

## Sawbones 002: Mercury

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[Intro music]

**Justin:** Hello everybody and welcome to Sawbones, a marital tour of misguided medicine. I am Justin McElroy.

**Sydnee:** Hey and I'm Sydnee.

**Justin:** Sydnee is a medical doctor, but of course nothing she says should be taken as literal medical advice here on our program.

**Sydnee:** No. Everything I say may not be true. I may have completely made it up. Oh, I didn't just completely make it up.

**Justin:** You could do the reverse. Should everybody either reverse or...

**Sydnee:** Do the reverse of... No? Because what if I say something that's a good idea?

**Justin:** Just don't listen to anything—

**Sydnee:** No, just don't... Just consider this, y'know, just infotainment.

**Justin:** In—[laughs]

**Sydnee:** [laughs]

**Justin:** You're on the super infotainment highway.

**Sydnee:** It's just... It's interesting and then you're glad you listened to it and then don't ever remember it again.

**Justin:** Just don't ever think about it. Just remember it as a pleasant, pleasant haze that you were in for 30 or 40 minutes.

**Sydnee:** Sit back, have a drink. Don't do any drugs though.

**Justin:** So, Sydnee—

**Sydnee:** And listen to this show.

**Justin:** Teach me something.

**Sydnee:** Well, I have a question that's completely unrelated, but has been preying on my mind for some time Justin.

**Justin:** Hit me, Syd.

**Sydnee:** Who's your favorite character from Alice in Wonderland?

**Justin:** Umm...

**Sydnee:** That's a normal thing that married people need to know about each other.

**Justin:** We have these flash cards, they say, "Keep it fresh flash cards."

**Sydnee:** Keep the conversation going.

**Justin:** Keep the conversation going 'cause...

**Sydnee:** Long after you have things to say to each other.

**Justin:** My favorite character from Alice in Wonderland is the caterpillar, I guess.

**Sydnee:** Wrong answer.

**Justin:** Okay.

**Sydnee:** Try again.

**Justin:** Uh, the rabbit? Br'er Rabbit?

**Sydnee:** That's not... Okay, that's not a character from Alice in Wonderland, and that's still not the right answer.

**Justin:** Okay. The little mouse in the teacups.

**Sydnee:** No. You're really killing it. I really thought this would work, and it's not working anymore.

**Justin:** Okay. I guess, I'm running out... The Mad Hatter.

**Sydnee:** There you go! That's it! I knew it.

**Justin:** Is that the right...?

**Sydnee:** What a coincidence, me too.

**Justin:** [laughs hard]

**Sydnee:** I knew there was a reason we were married.

**Justin:** [sarcastic] Finally, some common ground after all these years.

**Sydnee:** Your fourth favorite character in Alice in Wonderland is the same as what I'm pretending mine is for this show.

**Justin:** Now, Sydnee, why are you pretending that that is your favorite character from Alice in Wonderland?

**Sydnee:** Well, do you know why the Hatter was mad?

**Justin:** Um, I dunno, I guess 'cause Lewis Carroll wrote him that way, right?

**Sydnee:** Well, I mean, it's more than that. Why would... I mean, where does that even come from? Where does the idea that... I mean, what is a hatter? Do you know what a hatter is?

**Justin:** He's a guy who loves hats.

**Sydnee:** He's a guy who makes hats.

**Justin:** Makes hats.

**Sydnee:** He makes hats.

**Justin:** He's a guy that makes hats. I said that the first time.

**Sydnee:** Yeah. And he's mad, but he's not angry, right?

**Justin:** Right. He's crazy.

**Sydnee:** Right. He's crazy. So how did he get that way?

**Justin:** I dunno, Syd.

**Sydnee:** Okay.

**Justin:** You're the doctor. Christ.

**Sydnee:** Well, don't get so upset.

**Justin:** I won't. I'm sorry.

**Sydnee:** I'm gonna tell you.

**Justin:** I'm trying to keep it under control.

**Sydnee:** So, a lot of people are actually already familiar with this. So, the Mad Hatter was named so... And actually, this is just, to be completely fair, this may be apocryphal, that this is why he was named the Mad Hatter.

It's not a hundred percent clear that this was what he was referencing. But what a lot of people think is that the Mad Hatter is a reference to the fact that you used to use mercuric nitrate in the process of felting a hat.

And a lot of people who made hats suffered from chronic mercury poisoning, which could have neurological effects and psychiatric effects on the patient.

**Justin:** Mercury. Now, here's what I know about mercury.

**Sydnee:** Uh-huh.

**Justin:** Is that I saw it on Mr. Wizard once, and they played with it.

**Sydnee:** And what did they do with it?

**Justin:** It kind of just jiggled around, because it was like a liquid... It was like T2. It was like Terminator 2. It was like liquid metal.

**Sydnee:** And they played with it?

**Justin:** They played... I mean, if memory serves, and I guess this was dangerous in retrospect, but if memory serves they were picking it up with their hands and playing with it.

**Sydnee:** Well, it's actually, depending on what form it's in, mercury is not actually quite as dangerous as you might assume. But let's go into, what does Justin know about mercury, to begin with?

**Justin:** I literally just gave you everything I have.

**Sydnee:** So, for starters, mercury has an atomic number, and it is any number that's on the periodic table, and I'm going to let you guess it number by number until you get it right.

**Justin:** Okay.

**Sydnee:** So just start, and when you get there, we'll stop.

**Justin:** This is fucking thrilling, thrilling podcast audio. Let me start with...

**Sydnee:** Okay, it's 80. That was boring, we're not going to talk about it anymore.

**Justin:** I was gonna guess 80. That was my guess.

**Sydnee:** Mercury is... Actually, the symbol for mercury on the periodic table is Hg, because it comes from the Latin hydrargyrum.

**Justin:** Okay.

**Sydnee:** Which is liquid silver. Also, argentum vivum, living silver, because mercury looks like it's alive, which is what makes it so interesting. And it has fascinated chemists and alchemists and scientists and physicians all throughout history.

It is the only metal that's liquid at room temperature. Did you know that?

**Justin:** I did not know that.

**Sydnee:** It's so dense, it can float lead.

**Justin:** Whoa.

**Sydnee:** Yeah. Thanks for pretending to be impressed.

**Justin:** I am impressed.

**Sydnee:** The thing—

**Justin:** I wish I had that much mercury that I could see some lead float in it. I would like to do that on the podcast.

**Sydnee:** Well, as you'll learn later, then you might, y'know, get the shakes, so be glad you don't.

**Justin:** Ooh. Okay.

**Sydnee:** So, the thing about Mercury that made people so fascinated, was one, its appearance. You've probably seen it, at some point. It's referred to as quicksilver, sometimes.

**Justin:** Oh, is that the same thing?

**Sydnee:** That's what people mean when they say "quicksilver." Yeah, mercury, because it's silver and shiny and it's liquid and it looks cool, and yes, it looks like T2. The second Terminator, for those of you who aren't familiar.

And the thing about it is that... SO do you remember, Justin, about atoms?

**Justin:** Oh God...

**Sydnee:** There's like a little bundle of protons and neutrons in the middle. Like a little bunch of grapes in the middle?

**Justin:** Yeah. There's space in there.

**Sydnee:** And there's space, yes.

**Justin:** A lot of empty space.

**Sydnee:** And space. And then there's stuff floating around on the outside called electrons. Kinda remember that?

**Justin:** Yeah, I got it.

**Sydnee:** Okay. Well, the thing about mercury is it's got these two electrons floating around on the outside of it that bond really easily with other metals. So you can make amalgams with it.

**Justin:** Now what's an amalgam?

**Sydnee:** You know, it's just two things mixed together. Two metals mixed together.

**Justin:** Oh, okay. Dig it.

**Sydnee:** Yeah. So, the thing about it is that you can use... The reason that mercury became so important is that you can use it to collect precious metals.

**Justin:** Oh, how?

**Sydnee:** So, you take like a metal ore, so like a gold ore or a silver ore, which is the raw material that contains gold or silver.

**Justin:** Okay.

**Sydnee:** And then you mix it with mercury, and mercury will bind to just the precious metal part. So, then you just have this amalgam of gold and mercury, or silver and mercury, or whatever.

**Justin:** That's crazy.

**Sydnee:** And then you can heat it up, the mercury evaporates off and then you've got pure gold or pure silver.

**Justin:** That's fantastic.

**Sydnee:** Yeah. So it became very important for a long time in Spain and Italy and Peru, you would mine cinnabar, which is the raw elemental form of mercury, and you would take it and send it over to the new world and

make these gold and silver amalgams in the new world and then send that back over just a purified precious metals.

**Justin:** That sounds very useful.

**Sydnee:** Yeah. So anyway, for Egyptian chemists, Roman, medieval Arabian, European, they were all using mercury in all these different experiments.

They actually thought, because it bonded so well with other things, that it was the mercury itself that might be able to change form. So, it was very important in alchemy.

They were trying to use mercury to make gold and silver, as opposed to just using it to get gold and silver, they were trying to use it to make gold and silver.

**Justin:** Now, Sydnee, I'm hearing a lot of information about mercury, and God knows I appreciate anything I can get, about any... Really, any relevant information about any topic that I can take into the world and use, maybe on Jeopardy or something like that.

**Sydnee:** Uh-huh.

**Justin:** But this show is about medicine.

**Sydnee:** Right.

**Justin:** So, what are... Tell me about some of the applications for mercury outside of just weird old wizards.

**Sydnee:** The thing about mercury is that any material like that, that has so many uses kind of takes on a magical quality among scientists. Especially before we really understood the way the world worked.

The most basic application of this is actually mercury amalgams that were used for dental fillings.

**Justin:** [sarcastic] Oh, that sounds good.

**Sydnee:** So, on a very basic level, the fact that mercury made all these amalgams made people think, "Hey, you could, you know, use it with other substances and stick it in teeth."

**Justin:** I guess?

**Sydnee:** And so we used to do that. It's not really...

**Justin:** That sounds less than healthy.

**Sydnee:** Yeah.

**Justin:** Less than ideal.

**Sydnee:** Less than ideal. And before we get into the actual ways that we, you know, used mercury itself as a treatment, I think the most widespread use of mercury in medicine you're probably very familiar with.

**Justin:** Uh, lube.

**Sydnee:** Did you just say, "lube"?

**Justin:** Lube. Yes, lube. Durable—

**Sydnee:** What kind of mercury are you using?

**Justin:** Liquid.

**Sydnee:** What kind of lube are you using?

**Justin:** Liquid metal. Lube.

**Sydnee:** Okay. No.

**Justin:** For robots. Robot sex lube.

**Sydnee:** No, honey, no.

**Justin:** Possibly.

**Sydnee:** No. Thermometers!

**Justin:** Oh, yeah! You don't see those much anymore so it didn't occur to me. I prefer the digital kind. It's easier for rectal use.

**Sydnee:** We'll leave that be. So, in 1714, Fahrenheit invented the thermometer, the mercury thermometer.

**Justin:** There was actually a guy named Fahrenheit?

**Sydnee:** Yeah.

**Justin:** I guess there would be.

**Sydnee:** Joe Fahrenheit.

**Justin:** Joe Fahrenheit. Douglas Fahrenheit.

**Sydnee:** Old Joe Fahrenheit.

**Justin:** Crazy Joe Fahrenheit. He's always putting mercury in glass tubes, he says one day it's gonna come to something. None of us believe him, but who the hell knows?

I dunno. He seems to have it going on. Seems to have it figured out.

**Sydnee:** Okay, so I wanted to get across to you the idea that mercury was this important substance. And especially in traditional Chinese medicine is where you see a lot of mercury used as an actual treatment.

It was thought in 2<sup>nd</sup> century China that you could actually ingest mercury and it would make you live longer.

**Justin:** Oh.

**Sydnee:** So very small amounts of elemental mercury you would just, you know, eat.

**Justin:** No, I'm assuming this goes in with the... Something that's become, I would say a common theme here, in Sawbones, is people just fucking guessing. Just guessing.

**Sydnee:** Yeah.

**Justin:** Just making it up and doing a thing and hoping it didn't kill people, except yes it did.

**Sydnee:** Well, and I think what you see is that something seems really cool and interesting like mercury, you know, quicksilver, and it seems like it might have magical properties.

And if you just eat elemental mercury or the cinnabar form of mercury, it actually, in small amounts, is probably not going to cause you much problem.

I mean, so if you—

**Justin:** That's a ringing endorsement for medical mercury.

**Sydnee:** Well no, don't do it. But the people who used it traditionally probably didn't have a lot of problems from it.

And you know, placebo effect, they thought, "Who knows? You know, maybe. Maybe it was the mercury. Why not?"

Aristotle actually thought you should use it for skin disorders. So at least he wasn't eating it, he was saying, "Just rub it all over you."

There was also, in the fourth century, it was believed you could smear it on your feet and you could walk on water. You'd think that that—

**Justin:** [laughing] The first time, right?

**Sydnee:** [laughing] That that probably was dispelled pretty quickly when it didn't work.

**Justin:** How did that make it into a book? The first time. Someone's like, "I'm just gonna give it a shot."

**Sydnee:** You could smear it over your door to ward off thieves.

**Justin:** That's a little bit harder to quantify I guess. Because the first time a thief reached in, is like, "Eugh. What is this? Gross."

**Sydnee:** If you mix it with raspberry juice, then you can give it to old dudes and it's better than Viagra.

**Justin:** Is that true or is that some more—

**Sydnee:** Nope.

**Justin:** Nope.

**Sydnee:** Again, something they thought. They also thought it was an aphrodisiac for women.

**Justin:** Okay. But no, I'm assuming?

**Sydnee:** Well, you wanna? Hey.

**Justin:** Hey.

**Sydnee:** Hey.

**Justin:** Hey.

**Sydnee:** Why don't we find out big guy?

**Justin:** Hey, hey.

**Sydnee:** It could also be used as a contraceptive, which seems pretty handy, that it was an aphrodisiac and a contraceptive. So there you go.

**Justin:** It's an all-in-one.

**Sydnee:** Get her in the mood with no worries.  
And, I think—

**Justin:** It's like the music of young Elvis and the music of old Elvis. It just works both...

**Sydnee:** Conveniently, aphrodisiac, contraceptive, Viagra replacement, early Viagra.

And in the 15<sup>th</sup> century, in Europe, we learned that it was a treatment for syphilis.

**Justin:** When you say, "learned," you're saying... I mean, still just making it up, right?

**Sydnee:** Well, if you apply enough mercury to a syphilis shanker, you probably are gonna kill something there. It actually... That was the most widespread medical use for mercury, probably of all of them, was as a topical treatment for syphilis.

And you have to understand, at that time, in Europe, everybody had syphilis.

**Justin:** [huge laugh]

**Sydnee:** And so—

**Justin:** It's a groovy time to be alive.

**Sydnee:** ... the thought was, "Hey, let's just try everything. Something's gotta work."

**Justin:** "I will put everything on my [bleep] that I can find. Liquid metal? [bleep] it."

**Sydnee:** Hey.

**Justin:** I'll Johnny Tremaine my penis, I don't care.

**Sydnee:** Hey, this is a clean show. So it was very popular as a treatment for syphilis for a while. That was probably, again, that was the most widespread medical use.

Now, did it work? Again, I don't know. Probably not. But you know, the thing with syphilis is that the initial sore, the initial shanker, does go away.

So if you put mercury on it, it would go away. But it probably had nothing to do with the mercury.

**Justin:** Oh, okay.

**Sydnee:** The problem with mercury is that obviously it's also a poison.

**Justin:** Yeah, I'm afraid of that.

**Sydnee:** It mainly has effects on the central nervous system, especially if it's in organic form. There are different forms of mercury, which would be boring to get into.

But certain forms, if ingested, can definitely be toxic. They can cause chronic effects. They can affect your thyroid, your kidneys. Definitely your central nervous system.

That's where, in Danbury, Connecticut, there used to be a hat factory, and that's where, if you've ever heard the term, "The Danbury Shakes" ... You haven't?

**Justin:** No. What am I, 80?

**Sydnee:** Sorry. Anyway, it was because if you worked in this hat factory you all had a tremor, because of the central nervous effects of mercury.

**Justin:** God, the price we've paid for hats.

**Sydnee:** Actually, Chinese emperor Shen Nung, the father of Chinese medicine, he believed in a potion of powdered jade and mercury to promote eternal life.

**Justin:** Wow, that both... That sounds really bad for you.

**Sydnee:** Yeah, he died from mercury poisoning in 210 BCE.

**Justin:** Oh no.

**Sydnee:** Oh.

**Justin:** Oh Shen Nung.

**Sydnee:** Oh.

**Justin:** Oh.

**Sydnee:** That's too bad.

**Justin:** I trusted you. You wrote a big thing about plants.

**Sydnee:** And I think it's also important to know, and this is probably on the less toxic side of mercury, you know, there were a lot of older religious traditions and medical traditions, like the Vedic religion and the ayurvedic medicine that's kind of the root of Hinduism.

They would use mercury, just in the form of beads and rings and bracelets, you know, to wear and rub on your skin and hold against you as kind of an herbal... It's not even an herbal, medicine.

But you know, a religious-based medical treatment like faith-healing and that kind of thing. Which isn't, I know that's outside of the bounds of what we consider medicine, but at the time, that's a very valid cure for something.

So you've got tuberculosis, you've got epilepsy, you know, you have a stroke. "Here. Wear this mercury ring."

**Justin:** Yeah, why not?

**Sydnee:** "And see how things shake out."

**Justin:** Give it a try. What's the worst that could happen?

**Sydnee:** There's a whole rasa shastra, which is in the Vedic religion, that's the science of mercury. And it basically combines mercury with herbal medicine.

So different herbs with small amounts of mercury to treat people as well. And it's a whole medical... It's a whole medical tradition based on mercury.

**Justin:** Now Syd, did this every kind of catch on as a medical... As slightly more, you know, "official" medical application?

**Sydnee:** It did. I think the most interesting medical history when it comes to mercury is in the 19<sup>th</sup> century, it became popular in the young United States.

**Justin:** Ah. That's a country with which I'm well acquainted.

**Sydnee:** There were pills that were called "Blue Mass." And they were little blue pills and they actually, they recreated this recipe many, many years later in recent times to see what exactly was in Blue Mass.

And it was a combination of mercury, licorice root, rosewater, honey, sugar and dead rose petals.

**Justin:** Sounds like basically everything is flavoring, right? Except for the mercury.

**Sydnee:** Except for the mercury.

**Justin:** Right.

**Sydnee:** Well, and we could get into... Hey, that could be a whole show to itself, the medical properties of honey. That's a whole thing to talk about.

**Justin:** We'll get there.

**Sydnee:** But you basically put 'em all together with a mortar and pestle, grind them all up together and make them into these tiny little grayish-blue pellets. And they prescribed them for everything.

Again, probably not with any basis. There was no evidence that this worked. But they gave them for toothaches, if you were constipated. If you needed help getting pregnant. If you had consumption.

Anything. Anything you would give it for.

**Justin:** We'll probably talk about this at some point, and maybe you know... At what point do we stop just making it up?

I mean, I kind of feel like, by mid-1800s, by the middle of the 19<sup>th</sup> century, we should have been basing at least something in reality.

**Sydnee:** There's not... Well, I mean, to a degree, as terrifying as this sounds, we're still guessing about...

**Justin:** Oh, good. Good. Oh great.

**Sydnee:** No, but the idea... We're running into that time period, about now, where I'm talking about, in the 1860s and actually moving on past that into

the late 1800s where we're really starting to think about evidence-based medicine.

The idea that you have to use the scientific method, take a hypothesis, test it, see if it works...

**Justin:** Not lie about stuff?

**Sydnee:** Collect objective data. We're starting to move into that time period. But I mean, we're just, you know, as we go into the 1900s, and I'd have to check my old books to make sure I'm not wrong here, but I think we're just heading into the era of the germ theory of disease, you know, that germs cause illness and not, you know...

**Justin:** Evil, sin, and stuff.

**Sydnee:** Well, and you know, it took us a while to get out of the whole humors era and it's... I mean, antibiotics weren't around until the 1940s. Think about what we did before that.

**Justin:** Just guessed, apparently. Just made stuff up.

**Sydnee:** Well, we did. And we used... Something worked once and we hammered on it until we figured out that it was a fluke and then we tried something else, because we didn't know what we were doing.

And I mean, we really... It took a while for people to start saying, "Hey, maybe we should have like a regimented way of doing stuff and not just kind of guess."

**Justin:** [laughs]

**Sydnee:** There's a whole great thing that I... A whole great book I found. It was a pamphlet that went out weekly back in the, I think it was the 1800s in Europe, that was called Quackery and Nostrums.

And it was just to let people know about treatments that they were finding out were just pure quackery, and different doctors who were doing things that were totally off the reservation.

And it's interesting because that was probably when people first started recognizing that, "Hey, there are facts in medicine. There are things that work. And it's a science and it's not just guesswork or faith or... you know."

**Justin:** Wouldn't that take all the fun out of it? Do you think you—

**Sydnee:** Well, not for the patients.

**Justin:** You're a doctor. Do you think you would have liked being a doctor when you were just like, guessing at stuff? Or do you like having all the answers?

**Sydnee:** Well, let's... First of all, I do not have all the answers.

**Justin:** Some of the answers.

**Sydnee:** And I imagine it would be awfully anxiety provoking, because you'd never know what you were doing. Although nobody seemed to care at the time. They just kept doing it.

**Justin:** Yeah.

**Sydnee:** These little, for instance, these little blue pills that they were giving people, Blue Mass, were delivering about 9000 times the amount of mercury that is deemed safe for people, in each pill.

**Justin:** [laughing] Good job.

**Sydnee:** And... Or no, not in each pill, in a daily dose.

**Justin:** Okay.

**Sydnee:** Which was usually one or two pills three times a day.

**Justin:** Okay, so maybe one pill.

**Sydnee:** Yeah.

**Justin:** No, okay. One or two pills, three times a day.

**Sydnee:** Yeah. Nine thousand times the amount of mercury that is safe for people to consume.

**Justin:** [sigh]

**Sydnee:** Now, what's interesting about this is one of our most famous historical figures took Blue Mass.

**Justin:** Leonardo da Vinci.

**Sydnee:** No.

**Justin:** Charles Nelson Reilly.

**Sydnee:** No.

**Justin:** [sigh]

**Sydnee:** Come on. He's one of your favorites.

**Justin:** Favorite what? Favorite... Give me a category. Favorite what?

**Sydnee:** Favorite president.

**Justin:** Warren G. Harding?

**Sydnee:** [sigh] You change... See...

**Justin:** He's our funniest president.

**Sydnee:** See, that's not what I said. I didn't say our funniest, I said your favorite.

**Justin:** [mocking Harding voice] I'm Warren G. Harding.

**Sydnee:** I didn't even say our best, necessarily. I just said your favorite.

**Justin:** Okay, my favorite is Lincoln. It's kind of a boring answer, but he's my favorite.

**Sydnee:** But he's also, maybe one of our best.

**Justin:** Maybe one of our...

**Sydnee:** He's probably up there.

**Justin:** Probably up there, right?

**Sydnee:** He's on that mountain.

**Justin:** Yeah.

**Sydnee:** [laughs] I don't know anything about history.

**Justin:** He's not like McKinley, the president—

**Sydnee:** Or geography.

**Justin:** ... so nice they let him do it twice.

**Sydnee:** [laughs] Abraham Lincoln was prescribed Blue Mass, at the time, for depression.

**Justin:** Oh yeah?

**Sydnee:** Yeah.

**Justin:** Yeah, he had a hard road.

**Sydnee:** Uh-huh. And it actually probably made things worse for him.

**Justin:** How so?

**Sydnee:** Because it has a lot of psychiatric effects. And it could have made him moody and very volatile and have angry outbursts.

In one of the Lincoln-Douglas debates he kind of flipped out and yelled at him. And the thought was that he was probably... It was probably because of the mercury he was taking.

**Justin:** Wow!

**Sydnee:** He stopped taking them, because he was worried that they were having some kind of negative effect on him. And he stopped before the Civil War started.

And a lot of historians believe that perhaps, if he had not stopped taking them, he would not have been the steady, calm hand that he was at the wheel during the time of—

**Justin:** Or maybe he would have wrapped it up—

**Sydnee:** ... Our country's great struggle.

**Justin:** Maybe he would have wrapped it up faster. Maybe he would have been like, "Ah, I'm so angry I'm gonna nuke 'em. Gonna nuke 'em all."

**Sydnee:** Well, I don't think we had nukes then.

**Justin:** "Gonna nuke you back to the stone age. Get ready for the Lincoln Bomb. I'm gonna drop it, because I'm angry from the mercury."

**Sydnee:** Now—

**Justin:** That's... Okay. So that's 1860s, and obviously like, if Lincoln wised up, I'm assuming the rest of the nation read about it in People and they were like, "Ah, well I'm not gonna take this anymore if Lincoln's not."

**Sydnee:** Well, I don't think Lincoln wanted anybody to know that he was popping these little pills to calm himself down.

**Justin:** [Lincoln voice] "These are mints. They're peppermint."

**Sydnee:** "They're Mentos."

**Justin:** "They're horehound candies."

**Sydnee:** "They're a freshmaker."

**Justin:** "They're Mentos candies. I've invented."

**Sydnee:** "They're Altoids. I just... They're curiously strong."

**Justin:** "They're so strong. I'm angry. Oh, I'm angry."

**Sydnee:** You would think that that would have been the end of it, but actually, we continued to use Mercurochrome. You familiar with Mercurochrome?

**Justin:** Only from the brief mention of it in the hit musical Rent.

**Sydnee:** I knew you were gonna say Rent!

**Justin:** Sorry, that's the only reference I had.

**Sydnee:** It was my only reference too.

**Justin:** Okay, good.

**Sydnee:** We used to use it as a topical antiseptic.

**Justin:** Huh.

**Sydnee:** Yeah.

**Justin:** No does that have any—

**Sydnee:** So Merbromine, which is a mercury thing. And it was actually okay. It probably was not the safest thing to use, because once you're giving something...

Once you're selling something over the counter, you know, you tell people, "Use a little dab of it", and who knows how much they actually use.

**Justin:** Now, is it still around? Mercurochrome?

**Sydnee:** No. In 1998 they banned it.

**Justin:** [sarcastic] Psh. Thanks Big Brother.

**Sydnee:** In the US, anyway.

**Justin:** Okay.

**Sydnee:** There's still... The interesting thing is that as of 2011, and I didn't find anything about now. I'm sure it probably hasn't changed, or else it would have been notable.

You still can sell liquid mercury in the US, if you want to. Just sell it to people.

**Justin:** But it's not... As far as like, poisons go, it's not super... You know what I mean? Is it really dangerous in terms of toxicity?

**Sydnee:** There are forms of mercury that are. Mercury gas, that can be released if the liquid mercury is heated up and inhaled. That can be quite deadly.

**Justin:** Okay.

**Sydnee:** And then, again, there are forms of organic mercury, mercury combined with carbon, different forms of that. I don't... And we're getting into organic chemistry there, but the point is, that can be absolutely deadly with one single exposure.

There was a scientist, I wish I'd written down her name, who was killed in recent times. It's only been within the last few years, and it was from... She was exposed to, working with.... She was working with mercury in organic forms in her lab.

She was exposed to it through a tiny little hole in her glove. Six months later she died, and it was from mercury poisoning.

Mercury poisoning can be a chronic thing too, it's not necessarily like cyanide or something we think about somebody ingests and is gone. You know, they deteriorate slowly over a period of time.

But the thing with organic mercury is that you can't get it out of you. You know other mercuries, there might be some ways to let it kind of run its course, get through your system, but organic mercury kind of binds to you, becomes part of you, is an easy way to think about it.

But it's still used in a lot of the religious traditions that kind of... When we think about... So because of the slave trade, there were a lot of new religions that formed in the Caribbean region and South America and the Creole region.

And these new religious traditions all used mercury. And to this day, there are practitioners, I don't know if I would call them physicians or spiritual leaders?

**Justin:** Practitioner seems fair. That seems even-handed.

**Sydnee:** Who still prescribe this. And you can buy mercury capsules, a ten-gram mercury capsule, for anywhere from two to 10 dollars, depending on where you buy them.

**Justin:** Can I get it on Amazon?

**Sydnee:** Probably. I didn't look, but probably.

**Justin:** I want some. I want some.

**Sydnee:** And they tell them to... You can take it for indigestion, or you can use it to ward off evil spirits. I mean, it's for everything in between.

And there are even some people who give themselves injections of mercury. And obviously this is not recommended, because the best-case scenario is what you're taking is not going to do anything to you.

You know, you're taking such a small amount that it won't actually kill you. The worst-case scenario is, you take enough that, you know, it's deadly.

**Justin:** Now, Sydnee, I want to put mercury to the trepanation test. To what extent are you and your medical cohorts trying to keep mercury from us, the common people, because you're afraid it will make you obsolete?

**Sydnee:** [dry sarcasm] As always, it is a vast conspiracy and we are desperately trying to keep real medicine from people so that we'll maintain our jobs and our high standard of living.

**Justin:** [sarcasm] So there you have it, folks. Straight from the doctor's mouth.

**Sydnee:** That's a lie. Don't use mercury.

**Justin:** Don't use mercury.

**Sydnee:** Don't use mercury. It's probably not a good idea. It's interesting, it's cool looking.

**Justin:** Fun to play with.

**Sydnee:** Unless you're a terminator, I would stay away from it.

**Justin:** So, don't use mercury, but do use your favorite podcast subscription service to listen to our show, Sawbones.

We certainly appreciate you taking the time to listen to us this week. We'll be back, of course, next week, with another episode for you to enjoy.

You can find our show on iTunes, or on Twitter, or on... I dunno, Facebook, maybe? Maybe we have a Facebook page.

**Sydnee:** Do we have... Well, by the time this goes out we better have a Facebook page.

**Justin:** You're nobody without Facebook.

**Sydnee:** You're not allowed to say you have a Facebook page until you have one, I think, legally, right?

**Justin:** That's the law.

**Sydnee:** Is that a thing?

**Justin:** That's the law.

**Sydnee:** I dunno.

**Justin:** But we sure appreciate you listening to us. You can actually follow us individually on Twitter.

My lovely wife is @sydneemcelroy.

**Sydnee:** And Justin is @justinmcelroy, but you already knew that, that's why you're listening.

**Justin:** Aw.

**Sydnee:** Aw.

**Justin:** Pshaw.

**Sydnee:** You're so famous.

**Justin:** Make sure you join us next week, and as always, don't drill a hole in your head.

[theme music]

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