anyone have a microscope? I don't know what these are and I need something. My microscope sucks. Does anybody have a good one?"

Justin: "But I'm pretty sure there's little animals in here."

Audience: [laughs]

Sydnee: So he went around 'til he found a good microscope, and he started opening up these cysts, and he saw that these were these little larva. These were these little worms. And after he kind of made this discovery, he got the help of his anatomy professor, Richard Owen. And he got him to come take a look at them.

And he actually helped him with figuring out exactly what part was what, and what are we looking at, and getting a better dissection of the cyst and all this kind of stuff. And so when it all came to present it... And Paget wrote this up, by the way, which if you're in the scientific fields, you know that that's like a big deal. He made this discovery and he wrote a whole paper on it to be published, to send in. To say, "Hey, I've found a new worm that nobody knows about and it might be responsible for some sort of illness, and we can figure this out.

But he never sent it anywhere. You can still read it, it's in the historical record, but he never sent it anywhere, he never published it, because he

said, "You know what? Owen is a better known guy. He has a lot more respect in the community. So I'm just gonna let my anatomy professor present the whole thing." So Owen presented the findings at the Zoological Society of London later that year. He called it, "The Flesh Worm."

Justin: Oh no.

Audience: [uncomfortable scattered laughing]

Justin: Oh no.

Sydnee: Which is just the worst name.

Justin: It's a terrible name.

Sydnee: Just the worst. So he presented his, "Owen's Flesh Worm."

Audience: [laughs]

Justin: You messed up.

Sydnee: And I mean, the Zoological Society I guess was just crazy about it. And he—

Justin: Yeah. It's almost like they wanted to say "Owen's Flesh Worm" a lot. Because they nasty.

Sydnee: And so he published the finding. Then he did, he mentioned that Paget also found it, but he really minimized his part. Like, "I think one of my med students may have been there. I don't know. Med students, whatever. I think he was hanging around.

So he really minimized it, and so throughout history now, when you talk about who discovered trichinella, who found this worm—

Justin: You know how you talk about that sometimes?

Sydnee: You know how, when you're at a dinner party, and somebody's like, "Let's talk about Owen's flesh worm." And then there would be somebody else who'd be like, "Listen. Paget found that worm, and Owen stole the credit, and minimized his contributions." And I guess there's been this battle since then.

Now, as far as Paget and Owen were concerned, I don't think they really cared, because Paget was always like, "Yeah, I love my mentor. Owen was great. I was really happy that he helped me out." And never said a bad word about him, so I don't think he cared. But now you know the story, so the next time somebody gives Owen all the credit...

Justin: In a conversation you have with them. In your life, I mean.

Sydnee: You can say, "Not so fast!" So once they had figured out if—

Justin: "Slow down. I want this conversation to last as long as humanly possible."

Sydnee: "I gotta tell you about Paget. He just didn't have a good micro... If he had just had a decent microscope." So, after that, over the next couple decades, a lot of scientists got involved and started looking for these cysts in other cadavers, and then eventually in animals, to try to figure out where... Because a lot of these things, like parasites, we're getting from some sort of creature, something we're eating, something we're coming into contact with. And so they started looking in animals.

A lot of these, again, were done in Germany. A lot of the early experiments, because this was a big problem. This was infecting a lot of people, they were having a lot of outbreaks. So they were doing a lot of the early experiments to figure out what could get it.

Eventually, Virchow and Zenker were the two big scientists doing all these studies, and feeding muscle to different animals to try to see, "Would they get infected if I do this?", that kind of thing. Eventually Zenker figured out that pigs were a major source of this. And that's where the connection came

with pork. And once Germany, the authorities, got wind that like, "Hey, we've figured out that there's this worm that humans can get and we're getting it from pigs", this actually created a lot of friction with the United States. Because at the time, Germany was importing a ton of pork from the United States.

And so, by default, a lot of the infected pigs were coming from the U.S., because... I mean, nobody knew about the worm, it wasn't intentional, just nobody knew it was in there. And so this lead to what was known as the German/American Pork Wars.

Audience: [big cheer for pork wars]

Sydnee: Maybe not one of the most important wars that ever involved Germany, but...

Audience: [laughter]

Sydnee: But I don't know, this is Porkopolis, so...

Justin: Maybe those wounds still run deep.

Sydnee: So at the time Germany imposed these strict bans on importing any American pork. And because they did it, other European countries started following suit, and saying like, "Oh, well we're not going to get pigs from America either." And Americans were all mad about it and saying, "It's not just... We're just all learning about this. It's not just our pigs, we can all do better screening meat." Anyway, there was this big, "We're not gonna take your pork."

"Well, I dunno, we're not gonna take..."

Justin: "Oh yes you will."

Sydnee: "... something."

Justin: "They're already in the boat."

Sydnee: And what eventually had to happen is we had to find a way where we could screen pigs and look for it and see if pigs were infected. And they were able to do that in the most... I like this because it's the most simplistic way possible. "We need to figure out if pigs are infected. What can we do? Take a piece of pig muscle and put it between two slides. Just smash it and look under a microscope."

And that is trichinosis, is what developed. And this was a whole scientific... Like you just look under a microscope and look for cysts and say like, "Nope, pig is good" or "That pig is bad."

Justin: "Good pig. Some pig."

Sydnee: "Don't eat that one." Which—

Justin: And when was this?

Sydnee: Do you think that... That could have saved Wilbur.

Justin: If he had had trichinosis?

Sydnee: I mean, nobody would have eaten him.

Justin: You're thinking that maybe Charlotte should have talked to a worm...

Sydnee: If Charlotte had just written, "Trichinella"...

Justin: Yeah. That's true. That's true. But that dumb farmer was shady. He probably would have been like, "Oh well." And he would tear it down like, "Nobody saw this web. C'mon sick little piggy."

Sydnee: Just a little thing that I have learned. If you're a fellow parent or caregiver or raising a child and you think, "I'm going to show them Charlotte's Web, because that was a pleasant film I remember from my youth", just beat... I mean, everybody remembers about Charlotte. I don't

want to spoil it but... Everybody knows that's coming. But in the beginning, there is a moment where that farmer is totally about to kill baby Wilbur, and it's very intense. Just warn you... Just be prepared. I was not. Charlie was scarred by that. "What is he doing!? Why!?" I don't know, honey.

Audience: [laughs]

Justin: I didn't condone it. I rushed upstairs when I heard her showing that, like "No! How could you?"

Sydnee: So, eventually, in addition to being—

Justin: It was a war, they called it, though. I just want to clarify. I thought maybe that might have predated the wars, all of them, and they were like, "You know what guys? This is a war." And then everyone else was like, "It's wicked not. You just wouldn't take the pigs and then you did, after you did some science. That's not a war."

Sydnee: You know, in science, sometimes the stakes aren't high day-to-day, and we just like to feel the drama.

Justin: Minor skirmish. The German/American Pork Skirmish.

Sydnee: The German/American Pork Police Action. So they figured out how to screen the pigs, and then we figured out also that if you cook the meat enough, then it's not a problem. And that was a big breakthrough. Which is why you can... I do this any time I'm cooking any meat, I have to ask Alexa like, "What's the temperature that I'm supposed to cook pork to?"

And that's where all that comes from, is because if we cook meat enough then we don't have to worry about things like trichinella being in the meat. But screening was still part of it, and after that, obviously, we could start sending pigs all over the world once again.

Justin: What a relief.

Sydnee: It has become much less of a problem. Trichinella, like I prefaced with, is very uncommon these days in the vast majority of the world. There are still places that have had more outbreaks. Still not a lot, in the grand scheme of things, but in particular Romania has had a lot of trouble with controlling sporadic outbreaks of trichinella through the years.

And there are a lot of reasons for that, but one that I found really interesting, and because we do a show about things that I think are interesting and I hope you do, is a certain festival that is celebrated in Romania. Which is... It's like Pig Slaughter Day.

Audience: [laughs]

Audience Member: Wooh!

Sydnee: Which is kind of a cool holiday. It's also the feast day of Saint Ignatius, and on December 20th every year they bring pigs out and kill them, like in the street.

Justin: You probably guessed that from the name.

Audience: [laughs]

Sydnee: In front of everybody. And I don't know that this is necessarily something that I want to attend in my life, but you might. But one of the things that they do, and this can apply to any time when you're freshly killing a pig to share with your family, friends, neighbors. But specifically at this festival one of the things they do is as they're butchering the pig they cut off pieces and cook them right away and hand them out to you.

Justin: Fun.

Sydnee: To eat, as you are observing the rest of the process. This is so rough.

Justin: Boy that's rough, huh?

Sydnee: It's so rough.

Justin: To just enjoy, as they are... You're already kind of moving onto, while you watch them... Hm.

Sydnee: I know. And there's a specific plum brandy that you drink with it, and they give you these first pieces, and they call it pig's alms. And this is a very important festival, but this is, they think, been the source of some outbreaks of trichinella, unfortunately.

Again, more recently, especially in the U.S., pigs are not often responsible. They can be, but there have been cases where, specifically in... There was a big outbreak in California a few years ago, and it was because somebody killed a bear and then...

Audience: [laughs]

Justin: Okay.

Sydnee: At the dinner part that ensued, people were partaking of raw and undercooked bear. Is this a thing? I...

Justin: How did you let me say all that whack stuff earlier...?

Audience: [laughs]

Justin: You let me say all that whack stuff and then you swoop in 20 minutes later and you're like, "Well, actually there are raw bear-eating parties in California. That's how they do it over there."

Sydnee: Well, I was saving it for the end.

Justin: I love it.

Sydnee: So there have been some cases because of that, and specifically game meat, like wild boar and stuff like that. But again, it is largely not a

concern in the U.S. There are treatments. The sooner the better, the fewer cysts you have all over, the easier it is to treat.

Justin: [vomit noises]

Sydnee: But we've got medicine that can treat it now. So even if you are unfortunate enough to be one of the, I mean, handful of cases that we see a year, in the U.S., you can still be okay.

Justin: You heard it hear first, folks. Chow down.

Sydnee: No, don't.

Justin: Don't cook your pig! You're wasting-

Sydnee: Don't eat raw pork.

Justin: You're wasting time, says Dr. Sydnee Smirl McElroy.

Sydnee: No, as a general rule—

Justin: Pointless.

Sydnee: If you're about to eat an animal and you think, "Is this an animal that needs to be cooked?" Yes.

Audience: [laughs]

Justin: [laughs] Folks, thank you so much for coming out to our show. We have a book, it's called the Sawbones Book, and we wrote it and Teylor illustrated it. You can buy it at bookstores. If you haven't listened to our podcast before, this is your first time, please subscribe to it on iTunes. Or wherever.

Sydnee: Yeah, it doesn't have to be iTunes.

Justin: It's fine. Thanks to the Taxpayers for the use of their song, "Medicines" as the intro and outro of our program. Thank you to those delightful McElroy brothers for letting us open for them. What an honor. Thank you to Paul. Thank you to the Taft. Thank you to, most of all, of course, you for coming to watch us. And we will be with you again next week.

So until then, my name is Justin McElroy.

Sydney: I'm Sydney McElroy.

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

Audience: [cheers]

[theme music plays]

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Justin: We are the hosts of My Brother, My Brother, and Me, and now, nearly ten years into our podcast, the secret can be revealed. All the clues are in place, and the world's greatest treasure hunt can now begin.

Griffin: Embedded in each episode of My Brother, My Brother, and Me is a micro-clue that will lead you to 14 precious gemstones all around this big, beautiful, blue world of ours.

Travis: So start combing through the episodes, uh, let's say starting at episode 101 on.

Griffin: Yeah, the early episodes are pretty problematic, so there's no clues in those episodes.

Travis: No. No, not at all.

Griffin: The better ones, the good ones? Clues ahoy.

Justin: Listen to every episode repeatedly, in sequence. Laugh if you must, but mainly, get all the great clues. My Brother, My Brother, and Me: it's an advice show kind of, but a treasure hunt mainly. Anywhere you find podcasts or treasure maps.

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