

## Sawbones 52: Rabies

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Clint:

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

Sydnee:

And I'm Sydnee McElroy.

Justin:

Well, folks, big news, we have, uh, it's the news you've all been waiting for, we have a big new addition to the McElroy family. Well-

Sydnee:

That's right.

Justin:

Ext- extended family.

Sydnee:

Yeah.

Justin:

I guess.

Sydnee:

That's right, Justin. We are proud to announce that my parents have inherited a stray dog.

Justin:

Yeah, inherited I don't know if-

Sydnee:

Sorry, that was mean, by the way.

Justin:

I'm not sure if it's accurate that they inherited it. It's sort of-

Sydnee:

That's ... No.

Justin:

It's sort of-

Sydnee:

A dog wandered onto their porch and now will not leave.

Justin:

Now, I think it- it was a little unnerving at first, for everybody, uh, myself included, because I don't like strange dogs.

Sydnee:

Well, and it- it didn't have a collar.

Justin:

Yeah. It's worrisome.

Sydnee:

And so, you don't know.

Justin:

Feral. Wolf-

Sydnee:

You know?

Justin:

Part wolf.

Sydnee:

Well, I don't ... I mean, why would it be, why would you assume it was part wolf?

Justin:

Maybe part wolf, one quarter to one half wolf, possibly.

Sydnee:

I don't, I don't think it looks. ... it's very friendly. It's clearly been-

Justin:

Many wolves are friendly, initially.

Sydnee:

It's clearly been around humans. I, no, I don't think wolves are ever friendly, are they?

Justin:

Sometimes wolves are friendly-

Sydnee:

I don't-

Justin:

Look at, watch a Game of Thrones for once.

Sydnee:

I would recommend assuming that wolves are not friendly, [laughs] for everyone in the listening audience.

Justin:

The other worry about stray dogs of course, rabies.

Sydnee:

Well, now, that is a valid concern.

Justin:

See, every time I see a dog, I just assume rabies until proven innocent.

Sydnee:

That's probably not a good assumption in this country.

Justin:

Oh.

Sydnee:

Since the vast majority of dogs have been vaccinated.

Justin:

Okay, well, since I clearly don't know anything about rabies, why don't you educate me a little bit, Sydster.

Sydnee:

All right, just to, just to preface though, I don't think that dog has rabies. And I hope we find it a nice home, or that my mom convinces my dad to keep it.

Justin:

Well, you're a doctor and not a vet, so-

Sydnee:

'Cause it's adorable.

Justin:

If you'll forgive me-

Sydnee:

No, that's fair, but it's a very friendly, pleasant dog.

Justin:

That's fine.

Sydnee:

Uh, thanks to Greg, who suggested this topic-

Justin:

Greg.

Sydnee:

... and I think there were actually some other people who threw it out there, but Greg, you were there-

Justin:

It's harder when you do it on Twitter, guys, 'cause we forget, so.

Sydnee:

[laughs]

Justin:

Just please email, if you want to.

Sydnee:

But it was a great idea, it was a good talk-

Justin:

Sawbones@maximumfun.org, by the way.

Sydnee:

Um, so, first of all, what, do you know anything about rabies?

Justin:

No, Syd.

Sydnee:

Okay, well-

Justin:

[laughs] Fo- foaming at the mouth.

Sydnee:

You know dogs?

Justin:

Foaming at the mouth.

Sydnee:

Foaming at the mouth, okay. That's- that's about what most people know. So, it's a virus.

Justin:

Right.

Sydnee:

Uh, and obviously you can get it through being bitten-

Justin:

Mm-hmm.

Sydnee:

... by a dog. You know, everybody knows that.

Justin:

That's an easy one.

Sydnee:

It's- it's transmitted through saliva. Um, but you could also get it if, like, I guess spit kinda flew from the dog's mouth into your eyes or mouth or-

Justin:

Cool. Cool image. That's nice.

Sydnee:

I don't know, or from another human into your eyes and mouth, I guess.

Justin:

Ew.

Sydnee:

Although that usually doesn't happen, that's not a way it's transmitted typically.

Justin:

So, you see a human, they're foaming at the mouth, you wander up to them like-

Sydnee:

[laughs]

Justin:

"Hey, what's your spittle doing? I wanna get in range of you."

Sydnee:

[laughs]

Justin:

Let me get in range of you and figure out out your sitch.

Sydnee:

I should clarify. For the most part, humans don't typically foam at the mouth when they get rabies.

Justin:

Or really?

Sydnee:

I'm not gonna exclude that there wasn't one human, who at some point may be dead, but-

Justin:

So, there's no way of knowing that people have rabies.

Sydnee:

[laughs] Um, no, there, uh, people who have rabies, you can tell.

Justin:

Okay.

Sydnee:

Um, so, all other mammals pretty much can get rabies, and sometimes humans get rabies, unfortunately. And if it's untreated, it's ... and I think most people know this, it's pretty much fatal, if it's untreated. Um, and it causes ... So, in humans, you're more likely to start off with, like, a flu-like kinda symptom. And this can be after, I mean, weeks, months after you get bitten. This can be a long time after you've been exposed.

Justin:

Mm-hmm.

Sydnee:

You get some symptoms, um, feel like the flu, and then you start getting the dramatic stuff that everybody gets scared of. You know, the ... you get tremors, you hallucinate, parts of you maybe come paralyzed. Um, the classic thing everybody remembers, is hydrophobia. Have you heard of that?

Justin:

Hydrophobia? No.

Sydnee:

I bet you could piece that together.

Justin:

Uh, fear of water.

Sydnee:

There you go. So, classically, with rabies, uh, people described that the patient would become afraid of water. That's not technically what's happening. You have, um, either an inability to swallow, or it hurts really badly when you swallow, just because of muscle spasms. So, patients will not want to drink.

Justin:

So, they won't, like, freak out if you bring a Super Soaker into the room or something?

Sydnee:

No. [laughs] I mean, typically I don't like it if- if you bring a Super Soaker in the room.

Justin:

That's true, I'm not allowed to have them in the house. But that's okay.

Sydnee:

No. They don't make those anymore, you know?

Justin:

Marriage is all about compromise.

Sydnee:

I wish they still made them.

Justin:

I know.

Sydnee:

No, but it's just that, um, because the patient is maybe hallucinating and a little delirious, and then they know that water hurts and so you try to hand them water [laughs] and they adamantly refuse it, and it was seen as a fear of water. That's actually what the Greeks called it when a human would get rabies, they called it hydrophobia.



Justin:

Huh.

Sydnee:

Um, they called, uh, when a dog had rabies, they called it Lyssa or Lytta, which were words meaning madness.

Justin:

Okay.

Sydnee:

Also a name for the Greek goddess of madness, I believe, which is where the rabies virus is one of the Lyssa viruses, that's where that comes from.

Justin:

Huh.

Sydnee:

Um, but the word Rabies comes from the Latin word rabere, which means to rage or rave.

Justin:

It's one of the, um, I gotta compliment you guys on rabies, 'causer it's one of the easier, like, medical names of things. It- it's a lot easier to keep track of than a lot of these disease names that you guys come up with.

Sydnee:

That- that's exactly true. And that's, um, why I try to make sure and tell you, you know, the- the root origin of these words, so that I can butcher some Latin during our podcast. [laughs]

Justin:

[laughs]

Sydnee:

I can say rabies easily, so I had to find something that I could probably mispronounce for you.

Justin:

[laughs]

Sydnee:

I don't, contrary to popular belief, all doctors don't know Latin.

Justin:

Yeah.

Sydnee:

No. I didn't take Latin.

Justin:

You know most Latin, I would say.

Sydnee:

I understand the concept. [laughs]

Justin:

You understand that Latin exists.

Sydnee:

Between my catholic upbringing and my exposure to medicine, I get Latin.

Justin:

[laughs]

Sydnee:

I get it. So, okay, rabies, it's been around for a really long time. Uh, we know that because people have been writing about some sort of illness that caused madness in dogs, uh, since 2300 BC. And- and that was written in Babylonian law, that if you own a dog, which I think is kinda interesting people were owning dogs in 2300, like-

Justin:

Yeah, you kinda just imagine them roaming free.

Sydnee:

No. I guess that long ago we were like, "Hey, look at those furry little wolves."

Justin:

"You can stay here, wolf. Live in my house, wolf."

Sydnee:

"You can stay with me, I'll feed you."

Justin:

Uh, people forget that about domestic dogs. At some point in history, that means that there was, there was one guy or lady who was like, "Hey, wolf, come live at my house."

Sydnee:

"I like you."

Justin:

"I like you, wolf."

Sydnee:

"I'll feed you." Um-

Justin:

We'll go full on White Fang here.

Sydnee:

[laughs]

Justin:

"Get in here, wolf. Live in my house."

Sydnee:

But- bu that was risky, 'cause if you had a dog, and it bit somebody and that person died, then they were going to find you.

Justin:

Hm.

Sydnee:

[laughs]

Justin:

Big risk.

Sydnee:

Which actually doesn't seem that bad.

Justin:

No.

Sydnee:

No.

Justin:

I mean, of all the things that could happen.

Sydnee:

And they knew, they had laws about this because they knew that sometimes dogs went crazy and bit people and people died, but they really didn't understand what- what any of that meant. They thought it had something to do with the lunar eclipse.

Justin:

Mm-hmm.

Sydnee:

And that it caused dogs to go mad.

Justin:

[laughs]

Sydnee:

[laughs] So, uh, this continues until, like, 500 BC when they actually write about the first recorded case of a disease, you know, that is probably rabies. And they thought it had something to do with nerves burning.

Justin:

[laughs]

Sydnee:

This was in a human. All their nerves caught on fire and they burned.

Justin:

Oh, well, maybe? I guess.

Sydnee:

No.

Justin:

Um, it's possible you're lacking some of the key components for a fire that even I, a modern man, uh, that doesn't have to build his own fire know about, there's heat, there's fuel, there's oxygen. And you don't have to have-

Sydnee:

You got oxygen in your body.

Justin:

Oh my god. You're right.

Sydnee:

Did you-

Justin:

We could be on fire at any moment.

Sydnee:

[laughs] Did you just say we don't have oxygen in our bodies?

Justin:

Not air oxygen.

Sydnee:

Did you think that ... [laughs] Not air oxygen?

Justin:

Not the gas-

Sydnee:

What kind of oxygen?

Justin:

Liquid oxygen, it's in your blood and stuff, right?

Sydnee:

Oh, honey.

Justin:

God, this isn't an act now. I wish this was an act, this isn't an act.

Sydnee:

[laughs] We're gonna have to talk sometime.

Justin:

We'll figure it out.

Sydnee:

So, Aristotle was the first one in 400 BC to write about, uh, the idea that this was something that could be passed from animal to animal. So ... Or from animal to human. That there's something in these dogs they, and again, a lot of this was written about dogs, that they would become mad, they'd bite other dogs, and they'd also become mad. So, this idea that something is being transmitted is already being written at this point. Now of course we have no idea what a virus is or anything.

Justin:

Mm-hmm.

Sydnee:

Um, the, uh, the Greeks thought that the best thing to do when there's a disease or something that's plaguing mankind and you don't understand it, is probably a sign to task to a god or goddess.

Justin:

Mm-hmm.

Sydnee:

So, the Greek god, Aristaeus, uh, son of Apollo, got the task of preventing rabies. So, if you wanted to not get rabies, [laughs] pray to him. And if you got rabies, then you switched to Artemis, the Greek goddess Artemis, whose task was to cure it. Which seems unfair.

Justin:

I wonder if that's a weird discussion with the god. Like, it's gotta be some impulse from the god that, like, "Oh, that sounds like a lotta work. Why don't you try Dave, the god, next door, I'm really swamped with everything I got."

Sydnee:

[laughs]

Justin:

"I come, I'm covering travel, crops, my 2013 PC is, like, full up."

Sydnee:

[laughs]

Justin:

"So, try, please try Dave, the god, he doesn't do anything. He's the god of staleness."

Sydnee:

[laughs]

Justin:

"That keeps your food from getting stale. That's it. That's all Dave does."

Sydnee:

[laughs]

Justin:

"Please, he's got room in his schedule for rabies."

Sydnee:

That- they really did load down gods with a lotta business.

Justin:

Just give them a break. Yeesh.

Sydnee:

I do like that they divided it out. Like, ooh, preventing and curing, that seems like an awful lot.

Justin:

I bet you that's how it, I bet somebody started a email chain or something that was like, "Listen, somebody's gotta help me with this, 'cause I cannot take this entire burden."

Sydnee:

The gods started an email chain?

Justin:

Yeah, "This is gonna mess up my four hour work week. I can't- can't both cure and prevent rabies."

Sydnee:

And you know this is way back in the day when email was super slow too.

Justin:

Yeah, right, it would take forever. [laughs]

Sydnee:

[laughs] Dial up and everybody-

Justin:

Tab- in stone tablets.

Sydnee:

[laughs]

Justin:

Papyrus.

Sydnee:

Uh-

Justin:

Pmail, that's what it was.

Sydnee:

[laughs]

Justin:

It was Pmail.

Sydnee:

Rabies really began to kinda permeate, uh, our ancient cultures as this, whatever it was, whatever rabies was, 'cause what I'm gonna, you know, again, we don't know what it is, it's something that causes dogs and sometimes humans to die, um, was this scary, mysterious, deadly thing. And that's probably why, if you see on some very ancient maps, on the edge of the map, where they don't know where, you know, what's past that, if you see a dog's head, that's why.



Justin:

Hm.

Sydnee:

That sometimes you'll see that on a map and it, and that dog's head, it represents the mysterious, the unknown, the likely dangerous, and it has to do with rabies.

Justin:

Syd, how did, you mentioned, like, ways that you could tell. How– how do you know if– if a dog or a person has rabies back in ye olden times?

Sydnee:

So, there were lots of ways, you know? Because they knew that some dogs had it, and you didn't know that they had it until they started foaming at the mouth and biting people. So, in the sixth century, so, what you could try to do is take some crushed nuts–

Justin:

[laughs]

Sydnee:

I don't think it matters what kind of nuts. And put them ... this is assuming you've gotten bitten.

Justin:

Okay.

Sydnee:

And put them in the bite wound.

Justin:

Pleasant.

Sydnee:

And then th– leave them there, leave them there for a day.

Justin:

Cool.

Sydnee:

And then take them back out and try to feed them to sort of fowl.

Justin:

[laughs] Okay.

Sydnee:

If the fowl will eat them—

Justin:

They are dumb, and you should—

Sydnee:

[laughs]

Justin:

You should sell them.

Sydnee:

And if it lived—

Justin:

This chicken's too stupid.

Sydnee:

[laughs]

Justin:

Please, someone buy it, I hate this stupid chicken, it ate my blood nuts.

Sydnee:

[laughs] Ew.

Justin:

It ate my crushed up rabies blood nuts, I hate this chicken.

Sydnee:

Well, but if it lives, then it, you don't have rabies.

Justin:

And—

Sydnee:

Or at least they thought. [laughs]

Justin:

And it would limit, I think, the— the sort of gastronomical appeal of eating that fowl in the future. "Oh, no, that's the one with a belly full of rabies blood nuts, I'm gonna go ahead and just ... that'll be for company. I'll save this chicken."

Sydnee:

"That'll be my company chicken?" [laughs]

Justin:

"That'll be the company chicken."

Sydnee:

It'll be my comfort chicken?

Justin:

I'll b— I'll be having, like, leeks that night or something.

Sydnee:

We'll just let the kids play with this one.

Justin:

Yeah, this is the—

Sydnee:

[laughs]

Justin:

This is the kids' pet chicken, Stupid, the chicken. The one that eats bloody rabies nuts.

Sydnee:

Uh, the other thing you could try to do is take a piece of bread and soak it in the blood from your bite wound, and then try to feed that to another dog.

Justin:

Okay. And then that's good, because it gives dogs a taste for your blood.

Sydnee:

[laughs] The theory that a lot of-

Justin:

These are all fool proof. "Oh, this is delicious. You mean I can have this flavor whenever I want just by biting human flesh? Cool, thanks for, thanks for making such a cool dog."

Sydnee:

It's kind of a, it's kind of a two part test, because the theory was that animals were smart enough that if there was rabies in there, they wouldn't eat whatever you were giving them.

Justin:

These are the same animals by the way that got the rabies in the first place.

Sydnee:

[laughs]

Justin:

And were, and now they're the sooth-sayers protecting us from. Good job, humanity.

Sydnee:

I really like this one. So, you could also try, uh, picking up a rooster, a live rooster, and holding its butt to the bite wound.

Justin:

Okay.

Sydnee:

And if the rooster swells up and dies, then you have rabies.

Justin:

Okay. No danger of infection there, which is good.

Sydnee:

I don't know which kinda germs live in a rooster butt.

Justin:

Not good ones.

Sydnee:

[laughs] Um, or you could always, the dog that bit you, go ahead and cook it, rub its flesh on your teeth, and then offer that to another dog to eat.

Justin:

[laughs]

Sydnee:

[laughs] Which, I mean, I guess you got your retaliation on the dog.

Justin:

I would think I would probably lean towards some of those other methods of divination. Like, this sounds like somebody who's really ... uh, once you need that, like, third or fourth opinion, uh, maybe just don't do this one. Maybe just accept whatever results you've gotten so far.

Sydnee:

The theory nowadays is that if a dog just viciously attacks somebody unprovoked, that there is a possibility they might have rabies, 'cause most domestic animals don't do that. Um, most, I should say. But, uh, back then, I guess, with so many dogs being feral, you wouldn't necessarily know.

Justin:

Hm.

Sydnee:

A dog might just attack you 'cause it was, you know, a wild dog. It was a wolf actually. [laughs]

Justin:

Right.

Sydnee:

A wolf in disguise. So, obviously, we know how to, we know how to diagnose it now.

Justin:

Right.

Sydnee:

We have a great plan. How do we cure it? So, we figure out you've got rabies. Um, some of the cures that you can read about are for dogs, uh, and some of the cures are for humans. So, to start off with, for some, just a couple of dog cures, the best cure is prevention, I think.

Justin:

Mm-hmm.

Sydnee:

So, instead of waiting for your dog to get rabies, you could just go ahead and at 40 days of life cut off their tail. This was supposed to prevent your dog from ever getting rabies.

Justin:

Sure.

Sydnee:

Don't do that.

Justin:

Don't do that.

Sydnee:

I'm not advocating you cut-

Justin:

That's cruel.

Sydnee:

That's cruel. You could also, they thought that dogs had worms beneath their tongues. Which was probably just actually the little piece of connective tissue.

Justin:

Oh, stop it, that's disgusting.

Sydnee:

And they would cut that out too.

Justin:

Oh, stop, stop, stop.

Sydnee:

I know, it's terrible. And then, you could also just feed them juniper berries, which seems nicer to me. [laughs]

Justin:

Yeah, that's fine.

Sydnee:

I'm assuming that juniper berries aren't poisonous to dogs, 'cause I don't know, don't try that. I have-

Justin:

Not a neurobiologist, folks.

Sydnee:

I'm not a vet, I have no idea. I don't know. Um, the Greeks and the Romans both had a pretty direct way of preventing rabies, which was that they had a special time of the year when you just killed all the dogs you found.

Justin:

Wow.

Sydnee:

They thought that it had to do with the appearance of Sirius, the dog star-

Justin:

Mm-hmm.

Sydnee:

... in the sky, that something about it, you know, once that time of year came around, that you could see that star, that it would trigger rabies outbreaks. So, just go ahead and at that time kill all the dogs you can find.

Justin:

Man, that's short-sighted.

Sydnee:

Yeah, that's not very nice.

Justin:

It's cruel.

Sydnee:

No. That's a really terrible thing to do, don't kill all the dogs. Um, Pliny had a lotta things to say about this.

Justin:

Oh, yeah.

Sydnee:

Uh-

Justin:

That's unsurprising.

Sydnee:

He also thought it maybe caused by that tongue worm. That worm that lives under dogs' tongues. But, um, but a lot of his cures, of course, were about humans. So, first of all, as we may have mentioned previously in our, uh, hangover cure episode, this is where the term, "Hair of the dog," comes from. He said that if you take the tail of the dog that bit you, burn it, you gotta cut, you gotta cut it off, you gotta burn it, and then put the ashes in the wound, um, then that would cure your rabies. So, that's where, "The hair of the dog that bit you," that's where that comes from.

Justin:

Wow, I didn't know that.

Sydnee:

The cure for rabies. Uh, not cure. Uh, supposed cure.

Justin:

Not. Uh, yeah. Fake cure.

Sydnee:

Alleged cure. [laughs] Uh, you could also, if you didn't wanna set the dog's tail on fire, which I don't, you could also try a cloth that's soaked in a female dog's menstrual blood.

Justin:

Oh, great. That's easy, easy to come by.

Sydnee:



I think that I don't know which one's worse.

Justin:

They're both pretty bad.

Sydnee:

Or you could just take a dead dog and take a maggot from it.

Justin:

And do what with it?

Sydnee:

Put it in the wound.

Justin:

Oh, okay, perfect.

Sydnee:

Yeah. You- you're, no, you're gonna put this in your wound, whatever we're talking about.

Justin:

You're gonna put something in your wound, and it's not gonna be pleasant-

Sydnee:

No.

Justin:

... and you're gonna hate it, and you're gonna be sad.

Sydnee:

[laughs]

Justin:

It's just what is that thing gonna be.

Sydnee:

Um, you could also, he also thought that maybe you could get it by being exposed to dog urine. Everybody kinda knew about the bite thing, but he also was like, "Well, you know, pee is pretty gross too. So, you may wanna stay away from dog pee." So, he specifically advised against walking in dog

pee, especially if you have, um, like, if your feet are all torn up, [laughs] if you got cuts on your feet, don't walk around in dog pee. Which, I mean, I guess that's good advice.

Justin:

Sure.

Sydnee:

You know? If you've got scratched up feet, don't walk in dog pee? Why are you walking barefoot through dog pee?

Justin:

Maybe don't ever walk in dog pee, if you can avoid that.

Sydnee:

So, I'll give Pliny that one. No, I don't, you're not gonna get rabies that way, but it's pretty gross to walk barefoot in dog pee.

Justin:

Just as a rule of thumb, don't do it. If that's a habit you developed in trying to avoid rabies, like, that seems like a good- good play.

Sydnee:

Yeah, I think that's a good idea. Even if your, even if your feet aren't scratched up. I think even if the skin's all intact, just go ahead don't do that.

Justin:

Yeah, why not?

Sydnee:

Um, Celsius came up with a cure. He said that what you need to do is, um, clean the wound, suck out any saliva ... Ugh...

Justin:

Ugh.

Sydnee:

... that you can find.

Justin:

Sucking dog drool out of an open wound?

Sydnee:

And then ... Yes. And then cauterizing it, burning it. You know, taking a hot iron and holding it to it. Um, this was probably the predominant treatment that people turned to for about 2000 years afterwards.

Justin:

Oh, gosh.

Sydnee:

Um, there were some other crazy things tried here and there. In 200 AD there was a case report, [laughs] if you like, a case report, [laughs] of some boys who were bitten, um, and they were injected with, uh, venom from seahorse stomachs? I didn't know seahorses had venom.

Justin:

This was, yeah, that's news to me.

Sydnee:

Yeah, this did not work. Um, and then a lot of new things would pop up with the first huge human outbreak, which was in the 1200s. And after that, you see rabies crop up periodically throughout the centuries. Um, it's not like, you know, the plague, where there was the one big time when everybody got rabies and then that one other big time. It just kinda crops up when things get really crowded and there are a lot of animals, and a lotta people living close together.

Um, one popular cure that I guess, again, was not harmful, was that you could, um, pray to St. Hubert, who was the patron saint of rabies, 'cause there's- there's ... you know, much like the Greeks had a god for everything, we like to have a saint for everything. So, the patron saint of rabies. And you could travel to his shrine in Belgium, when you were infected, which does not sound like a fun thing to do when you are suffering from rabies.

Justin:

Yeah, but what does?

Sydnee:

But ... Uh, you could also try the treatment called St. Hubert's Key, which is to take a key ... you, I guess you gotta get it blessed at the shrine of St. Hubert, and then you get it really hot and you burn yourself with it.

Justin:

Uh...

Sydnee:

They also tried branding dogs this way, to try to prevent them from getting rabies.

Justin:

Ugh.

Sydnee:

And then of course there were tons of different herbal remedies, you know, that people tried. Every, every herb you can think of was mixed into a rabies concoction at some point, either to apply as a poultice, or as a drink.

Justin:

Mm-hmm.

Sydnee:

Of course blood letting was tried for rabies, it was tried for everything else. And there was even this kind of idea, since we knew that in humans it caused that hydrophobia symptom—

Justin:

Right.

Sydnee:

... that you could try this kind of aversion therapy, where you would just hold the person under water, [laughs] unti—

Justin:

Oh, god.

Sydnee:

And you would do it, uh, the instructions were, "Until he sputters."

Justin:

Sputters?

Sydnee:

Until he sputters, and then you can let him back out.

Justin:

That seems a little risky to me, Syd.

Sydnee:

That seems very risky to me. I mean, he's under water, how do you know when he's sputtering. What is sputtering?

Justin:

[laughs] So, what's next?

Sydnee:

Well, Justin, I'm gonna take you on our, on our rabies tour through history, but before I do, you're gonna have to make a pit stop.

Justin:

All right. Let's go to the billing department.

[theme music plays]

[ad break]

Justin:

All right, Sydnee, I'm ready.

Sydnee:

So, rabies continues to spread, and continues on its march across the world. Uh, it spreads through Europe, it spreads through the Americas. A lot of this is with travel, a lotta this is with– with us, not because we're bringing rabies, but because, you know, man's best friend. [laughs]

Justin:

Right.

Sydnee:

We love our dogs, and we take them everywhere, and we give everybody rabies. Um, there were laws passed many places as rabies, uh, became recognized as, again, something, some sort of strange madness that overtook animals, uh, that you kill a sick animal right away. That was something that was, that was started. Uh, there were even in some places, laws against owning dogs at all, because, you know, you can never be too sure. Uh, muzzle laws were also enacted in some places. You could have a dog but you had to keep it muzzled all the time to prevent it from biting people, because we didn't know, you know, what was trans– ... We didn't

know what it was, but we knew we were getting it from dogs, so. I guess the theory was, "We like people better than dogs, let's just get rid of the dogs."

Justin:

Yeah.

Sydnee:

Um, there's some interesting things about rabies since it has permeated our culture for such a long time. You know, this fear of rabies, and it's a, it's a very dramatic illness.

Justin:

Mm-hmm.

Sydnee:

You know? It does dramatic things to dogs, it does dramatic things to humans, so people like to talk about it and write about it. Um, there are ancient Indian texts that reveal, like, different recipes for poison arrows.

Justin:

With rabies? Like rabies arrows?

Sydnee:

One of them included the, um, the blood of a man and a goat, in order to induce what they called biting madness.

Justin:

Hm.

Sydnee:

So, the thought is that these were probably poison arrows tipped with rabies. Um, and in 1650, there was a Polish general who said, "You know, what would really [laughs] get our enemies is if we took the saliva of all these mad dogs, put it into glass balls, and then catapulted them at the enemy."

Justin:

Perfect, why not?

Sydnee:

[laughs]

Justin:

Sure, it's worth a shot.

Sydnee:

I don't think anybody did that, but it's an interesting concept for biological warfare. As far as I know, rabies has not actually been used as a biological weapon.

Justin:

That's a relief, that's something.

Sydnee:

Um, it's also permeated popular culture in the form of mythology. Rabies is probably, at least in part, the inspiration for a couple of our, uh, big, bad movie monsters.

Justin:

Like who?

Sydnee:

Like werewolves, for instance.

Justin:

Okay, one good thing. Teen Wolf, from rabies. Thank you, Rabies, for Teen Wolf.

Sydnee:

[laughs] I don't know, I don't know that rabies makes you better at basketball.

Justin:

It's impossible to say. I would bet it doesn't, speaking generally.

Sydnee:

But the thought was that when humans got this biting madness, whatever it was, because we still didn't know, uh, and, you know, after they were infected with rabies, that they became more animal-like.

Justin:

Hm.

Sydnee:

And so, it was feared that much like dogs became mad and bit people, that maybe humans would go crazy and bite people, attack people, hurt people. And so, this maybe partially the basis for the werewolf myth, and then also vampires.

Justin:

Wow.

Sydnee:

Um, you kind of see, like, the spread of the vampire myth, uh, with the spread of the rabies virus. They kinda follow the the same pattern, especially in the 18th century. You see the two kinda travel across the, across Europe together, which, you know, kinda leads us to believe that maybe that was the basis for it. People with rabies tend to not like a lot of intense stimuli when they're in the throes of the actual illness. So, things like, um, water, maybe the holy water thing–

Justin:

Hm.

Sydnee:

... or bright lights would bother them. Strong smells, like maybe garlic. And they also tended to have insomnia, so they would stay up all night. And of course there was the whole biting thing.

Justin:

Would I trade True Blood for rabies? Uh, would I eradicate rabies from history if it would mean True Blood would disappear? I don't know. I can't answer that. I can't answer that question.

Sydnee:

And there's– there's a lot, of course, that go into these mythologies. And I'm sure there are people who are, who have written great tomes on the vampire myth and the werewolf myth. And I'm not proposing that all of it stems from rabies, but it didn't hurt.

Justin:

Fact.

Sydnee:



Now, eventually we got smart about rabies. Um, in 1881, Louis Pasteur... That's probably a name you've heard.

Justin:

Yeah, he, uh, pasteurization.

Sydnee:

Exactly. So, he started researching cures for rabies with Emile Roux. And they, uh, tried out their first vaccine, they actually created a rabies vaccine, on a human that had already been bitten by a rabid dog. And he survived.

Justin:

Wow.

Sydnee:

And you know what was interesting is, they actually did this without isolating the virus. Most of the time now when we make vaccines, and I think we talked about this before, you actually have to have, you know, under the microscope, you have to be looking at, like, the virus or the bacteria or whatever causes it, to know what to do with it, to make a vaccine. This was just parts of, uh, I believe it was part of a dog's spine. Or, you know, um, spinal cord.

Justin:

Huh.

Sydnee:

So, it was part of the dog's central nervous system that they used to make the vaccine. Which made sense, 'cause the virus was there. But, uh, this was also the first, what we would think of as an attenuated vaccine. Meaning that it had the virus, but it was in a weakened form. This is a huge deal, this concept of vaccination.

Justin:

Hm, not just for rabies, but spread out?

Sydnee:

Through all vaccine history, this is a really big deal. Um, over time of course we refined the vaccine, uh, once we understood what the virus was, we were able to do a better job at creating a better vaccine, and then, you know, the main thing was, why don't we vaccinate all the dogs?

Justin:

That's a fine idea.

Sydnee:

Which is what we started doing.

Justin:

Huh.

Sydnee:

Uh, and of course, you know, nowadays, that's why in the United States, you're very unlikely to encounter a rabid dog. Not that it's impossible, but it's— it's highly unlikely. What's interesting about the rabies vaccine is that we tend to think about vaccination as preventative, right?

Justin:

Right.

Sydnee:

So, when should you get vaccinated for rabies?

Justin:

Before you're attacked.

Sydnee:

Exactly. However, because it takes the virus, I mentioned that it can take months, for, you know, you to actually manifest symptoms, because it takes the virus so long to spread to your central nervous system, if you get vaccinated pretty quickly, you're fine.

Justin:

Hm.

Sydnee:

So, you'll actually survive and not get rabies. So, it's a post-exposure prophylaxis, is what we would call it. After you've been exposed to rabies, you can go ahead and get the vaccine and prevent the infection.

Justin:

Hm.

Sydnee:

So, if you were to get bitten by a dog, you should go check out at your local health department, or your family doctor, and tell them about it. And of course, as I mentioned, nowadays, rabies in dogs is very rare in this country. Um, bats are actually a bigger deal.

Justin:

Hm.

Sydnee:

Again, not a huge threat. We don't see a lot of cases of rabies. But if for some reason you find yourself exposed to a bat, that would be another reason to go visit your doctor, your health department, your ... that's what we are.

Justin:

That's great, because I've been cool on bats for a while. So, now I'm glad I have a reason to finally be afraid of those flying mice.

Sydnee:

[laughs] Um, you're probably not gonna get rabies from a bat.

Justin:

Probably.

Sydnee:

This is not my, again, don't own bats. Why would you own a bat? Don't own a bat.

Justin:

Don't own a bat. What's wrong with you?

Sydnee:

Bats aren't good pets. But if you get exposed to a bat, go see a doctor. Um, before you do that, if you did get bitten by a dog or a bat, you should wash it out right away. That's actually something you should do. Wash it with warm water and soap and then go see a doctor. If you get the vaccine, no big deal. There are protocols for people who don't receive the vaccine in time.

Justin:

But they ain't great.

Sydnee:

They're not great. We have a couple of successes, but it's rare, so-

Justin:

I thought there was one success ever. You told me.

Sydnee:

I think there's two now.

Justin:

Two now. Okay, so not great.

Sydnee:

Two now. No.

Justin:

To reiterate.

Sydnee:

No. No. Not nearly as effective. It's much better to, if you're, if you think you've been exposed to rabies, go see a doctor. Um, and if you're doing some out of country travel, it's a good, it's a good reason to go talk to your doctor about, are dogs there vaccinated? 'Cause not all, um, places in the world are they on top of their dog vaccination programs as well as we are, so.

Justin:

That is rabies, folks. Thank you so much for listening. I wanna thank, uh, everybody who's been, uh, talking about the show and T- Tweeting about, I believe that's the, uh, term, T- Tweeting.

Sydnee:

Tw- Twittering?

Justin:

Twittering about the- the show. Uh, at, uh, Andrew Sutton, Leah, Steven, Ellis, Kurtis Morrison, uh, Jillian Daniels, Amy Eastman, Lindsay Astrom, uh, Brenna, Ariel, Claire, Naomi. Thank you so much to everybody, uh, who's tweeted about us. We're @sawbones on Twitter. It's pretty easy.

Sydnee:

Or you can tweet at us. @JustinMcElroy.

Justin:

And she's @SydneeMcElroy, S-Y-D-N-E-E. We're on the Maximum Fun Network, and we got a ton of other great podcasts for you to listen to. Just go to [maximumfun.org](http://maximumfun.org) and find Lady to Lady, One Bad Mother, The Goosedown, Jordan, Jesse, Go! Stop Podcasting Yourself.

Sydnee:

My Brother, My Brother and Me.

Justin:

Thank you so much, dear. And so much more. Uh, just go, uh, go listen to all those, you deserve it.

Sydnee:

And keep sending us your topic suggestions. Like Justin mentioned, you can email it to us.

Justin:

Uh, we're [sawbones@maximumfun.org](mailto:sawbones@maximumfun.org). It's easy. And, um, look for us on Facebook and like us there. I think that's everything. Please subscribe to the show on iTunes and leave us a review and a rating, and be sure to join us again next Tuesday for another episode of Sawbones. Until then, I'm Justin McElroy.

Sydnee:

I'm Syndee McElroy.

Justin:

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

[theme music plays]

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