

Sawbones 126: Hookworm

Published March 4, 2016

Listen here at themcelroy.family

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 song plays]

Justin:

Hello everybody and welcome to Sawbones, a marital tour of misguided medicine. I'm your co-host, Justin McElroy.

Sydnee:

And I'm Sydnee McElroy. You're getting a little radio voice there, aren't you?

Justin:

Not intentionally, um.

Sydnee:

Getting a little, "Coming at you with, uh..."

Justin:

But, this is fun— This is actually—

Sydnee:

"... the hits of the 70s, 80s and today."

Justin:

This is actually funny because as soon as you and I recorded that last Sawbones is when I got, like, super duper sick, like, right after we finished recording...

Sydnee:

Oh.

Justin:

... my temperature, like, spiked. I'm just now on the road to recovery.

Sydnee:

Do you think it has something to do with me or our show or...

Justin:

I have no idea.

Sydnee:

Are—

Justin:

I'm allergic to learning? And then, this show's late because we were going to record last night and, um, honestly, when we pulled this curtain back, Charlie vomited all over us before she went to bed. And, I just, like, couldn't.

Sydnee:

Charlie, of course, is our 18-month old daughter. And, she's okay. Don't worry. We're not making light— If she was like...

Justin:

Sometimes, she'll just puke.

Sydnee:

Yeah, if she was really sick, we wouldn't be joking about it. She's not. She just— Sometimes, she eats more than she should and she just kind of gets an upset tummy, and then, blegh. Especially, if, like, we're trying to put her to bed and she doesn't want to and she's yelling at us a little bit.

Justin:

Yeah.

Sydnee:

We're not cry it out people. That's okay if you are, we're just not. We don't let her cry a lot, but she cries even a little and kind of just, blegh.

Justin:

Just, blegh. Because, we're not...

Sydnee:

Like, uh, like on South Park, like Stan on South Park.

Justin:

Sure.

Sydnee:

Right. She just kind of looks at you and pukes everywhere.

Justin:

Sydnee, I love you, but I really— I haven't been feeling great and I really would rather not talk about such gross things right now.

Sydnee:

Is the puke too much for you?

Justin:

A little bit much.

Sydnee:

I'm sorry. It— You know, the doctor thing, nothing really bothers me.

Justin:

Mm-hmm.

Sydnee:

Yeah.

Justin:

No, I— You make that very clear.

Sydnee:

Right. Well, okay. If you don't want to talk about puke, that's fair. A lot of people don't want to talk about puke. But, uh, maybe instead, we could talk about worms?

Justin:

Uh, okay. That's fine.

Sydnee:

Have you... I know we've talked a little bit about some worms before, uh.

Justin:

Yeah, the worm series is back.

Sydnee:

Yeah. Maybe we could talk about... Have you heard of a hookworm?

Justin:

No.

Sydnee:

No?

Justin:

No, not really.

Sydnee:

You don't really know much about hookworms?

Justin:

No.

Sydnee:

No? Or, how you get them?

Justin:

It's a roundworm.

Sydnee:

Yeah, that's right. You're reading ahead. Be careful there.

Justin:

Um, I just kind of knew that.

Sydnee:

Uh, we'll both talk about... So, you don't know anything about them, right?

Justin:

No, not really.

Sydnee:

And, you don't want to hear about anything gross though?

Justin:

Nothing gross and I don't know anything about worms.

Sydnee:

Sure. Okay. Let's talk about hookworms.

Justin:

Okay.

Sydnee:

This'll be fun.

Justin:

Okay. Okay.

Sydnee:

I want to thank Beth and Lindsay and Adam...

Justin:

The cats are biting me. Did we not feed the cats? Can we feed them after... Yes, CJ, I know. Okay. We'll feed them after the show.

Sydnee:

Okay.

Justin:

Okay.

Sydnee:

We will. We will definitely feed our cats.

Justin:

We will definitely feed our cats after the show.

Sydnee:

Don't worry. We love our cats and we will feed them.

Justin:

They're just biting me and I don't want to stop recording.

Sydnee:

Well, just try to be professional here and...

Justin:

I'll try, it's just they're biting me and I want you to know I'm going through this.

Sydnee:

Can you please focus on the hookworms?

Justin:

Yes, I'm so there. So in it.

Sydnee:

All right. So, as Justin mentioned, it is another roundworm. We talked about ascaris before, which was the first roundworm in our worm series that—
There are many worms.

Justin:

Yeah.

Sydnee:

And I enjoy talking about them, so we're going to.

Justin:

We— The worm series has a lot of segments.

Sydnee:

[laughs] Waka waka.

Justin:

Waka waka.

Sydnee:

So, we're mainly talking about two kinds of worms. When we use the term hookworm, we're really talking about more than one actual species of worm, uh. There's *Necator americanus* and *Ancylostoma duodenale*, which really doesn't matter. I mean, they both do similar things...

Justin:

Right.

Sydnee:

... and they're just in different parts of the world, and there's some slightly different clinical syndromes. But, we can lump them together, uh. There's some others that can cause some minor diseases and in addition, you can get, like, dog and cat varieties. You find that for a lot of parasites, there can be, like, a dog variety of the parasite and a human variety of the parasite, and, like, different mammals and different animals can get that. And, sometimes, we can infect each other with the wrong...

Justin:

Hm.

Sydnee:

...flavor of that worm.

Justin:

Okay.

Sydnee:

Like, I get a cat flavor in me or whatever. But, most of the time, you know, it kind of sticks to the right species.

Justin:

Gotcha.

Sydnee:

Most of the time. Now, I want to walk you through the life cycle of the hookworm.

Justin:

Okay. I'm ready.

Sydnee:

Okay? Because, it's important to understand how it gets to humans, uh, and then, out of humans and then into other humans in order for you to understand why it is important.

Justin:

Got it.

Sydnee:

Okay?

Justin:

I'm ready.

Sydnee:

So, hookworm eggs... Let's say that you already have hookworm, okay? Let's start there.

Justin:

I do.

Sydnee:

If I wanted to diagnose you with hookworm, what I would do is look at your poop.

Justin:

Okay. I'd rather we get some...a third party involved.

Sydnee:

You want me to... okay.

Justin:

You're my wife.

Sydnee:

Who has hookworms?

Justin:

No, I mean, a different doctor.

Sydnee:

Oh, okay.

Justin:

Dr. Oz.

Sydnee:

I thought we were using... Dr. Oz has hookworms?

Justin:

No. [laughs]. No.

Sydnee:

Okay. So, Dr. Oz has hookworms. [laughs]. Let's just use that as an example.

Justin:

Okay.

Sydnee:

I'm not saying he does. I have no idea— This is not—

Justin:

Dr. Oz—

Sydnee:

I'm not spreading...

Justin:

Got it.

Sydnee:

... horrible rumors about Dr. Oz. In this fictional scenario...

Justin:

Dr. Oz has hookworms. Got it.

Sydnee:

... this doctor, based on Oz, has hookworms. And, he— If we wanted to diagnose him with it, I would take a sample of his poop and I would spin it down and look at it under a microscope and then, uh, look for eggs.

Justin:

Now, what am I doing in this? We've introduced a third party, but I feel like I've kind of been muscled out of the equation.

Sydnee:

Do you just want to, like, chat with Dr. Oz while I'm investigating his poop?

Justin:

I'll keep Dr. Oz busy.

Sydnee:

You want to keep his busy?

Justin:

Yeah, okay.

Sydnee:

Okay. You want to entertain him, um.

Justin:

Okay.

Sydnee:

So, you're doing—

Justin:

I'll make him some chamomile?

Sydnee:

Okay.

Justin:

Put my feet up?

Sydnee:

Do you want to do some tricks for him?

Justin:

Yeah. Some juggling?

Sydnee:

Oh, some yoyo.

Justin:

Some yoyo?

Sydnee:

Justin's great with the yoyo.

Justin:

Uh.

Sydnee:

You really are.

Justin:

Well, thank you. That's really nice of you to say.

Sydnee:

Charlie will actually ask for yoyo tricks.

Justin:

I don't know that many yoyo tricks, but thank you.

Sydnee:

But you— The ones you do impress her.

Justin:

Yeah, I mean, they're good enough to impress a baby, that's true.

Sydnee:

So, Justin's doing yoyo tricks to impress Dr. Oz and giving him some Chamomile tea.

Justin:

And, he's loving it, right?

Sydnee:

And, he's loving it. And, meanwhile, I'm looking at his poop. And, there are some eggs in there because that's where you would find the hookworm eggs are in his stool. But, let's say that instead of me examining his poop in a lab, he went and pooped outside somewhere.

Justin:

Okay. That sounds like Oz.

Sydnee:

[laughs] So, he pooped outside, so his poop is on the ground. And then, the place where he pooped, somebody else walks through it barefoot. Let's say, Dr. Phil.

Justin:

Okay. Dr. Phil walks through Dr. Oz's dookie, got it.

Sydnee:

Barefoot. That's important.

Justin:

Okay.

Sydnee:

So, the larvae that are now in that poop... So, they've hatched into larvae... are going to burrow through his feet, through Dr. Phil's feet, uh, and get in there, really get in there and get into his vascular system. Okay? So, they're going to travel through his vascular system and eventually end up in Dr. Phil's lungs. So, these are... Do you remember this whole series of events. Eggs were in Dr. Oz' poop. The poop got on the ground.

Justin:

Justin...

Sydnee:

Dr. Phil walked through the poop.

Justin:

Justin's doing yoyo.

Sydnee:

They burrowed through his feet.

Justin:

Justin's doing yoyo tricks.

Sydnee:

Sweet yoyo tricks.

Justin:

Chamomile.

Sydnee:

Chamomile, uh. At some point, Dr. Phil is gonna, uh— These larvae, that are in his lungs, he's gonna cough them up, but then re-swallow them. We've kind of talked about this before.

Justin:

Yeah.

Sydnee:

That that's how worms...

Justin:

It's grossed me out if I remember.

Sydnee:

... that's how they travel...

Justin:

Yeah.

Sydnee:

... uh, some of them. They like, you cough them up. You re-swallow them down into your gut, which is where they wanted to be in the first place. So, they've finally arrived. And then, they're going to attach to your small intestines where they're going to live and lay more eggs. And then, you're going to poop out more eggs. And, that's the circle of life. [laughs].

Justin:

[laughs] And, it's going to be Dr. Phil and Dr. Oz pooping back and forth forever.

Sydnee:

[laughs] Uh, I would just like to mention at this point that I have no reason to believe that Dr. Phil or Dr. Oz are infected with hookworm or any other disease and I don't want to get in trouble for spreading rumors about them.

Justin:

And, I would like to at this point say that I know for 100% that to be fact, come at me.

Sydnee:

I'll say that Justin said it, not me. Please don't sue me. [laughs].

Justin:

Lawyer up, both of you doctors.

Sydnee:

I am not their doctor. I know nothing about their medical history. So, if you were to get hookworm, you probably would want to know what happens.

Justin:

Yes.

Sydnee:

So, at the site of where the, like, the larvae enter, so, in your foot per se, or it could be anywhere. We just used feet 'cause people often get it that way, uh. You're gonna get something that we would call cutaneous larva migrans...

Justin:

Okay.

Sydnee:

... which looks like these little, what we would call, serpiginous trails on your foot. These little...

Justin:

On the surface of your foot?

Sydnee:

Yeah, these little red, itchy, scaly tracks, like a rash, uh, on your foot or whatever area it entered.

Justin:

Okay.

Sydnee:

Ground itch is another name for this.

Justin:

Okay.

Sydnee:

So, you're going to have some sort of red, itchy area where the worm got in, uh. When it gets to your lungs, you could get a cough. You could get inflammation of your lungs, you know, some of those kinds of symptoms. And then, when it gets into your gut... So, you get, you know, different symptoms depending on where it is... when it gets into your gut, you can get some diarrhea, some abdominal pain, cramping, you know, general stomach upset, that kind of stuff. Okay?

Justin:

Okay.

Sydnee:

Uh, the big problem though, all that you could deal with. But, the big problem from these worms is that when they attach inside your intestines, they can cause, over time, a fairly significant amount of blood loss.

Justin:

Um.

Sydnee:

It won't be all at once. Not like you just gush blood.

Justin:

Are they drinking it?

Sydnee:

No, it's just where they attach, you're losing it. They, I mean, we call them blood sucking parasites and they are getting nutrients from you, but the bleeding more has to do with where they're attaching.

Justin:

Okay.

Sydnee:

So, you're consistently losing blood and you can get anemic. You also, because they are sucking your nutrients, you're getting malnourished. So, over time, this is a big problem, especially in kids, for growth and cognitive development, uh. It causes people to be tired all the time, they're anemic.

You get all the symptoms associated with anemia. And, basically, uh, it can cause a lot of absenteeism from school and a lot of delay in learning and in growth. So, it's a big problem, especially for kids, especially for pregnant women who can also get this. But, then, for anybody as well.

Justin:

I would imagine in developing nations it's probably...

Sydnee:

It's a huge deal.

Justin:

... more of an issue.

Sydnee:

And, the more worms you have, the bigger of a deal it is. Because, people are infected with multiple worms, you know, not just one.

Justin:

Right.

Sydnee:

And, that can make you sicker, uh. Where is it? Anywhere that's warm and moist in the world.

Justin:

You mean, in the body or in the world?

Sydnee:

In the world.

Justin:

Okay. Got it.

Sydnee:

Anywhere in the world that's warm and moist. It used to be, and we're going to talk a little bit more about this, incredibly prevalent in the Southern US.

Justin:

Really?

Sydnee:

Yes.

Justin:

Hm.

Sydnee:

We'll get into that a little bit more, uh. But, right now, it's anywhere in the world that's hot and wet, you will find hookworm.

Justin:

Got it.

Sydnee:

So, how long have we known about this? Probably a long time. If you go back to— There are some writings that the Egyptians did, uh, and that Hippocrates did about some sort of intestinal disease, and it was associated with, uh... You know, we've talked about this in green sickness, like a green complexion or a yellow complexion. And that was anemia.

Justin:

Okay.

Sydnee:

So, somebody had something went wrong with their stomach and then, they also were anemic, uh. We even see Avicenna, who we've spoken about

before, the Persian physician, write about a connection between these symptoms with some sort of worm.

Justin:

Okay.

Sydnee:

So, there's been writings about this for a very long time. But, we didn't actually isolate the hookworm itself until 1838 in Italy, uh, Dr. Dubini, who described the worm and after an autopsy, he found it during an autopsy, and he named it...

Justin:

Mm-hmm.

Sydnee:

... and he was the first one to kind of call it what it is. "This is a problem. We know this worm is doing things to humans. We don't know exactly what it's doing or how it does it, but we know this is a problem." Uh, a few decades after that, we figured out how to diagnose it by looking for the eggs in the stool, uh. But, in 1898, we figured out a lot more about hookworm by accident.

Justin:

Now, let me derail you for a second. Is this visible in the stool? Is this like, without a microscope?

Sydnee:

No.

Justin:

Okay. So, that's why we had trouble diagnosing it before then?

Sydnee:

Exactly.

Justin:

If they had been visible without a microscope, we probably would have been on top of this a lot earlier.

Sydnee:

Exactly. We've talked about before that when the ascaris worm, another roundworm, eventually comes out of you, it's, like, it's a big worm...

Justin:

Right.

Sydnee:

... that you see. Yeah, it's a big worm, uh. You don't, I mean, like, with the hookworm, when it's attached inside you, you don't see the worm but the eggs that are laid are microscopic. So, you wouldn't know they were there, uh, unless you know how to look at poop under a microscope. But, actually, I do. I've actually had special training to do this.

Justin:

Yeah.

Sydnee:

You know. If you like that kind of thing, which I do.

Justin:

[laughs] But, you can see the trails, yes?

Sydnee:

On the foot or whatever?

Justin:

The trails left by... Are there literally like tunnels of the hookworm left behind or...

Sydnee:

Like on the site that they entered?

Justin:

The ground itch?

Sydnee:

So, like, on your foot or whatever, you could— I mean, they look like little tunnels on your foot or your hand or wherever they entered, yes.

Justin:

Okay.

Sydnee:

But then, they go away. Like, that heals and goes away long before it's completed its journey inside you.

Justin:

Got it. Okay.

Sydnee:

Uh, in 1898, uh, Arthur Looss, uh, determined the life cycle of the hookworm and he did it accidentally. He was studying the hookworm and he was trying to drop some of the larvae of the hookworm into some guinea pigs' mouths.

Justin:

Oh, cool.

Sydnee:

Yeah.

Justin:

That's a cool day for those guinea pigs, huh?

Sydnee:

I know. The unfortunate guinea pigs that he was trying to infect with hookworm in order to study it more, uh. While he was doing that, he... I don't know. I don't know why he wasn't wearing gloves... He probably should have been wearing gloves. I think this was around the time of the invention of gloves, maybe slightly before.

Justin:

Yeah.

Sydnee:

Uh, but, anyway, he dropped some of it onto his hand. And, it doesn't take a lot of contact. So, at the site, on his hand where the larvae were dropped, he got ground itch.

Justin:

Grossed out.

Sydnee:

Uh, and then, he thought, "You know what, I see all this red, itchy area, I wonder if worms got in me." So, like any good scientist, what did he do?

Justin:

Checked his poop.

Sydnee:

Checked his poop. He—

Justin:

Ah, I was kidding!

Sydnee:

No, you're right. He continued to check his poop every day until... voila. He found eggs.

Justin:

Is there anything checking your poop can't accomplish?

Sydnee:

No, Justin. No. No. Now, one really interesting thing about, uh...

Justin:

[laughs].

Sydnee:

... about hookworm, and this is something I didn't know even though, as you may already be aware, Justin and I are from West Virginia, and West

Virginia— One of the things we're known for is mining. I think that there's a fair association of this state with coal mining.

Justin:

Yeah.

Sydnee:

Uh, and this is something—

Justin:

A little bit less now, kind of a down turn.

Sydnee:

That's true.

Justin:

People aren't so hot on coal as much any more.

Sydnee:

Well, that's true. I'm just saying that from a historical...

Justin:

We've got less of it too.

Sydnee:

... perspective, you can attach coal mining to our state, uh. And, this is weird. Actually, as I was mentioning this, even at work, I had people who knew about hookworm because they had family who worked in the mines and if you have family who worked in the mines or if you worked in a mine, you know about this already. Because, hookworm has a strong association with mining.

Justin:

Why?

Sydnee:

Okay. So, let's think about it.

Justin:

'Cause you're like covered up by and large, right?

Sydnee:

Well...

Justin:

Unless your Zoo—

Sydnee:

... were you always covered up?

Justin:

Unless it's that part in Zoolander where you're just wearing suspenders and a tank top.

Sydnee:

Which I do not think is what...

Justin:

I don't think it's accurate.

Sydnee:

I don't think that's a traditional miner's...

Justin:

No.

Sydnee:

... uniform, uh. So, think about this. These worms like warm, moist places, right?

Justin:

Yeah.

Sydnee:

They like, especially, soil that's warm, like loamy soil, warm, moist soil.

Justin:

Okay.

Sydnee:

Uh, like you would find deep underground. Okay?

Justin:

Okay.

Sydnee:

This is also soil that's rich in minerals, which is good for these worms. So, if the worms can get to that soil, they're happy. That's a good soil for these worms. They like that soil, right?

Justin:

Okay.

Sydnee:

Okay. So, let's say that you're a miner. It's back in the 1800s, uh, in the US. We're using the US right now, although this could be anywhere. You really don't—

Justin:

Oh, my God. I just figured what this is, uh, God. Stop the show. I want to get off.

Sydnee:

[laughs] You don't really have any rights at this point as a miner. This is something we know well in West Virginia and you may know just from your history books.

Justin:

Yeah, you get paid in scrip.

Sydnee:

Yeah. Miners were not treated well. They were basically owned by the company. They would be sent down into dangerous conditions and left there

for hours. And, I mean, I guess, you would be allowed to come up and take a bathroom break?

Justin:

Yeah, but everybody will make fun of you. They will call you a sissy Mary.

Sydnee:

And, almost certainly, they wouldn't pay you as much and you might get fired and who knows what, 'cause you didn't have any rights. So, you had to go to the bathroom.

Justin:

Oh, Syd.

Sydnee:

There were a lot of dark, abandoned corners, places you could go, turn off your headlamp, and hide.

Justin:

Let me— Can I save you some— There's poop everywhere.

Sydnee:

There's poop everywhere.

Justin:

Okay.

Sydnee:

Yeah. There was poop everywhere in the mines.

Justin:

How could you do this?

Sydnee:

So, also, because you aren't getting paid real money and because you don't have a lot of things, the shoes you're wearing are probably pretty worn out.

Justin:

Right. That's makes sense.

Sydnee:

Or, maybe you don't have shoes any more.

Justin:

Right.

Sydnee:

I know that sounds crazy but there was a time where you may have been down in a mine barefoot. So, you've got people pooping everywhere and you've got people walking through the poop everywhere. Or, even if that isn't- even if you didn't walk through it, you're tromping it up the ladder on your boots. You're taking it home. You're gonna take your boots off at some point with your hands, which you probably don't have gloves on. One way or another, those worms are getting in you.

Justin:

You lay your egg salad sandwich on the ground and then pick it back up. Oops, hookworm.

Sydnee:

[laughs] Ew. Why do you have an egg salad sandwich down in the mines?

Justin:

It's just the grossest sandwich I can think of.

Sydnee:

Because— [laughs] Because, that's what you want down... "What will keep well? What do— Hey, hey, Bob. What do you think will keep well..."

Justin:

"Hey, Bob. What will keep well?"

Sydnee:

"... down in the mine?"

Justin:

Maybe egg salad, Bob.

Sydnee:

Maybe an egg salad sandwich?

Justin:

It's cool down there. I think it'd be fine.

Sydnee:

And, everybody's doing this. Because everybody's got to poop. Everybody poops. And, not everybody has great shoes. And so, everybody's down there doing this, um. There was probably poop all over the mines up until the 20th century. And, that's why we get this association with mines. For instance, hookworm is also known as miner's itch, tunnel disease, brick maker's anemia, associated with brick makers, uh.

There's also, uh, miner's anemia, uh, which is just— If you've ever conjured up this kind of image of, like, a miner as somebody who's like kind of pale and gaunt and they're coughing all the time and they look malnourished, we always think that's a lung problem. And, certainly that's part of it. But, the other thing was the anemia that a lot of miner's had [crosstalk] because they were all infected with hookworm...

Justin:

Interesting.

Sydnee:

... and didn't know it, uh. And, this wasn't— Again, this wasn't just in the US. I'm talking coal mines 'cause that's what I'm familiar with. But, this was wherever there were mines, so the gold and silver mines of Hungary, the sulfur mines of Sicily, uh, all throughout Europe, different coal mines, there were miners infected with hookworm all over the world, uh.

We figured out this association when the St. Gotthard Tunnel was being constructed in the Alps, uh. A lot of men got sick, got diarrhea. They started studying them. They published the findings and they figured out that the majority of these men had gotten hookworm. In fact, during the Gold Rush,

it was estimated that half of all the miners out in California had hookworm and in some areas, uh, they studied certain mining camps, like, all but two men had hookworm.

Justin:

Have we done anything to, like try to stand athwart history and say stop here? Like, just like, no more hookworms, we're sick of it?

Sydnee:

Well, Justin, of course we have. But, before I tell you about that, why don't you follow me to the billing department?

Justin:

Let's go.

[theme song plays]

[ad break]

Justin:

So, I want to fight these things, Sydnee. I'm done with hookworm. I'm going to take the fight to them...

Sydnee:

Well, that's exactly what—

Justin:

... 'cause I'm a human being and you made my feet itch.

Sydnee:

[laughs] That's always the way it goes. We get fed up with, uh, things that are smaller than us beating us.

Justin:

Well, listen, watch ID 4. We get fed up with things that are bigger than us, too. Just don't inconvenience us.

Sydnee:

Yeah. [laughs] We just want to win again.

Justin:

Yeah. Just win again.

Sydnee:

Okay. Can we just win again?

Justin:

Welcome to Earth.

Sydnee:

Uh, so, in the early 1900s, there were huge eradication efforts to get rid of this worm. As we— Now we figured out what it is and where it is and how it gets from person to person, and then the poop thing, and the egg thing. And, we all— We know it, so we're going to start getting rid of it.

So, like, one really impressive effort was actually, uh, done in Puerto Rico where a third of the population was cured. A third of the population had hookworm and they were cured when there was a US Army led effort to go in and eradicate it. By then, we had come up with some medications that worked. We've got better ones now. But, we had come up with some de-worming medications. And then, just sanitation efforts, wearing shoes and not, um, you know, defecating in public places and things like that, education efforts, uh. And, the death rate there from anemia dropped 90%.

Justin:

Nice.

Sydnee:

Which was amazing.

Justin:

Hygiene's always the first step.

Sydnee:

So, once we had success there, uh, in 1909, in the US, we saw a similar effort here. So, the problem really stemmed from the fact that Rockefeller, the millionaire, the billionaire, the millionaire, probably millionaire at the time.

Justin:

Yeah.

Sydnee:

Rockefeller wanted to open more, uh, businesses, wanted to employ more people in the American South. But, he had an issue with, he felt, that by and large, his employees in the South were not as productive or as punctual or came to work as often...

Justin:

Right.

Sydnee:

... as his employees in the North.

Justin:

[laughs].

Sydnee:

So, he began to study why this was happening and his thought is that it had to do with the hookworm. And, to be fair, maybe as many as half of the population of the South was infected with hookworm at the time. This is something we never talk about. This is in the 1900s. Like, half of the South had hookworm.

Justin:

Yikes.

Sydnee:

So, he created the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, and this sounds like a wonderful philanthropic effort. I mean, yes, he helped to eradicate hookworm, but, uh, what he also was trying to do was get his people to come to work more often. [laughs].

Justin:

"Get back to work!"

Sydnee:

He wanted more money. So, they began some public health efforts to educate people. Again, just telling them how you get the disease, uh, just getting people shoes. Again, building, like... One of the biggest things they did was to build these, uh, pit privies. So, they were a certain kind of outhouse that had a pit in them that dropped, you know, whatever you put in the outhouse, four feet. Because, four feet is as far as these worms can go.

Justin:

Okay.

Sydnee:

So, if you dug a four foot hole, and your poop dropped four feet, then you don't have to worry about somebody walking in there and walking through worms. Because, people were going to outhouses barefoot. There's the truth.

Justin:

Yeah. Yeah.

Sydnee:

So, you build these outhouses which were really a revolution. You get people to wear shoes. This was actually a huge feature of the Mississippi State Fair in 1909. There was this giant hookworm exhibit, which, I wish I could go back— If I could go back in time to one thing...

Justin:

To one thing.

Sydnee:

... it would be the Mississippi State Fair in 1909, 'cause I would love to see what that hookworm exhibit looked like. And how, like, freaked out... Can you imagine? If you're standing there looking at a sign that says, like, half of

you have this and it came from poop and it crawled through your foot and it's in your intestines?

Justin:

Mine is to hang out with a guy named Chad the day after the, uh, 2004 presidential election. And, all the hubbub about hanging Chads and what have you, 'cause that guy knew the jig was up. That's going to be his whole month, you know. Been thinking about that a lot lately.

Sydnee:

That's what you would do if you'd go back in time?

Justin:

Yeah, I'd go hang out with a guy named Chad the day after that election.

Sydnee:

You and I never have good answers to what we would do if we go back in time.

Justin:

No. I like it in the here and now.

Sydnee:

[laughs] So, Rockefeller, to his credit, did help solve this, what he referred to as the germ of laziness, um. The rate— One really good example is the rate of hookworm infection among school kids went from 40% to basically zero...

Justin:

Wow.

Sydnee:

... as a result of these efforts, uh. And, this was only over the course of a few years. Again, they also had de-worming medications back then that they were already starting to use. And, it greatly increased productivity and work attendance, as well as school attendance really turned around. And, this was a big deal because kids with hookworm can't learn as much or as fast and it really does stunt their growth and development.

Justin:

Mm-hmm.

Sydnee:

Uh, that's the absolute truth, even today. So, before I get into, just real quick, where we are today with hookworm, uh, because we didn't really do a lot of crazy things through the years to try to treat hookworm, because we didn't know it was there for a long time. We didn't know what to treat, uh. So, we, you know, we've talked about crazy things we've done for anemia or for stomach problems, or that kind of thing. But, we weren't ever trying to treat hookworm in a weird way, 'cause we didn't know about hookworm.

Justin:

Right.

Sydnee:

There are still some natural things that you'll read that you could do to de-worm yourself, 'cause that's really what we're talking about. Like, you would your cat or your dog, you want to de-worm yourself.

Justin:

Yeah. You could take their - your cat or dog's - uh, worm medication. That's one thing.

Sydnee:

No. Don't do that. Don't do that.

Justin:

Yeah, agree to disagree.

Sydnee:

Don't do what Justin said, ever.

Justin:

That's one thing you could do.

Sydnee:

So, you may... Instead of going to a doctor and getting treated appropriately, you might decide to consume some pumpkin seeds, sesame seeds and figs three times a day on an empty stomach.

Justin:

Yeah, that sounds awesome.

Sydnee:

Or, maybe you want to drink only bottled mineral water, just 'cause you're fancy.

Justin:

Yeah, that's a fancy treatment.

Sydnee:

Or, if you're feeling really... I don't know, masochistic, eliminate all sugar, fats, beef, chicken, lamb, and pork products from your diet.

Justin:

It's not bad enough that my feet itch. Now I have to eliminate all good food.

Sydnee:

Now, I did find some good advice out there that, uh, you want to wash your hands frequently. You want to wash your underwear.

Justin:

Sure.

Sydnee:

Sure.

Justin:

I mean, like, I'm a big fan of that no matter what.

Sydnee:

Yeah. Wash your underwear.

Justin:

You should wash your underwear.

Sydnee:

Wash your underwear. I mean, if you're going to wear them, you might as well wash them, right?

Justin:

That can't be real advice— Wash your underwear?

Sydnee:

Wash your underwear.

Justin:

I mean, yeah, obviously.

Sydnee:

Also, avoid scratching your anal area.

Justin:

Just, like, by and large again, yes.

Sydnee:

I mean, just to be polite, or at least in public.

Justin:

Yeah. It's— Where's the decorum?

Sydnee:

Yeah. Um, but, along the same line and the same place where they would tell you, like, don't scratch your butt and wash your underwear, eat some papaya.

Justin:

I mean, that's good advice. They're just delicious.

Sydnee:

Yeah, but, uh, if you're eating papaya in hopes to de-worm yourself, again, just check with a doctor, uh. And, there is an interesting theory now, which may not actually be entirely wrong, but I'm not advising it. I'm not saying do this. I'm just saying that we're still figuring it out, uh. Helminth Therapy where, uh, this is based on, I think I may have mentioned before, the hygiene hypothesis. People are too clean now and that's why we get asthma and allergies...

Justin:

Right.

Sydnee:

... and everything. We're not exposed to enough stuff. And, I think that part of that is that we should have worms, that humans should. Like, we've evolved. That we should have... There's some scientists who believe this. I would not say I believe we should have worms necessarily...

Justin:

Yeah.

Sydnee:

... 'cause they cause problems, so they're parasitic.

Justin:

They give you anemia.

Sydnee:

Yeah.

Justin:

This isn't, like, A, B. Like, it's not hard to test this. Like, they're bad.

Sydnee:

But, there's this theory that if you could give people very small doses of worms for limited periods of time. Like, just until they got sick, and then you would de-worm them, that you would be able to treat things like allergies and asthma and Crohn's, and that kind of thing, autoimmune type diseases by dampening your immune response, and it would help fix that, um.

It's interesting. I think that's fascinating to kind of, as a thought exercise and to investigate. But, I would certainly not recommend intentionally infecting yourself with worms in order to treat your asthma. Like, we've got medicine for that and I would go get that...

Justin:

Yeah.

Sydnee:

... instead, would be my advice. Today, we have, uh, largely eradicated hookworm in the US, although it can happen and does happen. So, don't feel like just because Rockefeller did all that back in the early 1900s, you're safe.

Justin:

Right.

Sydnee:

You could still get hookworm, uh. But, it is a much bigger problem outside the US. 700 million people worldwide are infected with hookworm.

Justin:

Okay.

Sydnee:

And, as I mentioned, it is the leading cause of anemia, protein malnutrition. It's a big problem for pregnant women, and it is considered one of the neglected tropical diseases like Guinea worm, which we've spoken about before. So, it is something that impacts a huge number of people, children, pregnant women, you know, adults too, everybody. And, it is definitely something that needs to be addressed and how do we do that?

Well, with a lot of public health efforts. Stuff that we did in the 1900s still holds true now. Wearing shoes, uh, you know, stay away from dirt, stay away from— You know, don't poop outside, don't touch or eat dirt, um, uh. Improve sanitation, access to what is a very cheap medication. So, we have good medications against this now.

Justin:

Okay.

Sydnee:

Albendazole, Mebendazole, they're good anti-parasitic de-worming medications that are cheap as dirt. We just need to get them to people. So, you may be wondering if there's anything you can do?

Justin:

I am wondering that.

Sydnee:

So, aside from all those things you can do for yourself to prevent yourself from getting hookworm...

Justin:

I feel very good about it.

Sydnee:

... uh, one good, uh, thing I found was a resource called globalnetwork.org, uh. They're dedicated to the eradication of neglected tropical diseases. So, you can look at all the other ones there too, but one of those are soil transmitted helminths...

Justin:

Okay.

Sydnee:

... and that includes hookworm.

Justin:

Yeah. All right.

Sydnee:

Uh, and so, if you're interested in donating money to those efforts, or seeing if there's anything else you can do, I would go check out globalnetwork.org, uh, because this is, again, something that, you know, while I don't see cases

of hookworm very often here, although that doesn't mean I've never seen one...

Justin:

Yeah.

Sydnee:

... it is certainly a much bigger problem outside the US and it causes, like I said, a significant impact on childhood development, cognitive growth, attendance in school and that kind of thing, and so, um, so, you know, check it out. See if it's something you're interested in helping out with.

Justin:

Well, I like that. A call to action, which we really have something that we can do. I like that.

Sydnee:

There is something we can do. We know how— And the medicine is cheap. There— We know how to do this. USAID is actually making huge efforts in this as well, um. So, really, check into this if this is something this, uh, this is something I feel passionate about, so, check it out.

Justin:

Hey, listen, folks. 2016 Max Fun Drive is just around the corner. Join us for the best two weeks of podcasting. Show your support for Sawbones at Maximum Fun. We have, uh, great shows, uh, that week. It's the best two weeks in podcasting, uh. We got— We're going to have, um, if you're new to Sawbones, every year we do this where we, um, uh, ask you to help give back to our network.

And, in exchange, you're going to get a lot of cool gifts, a lot of cool prizes, a lot of bonus content. There's tons of, um, uh, extra Sawbones on there and then we'll have another bonus one for you. So, um, mark your calendars that it's going to kick off March 14th and it's going to run for just two weeks. So, don't miss out on all the fun. It's going to be huge. Thanks to, uh, the Taxpayers for letting us use their song Medicines as the intro and outro of our program.

Sydnee:

And, we'd also like to thank...

Justin:

Uh, did you thank the— First off, did you thank the folks that suggested this topic?

Sydnee:

Yes, I did.

Justin:

Uh, thank you to Lauren for the, uh, beautiful books.

Sydnee:

Yes. That's who I wanted to thank.

Justin:

Okay, well, do it.

Sydnee:

I wanted to thank Lauren.

Justin:

Pretend I didn't say that then.

Sydnee:

Thank you, Lauren, uh, for these beautiful books that she sent us, sent me. I mean, I really think they're for me. You could— You can look at them.

Justin:

Never forget who thanked you first, Lauren.

Sydnee:

Now, I was about to. You interrupted me, uh... Four beautiful books about Lister . Uh, they're bound and they're gorgeous and they're like— It's, like, numbered so it's one of a collection of books. All of his writings. They were lovely. Thank you so much.

Justin:

Thank you. Uh, and, uh, folks, that's going to do it for us. Thank you so much for listening. Sorry we're a little late. We'll get you back next time.

Sydnee:

But, I made up for it by making it about worms and poop.

Justin:

[laughs].

Sydnee:

And, doing some good. So, it's, like, your favorite Sawbones too.

Justin:

Uh.

Sydnee:

You're welcome.

Justin:

Like, uh, like [laughing]. All right. Until...

Sydnee:

A dash of altruism.

Justin:

Until the next time we have something to talk with you about, my name's Justin McElroy.

Sydnee:

I'm Sydnee McElroy.

Justin:

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

[theme music plays]

MaximumFun.org.
Comedy and culture.
Artist owned.
Listener supported.