Sawbones 222: ALS and the Many Diseases of Jean-Martin Charcot

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

Sydnee: And I'm Sydnee McElroy.

Justin: Sydnee, welcome back to the program.

Sydnee: Thank you, Justin.

Justin: And welcome our third chair, which is technically Sydnee's arms, Cooper McElroy.

Sydnee: Yes. She, we're gonna try to keep her—I'm not gonna keep her—I can't keep her quiet, that was a complete lie. I'm just gonna hope she sleeps.

Justin: And doesn't take a huge dump again.

Sydnee: Yes.

Justin: Like last time.

Sydnee: She has three times in the last couple hours, so… you have to assume she's empty.

Justin: The numbers are on our side.

Sydnee: But there really is no limit to how much a baby can poop.

Justin: You heard it here first folks, from a doctor. Babies can poop infinitely.

Sydnee: [laughs] Anyone who has had children can attest to that. Sometimes there are just days where they just poop all day.

Justin: Um, we uh… this is a—we had a sad event last week.

Sydnee: Mm-hmm.

Justin: The celebrated physicist, Stephen Hawking, passed away.

Sydnee: That's right.

Justin: Popular science guy and expert in all things… space and physics.

Sydnee: Time, and…

Justin: Physics and time and everything, the whole enchilada.

Sydnee: That whole area of science, to me, is—I mean, and I am, I guess I'm a scientist, right? Like, I'm a doctor. I'm a scientist.

Justin: Yeah, by trade.

Sydnee: That area is just… I can't even begin to understand, or try to understand. That's really hard for me.

Justin: Sydnee said to me before we started recording this episode, "I understand the disease and the medicine of this, but I'm not an expert in Stephen Hawkings' discoveries, so I'm gonna need you to sort of pick up the slack there."

Sydnee: [laughs]

Justin: So, I'm kind of like, the Stephen Hawking…

Sydnee: Right, you're the astrophysics…

Justin: Like, I'm bringing the astrophysics into this.

Sydnee: Uh-huh. Right.

Justin: Here's what I know about Stephen Hawking. He made some discoveries that made it easier for us to study black holes.

Sydnee: Yes. I knew that.

Justin: And so much else.

Sydnee: Right.

Justin: And that's sort of how we're gonna…

Sydnee: I wasn't very good in, like, regular physics, is the thing.

Justin: Right. And then you do physics in space, you take those physics out to space and let them do their thing? No thank you.

Sydnee: Uh-huh. I was a biology person through and through, with like, the chemistry that was necessary, and then, the physics that you had to take to get into med school, and that was hard for me.

Justin: But of course, we're not talking about physics, Sydnee. We're talking about ALS. Which everyone knows stands for… Lou Gehrig's Disease.

Sydnee: Okay. Well, you're close. First of all, let me say thank you to—we had so many people recommend this topic. I can't thank you all, because I think in light of Stephen Hawking's passing, a lot of people were a little more interested in what exactly was this disorder. What, you know, what was the nature of it?

So, thank you to everybody who tweeted and emailed and Facebook messaged and everything, 'cause there were a lot of people. Amyotrophic Lateral Sclerosis, ALS, or what is popularly known in the US as Lou Gehrig's Disease, is a motor neuron disease.

Justin: Okay.

Sydnee: What does that mean?

Justin: I don't know.

Sydnee: You don't know?

Justin: Motor neuron disease… okay, it's a disease…

Sydnee: I don't really expect you to know, I just was joking, but…

Justin: Relating to the neurons in the brain, which is—a neuron is like a chemical connection in the brain… and how it relates to our motor functions.

Sydnee: That was pretty good.

Justin: Yes!

Sydnee: Neuron was a little off, there. It's a nerve. A cell.

Justin: A nerve cell.

Sydnee: It's a brain cell.

Justin: A brain cell.

Sydnee: Neuron. It's a brain cell. So anyway, but that's okay. It's a cell.

Justin: Not bad.

Sydnee: Yeah. It's a cell. So the, yes, I mean, in the sense that it is a degenerative disease of the nerves that control our voluntary actions.

Justin: Okay.

Sydnee: Our muscles and our ability to move and the things we do voluntarily. Does that make sense?

Justin: Yes.

Sydnee: And as these nerves degenerate over time, we lose the ability to control these muscles and so, you know, the most obvious manifestation of that is you lose the ability to control your limbs or to walk, or to stand. You know, you become progressively weaker, and that results in, I think, what we were already aware of. You know, the fact that Stephen Hawking was in a wheelchair through a good bit of his life because he was weaker, he couldn't control those muscles.

And those muscles over time – and this is true in general for anything that would cause a muscle to lose innervation, meaning no longer have a nerve to it – that muscle will start to atrophy.

Justin: Okay.

Sydnee: So, over time, you lose the ability to walk, to, you know, voluntarily move whatever muscles have now become affected. Whatever muscles have lost their nerves.

Justin: Do things become atrophied because they're not innervated, or because you don't move them?

Sydnee: Well…

Justin: Or is that—I mean, I know that's kind of a causation and correlation kind of thing.

Sydnee: I was gonna say, yes and yes.

Justin: Okay. If I didn't move it, though, it would become atrophied in the same way.

Sydnee: Yes.

Justin: Okay.

Sydnee: Yeah. Yeah, you'd have to not move it for a long time to

become atrophied as fast as it can if you lose innervation, you know what I mean?

Justin: Yeah.

Sydnee: But yeah. If you lay in a bed—we say that for people who are sick in the hospital, you'll see people who come into the hospital with an illness, and they'll spend a few days in bed and they will be incredibly weak at the end of that, and it really wasn't the illness as much as just being in bed for a few days. So, that's fair.

It also affects things like speaking and swallowing, because obviously, muscles are in charge of those things. And then eventually, breathing can become affected. Because you use muscles to breathe. I don't know that we always think about that. We think about our lungs, we don't always think about our diaphragm and all of the other muscles of respiration that help us breathe. And that usually is what makes the disease fatal for the most part, generally speaking.

Now, what's interesting about Stephen Hawking is that, as many people noted, he survived a lot longer than a lot of patients with ALS generally do. And that is largely because, while the disease is always progressive, meaning it continues to affect more and more functions over time, it is variable in its course.

You know, there are kind of different types, different subsets of ALS. And in these different presentations, they can affect your muscles faster or a more slowly, and the things that are critical for survival, like swallowing and breathing, those muscles could become affected much later in life.

And some things can be overcome, you know. If you worry about, like, the muscles of swallowing… If you can't swallow, obviously we worry about nutrition and hydration, but you can overcome those things. Like, we can put what's called a PEG tube, or a tube in your stomach, or, you know, from the outside straight into your stomach, and feed you that way and give you hydration that way. So, we can overcome some things that are affected. Obviously breathing is the big… that's the big hang-up.

Justin: That's the big one.

Sydnee: Yeah. And so, for every patient who's diagnosed, the course is gonna be a little different. There are some general categories you can put patients into that can help you kind of expect what, you know, predict what's gonna happen next. But even within those categories, everybody is different. And it's a fairly rare disease.

Justin: I'm sure that's more common with diseases that relate to the brain. It seems to be a pretty common connective tissue with, like, neurological diseases.

Sydnee: You're thinking of things like MS?

Justin: Yeah.

Sydnee: Yeah.

Justin: I had ready examples. I'm glad you—so perceptive Sydnee, yes.

Sydnee: [laughs]

Justin: I did have ready examples in my head, but thank you for choosing MS. Yes, that's one.

Sydnee: That or like, if we wanna get into more cognitive disorders like dementia. I think, you know, Alzheimer's and other types of dementia. I think you can make the same correlation. It's different and, now, part of that might be because we just don't understand them as well yet.

You know, we're getting into a lot of areas where we know what happens, but why, and why it happens to the people it happens to, and how to stop it… those are still obviously big question we don't have great answers to yet. And when something is very rare, it makes it harder to study.

Justin: How rare—it's very rare?

Sydnee: Yeah.

Justin: How rare is it?

Sydnee: It is—there are about 6,000 new cases in the US each year.

Justin: Wow. Okay.

Sydnee: It's a fairly rare disease. And, like I said, everyone can be a little bit different. There are some general categories you can put people into to predict things, but usually different. It is not often inherited. We think about disease—I think that there's a lot of assumption that—

Justin: What? How can something be not often inherited?

Sydnee: Well, because it's different, like I said, there are different types. And so, there are—there is a small percentage of patients that we find they had a family history of it. But most of the time, it's just random. You can't predict it.

Justin: That's so strange, like… that's very strange to me, that something can be sometimes inherited.

Sydnee: So those are probably different, what we would call, like, pathophysiologies. Kind of, what is happening on a cellular level, on a microscopic level, is probably slightly different in some of these cases.

Justin: Wild, okay.

Sydnee: But it's really hard, because for one thing, if you wanna talk about, you know, one thing we know about ALS and some of these other neurodegenerative diseases that we've talked about is, they can have—you can accumulate these plaques, these materials that accumulate in the brain. That is really hard to study when someone's alive.

Justin: Mm, 'cause if you get in there…

Sydnee: Yeah, I mean, brain surgery is a big deal.

Justin: You shouldn't get in there.

Sydnee: No, you should—well, I mean, we do, but we should try to stay out of there as much as possible.

Justin: You shouldn't. I mean, you probably shouldn't if you don't have to.

Sydnee: Right. And so, they're harder to study when people are still alive, and we don't necessarily get as much information after people, you know, on autopsy.

Justin: Right.

Sydnee: And so, you know, it's still very complex, and we don't know all the reasons why the people who get it do, and why they progress the way that they do. There's still a lot of unanswered questions.

As a result of this, we don't have a particularly effective treatment, and we certainly do not have a cure at this point. There are things that we can do, like, experimental medications that can extend life a little bit, and then there are supportive treatments. So, like I mentioned with other ways to feed people, you know?

Justin: Right.

Sydnee: Or breathing support, like ventilators. And then, obviously, all of the ways that we help people who are no longer able to walk, or to stand, or to communicate through speaking, those kinds of things. But all of that being said, it's really just supportive care, it's not necessarily disease treatment, per se.

Justin: Right.

Sydnee: Now, when did we figure this out?

Justin: Um… I don't know, Syd.

Sydnee: Let's do some history.

Justin: Okay, let's do it.

Sydnee: We talked a lot—I felt like it was important to go over what ALS is, because I think it's one of those things that everybody's kind of aware

of, but isn't quite sure what it is. The term ALS was first coined in 1874 by Jean-Martin Charcot. There had been some descriptions of the disease a few decades earlier by another neurologist, Charles Bell. I couldn't find these descriptions. They kept saying that, like, Charles Bell described it, and I couldn't find it in any of his writings, so I'm not—

Justin: Is that Bell's Palsy?

Sydnee: Exactly. Bell of Bell's Palsy. Very good!

Justin: Alright!

Sydnee: Yeah. But he had, I guess, written some descriptions of patients that probably, if we looked back, probably did have ALS. But I didn't find those, so he gets the credit in a lot of articles, but I didn't find the proof of it. So there you go. I'm gonna give it largely to Charcot.

He was a French neurologist, the father of neurology in many ways. He discovered a lot of different neurological diseases. He was also a very prominent figure in developing, like, the neuro exam, the way we figure out, you know, sensory nerves versus motor nerves and what does what and how we figure out if different nerves are working or not, you know, what tests we do and things. So, a big figure in the history of neurology.

Justin: Huge for the ASMR community. He's done a lot of—because the neurological exam is, like, really one of the bedrocks of ASMR videos.

Sydnee: [laughs] Right.

Justin: So it's like, a huge contribution to them, too.

Sydnee: That's what he's mainly known for anymore.

Justin: Yeah, that's true.

Sydnee: That's the biggest thing. ALS was actually initially called Charcot's Disease, and my understanding is that in a lot of the world, it's still called Charcot's Disease. I can't attest to that, because I live here.

Justin: Now you're saying Char*cot*. I'm gonna go ahead and say *Char*cot. because that sounds like a fun shark mascot of some sort of…

Sydnee: No… but did you see the spelling?

Justin: Yeah, but like… Sharko.

Sydnee: It's like, French.

Justin: Yeah, but like… Sharko sounds like a fun…

Sydnee: Not like, shark with like, dash O.

Justin: Yeah, but it would be funny if his name was Shark-O, so I'm gonna go with Shark-O.

Sydnee: [laughs] Okay. Shark-O.

Justin: Shark-O sounds like a bad clown at Seaworld.

Sydnee: [laughs] Charcot has a lot of stuff—

Justin: [silly voice] "It's me, Shark-O!"

Sydnee: [laughs]

Justin: [laughs]

Sydnee: No.

Justin: "You kids want me to make a balloon dolphin?"

Sydnee: [laughs] If it was possible to make clowns a little scarier, you've done it.

Justin: Yeah. "I'm half shark! I won't tell you which half!"

Sydnee: Is that the name of the clown on IT?

Justin: No, that clown's name is Pennywise, Sydnee.

Sydnee: Okay. [laughs] I don't know, I didn't see it.

Justin: Pennywise. Shark-O. Oh, his last name is Shark-O, that's right, I forgot.

Sydnee: I watched the old one, and it was really scary up until the giant spider, so I didn't watch the new one.

Justin: Spoilers, sheesh.

Sydnee: That's the old one, I don't know. The new one may not have one.

Justin: It may have a bigger spider. Or a smaller one.

Sydnee: [laughs] Charcot has a bunch of stuffed named for him.

Justin: Or several spiders.

Sydnee: I don't know if this is interesting to everybody.

Justin: I'm looking at this list that you've put in your notes, here. It is wild.

Sydnee: Well, I won't go into all of them, because I understand that it gets boring.

Justin: [laughs] It's just… okay, list a few of them. And then I'll make a pithy and fascinating insight.

Sydnee: Uh-huh. Okay, there's an artery named for Charcot, cleverly named Charcot's Artery. There's a condition that can happen to joints called Charcot's Joint. There, obviously, Charcot's Disease, we talked about. There's Charcot-Marie-Tooth Disease, which has nothing to do with teeth, by the way. It's another neurodegenerative disease.

The reason I like it, though, is he published accounts of this disorder, this neurodegenerative disorder, at the exact same time as Pierre Marie, who was one of his students, and Howard Henry Tooth. And so, it got named for all of them.

It has nothing to do with the teeth, but…

Justin: And he has so many others. You'd think he would be like, "Naw, naw, naw."

Sydnee: "That can be Marie-Tooth."

Justin: "It's cool. It's Marie-Tooth. People already hear my name and associated it with so much whack stuff, but I've gotta get me name on Charcot-Marie-Tooth Disease, for sure."

Sydnee: And there's other stuff, like Charcot's Intermittent Hepatic Fever, and Charcot's Triad, that—those have nothing to do with, like, neurodegenerative disorders.

Justin: He's got—like, he was a practicing neurologist, right?

Sydnee: Yeah.

Justin: You gotta see—

Sydnee: But he got into other stuff.

Justin: Yeah, but this cat will be like… how many times did this cat have to be like, "Uh, I actually do know what this is. You have me. You have a bad case of me-itis. And uh…"
"Well, which kind is it? Is it the serious kind of you-itis? Or like, the not-as-serious kind of you-itis?"
Like, "I don't know. There's a lot of things that I cause."

Sydnee: He actually had two triads.

Justin: Okay, great.

Sydnee: Isn't that wild? Two separate triads.

Justin: What's a triad?

Sydnee: It's a constellation of three symptoms that are pathognomonic, meaning that they usually indicate a certain disease process. If you see these three symptoms, it's probably this.

So, Charcot's triad of Acute Cholangitis means that you have pain in, like, the area where your liver is, your right upper quadrant of your stomach, that you have jaundice, you've turned yellow, and you have a fever. So those three symptoms together usually indicate Acute Cholangitis. I won't go into all that, but that's a triad in medicine.

Justin: Okay.

Sydnee: Or other things, you know. We didn't corner the market on the word triad, I don't think.

Justin: Yeah.

Sydnee: Anyway, a bunch of stuff is named for him. I always think that's impressive, 'cause so far nobody's named any diseases for me.

Justin: Not yet, Syd, but maybe Charcot, if you could connect with him, would like, peel you off one or two of his.

Sydnee: [laughs] I will say that, on my iPhone if anybody ever tries to type Syd to me, call me Syd instead of by Sydnee, it changes it to STD.

Justin: I've experienced that, yeah.

Sydnee: So, is that sort of like having something named for me?

Justin: It's sort of like it. It's a little bit like it.

Sydnee: I think that's something. So, he was a really brilliant neurologist. He also described MS, by the way, multiple sclerosis. He was the one who trained Tourette.

Justin: Oh, Tourette's Syndrome.

Sydnee: Yes, who described Tourette's Syndrome. He actually like, gave—he like, bequeathed upon him the ability to name that. He was like, "You get to name this one, buddy."

Justin: What's the story with Pierre Marie discovering the same thing the same time as Charcot? I would be a little suspish, if I was him.

Sydnee: Yeah. I mean, Tooth, as in Henry Howard, he was over in England, and these guys were in France. So like, he did it on his own. But Pierre Marie—

Justin: That's actually a common phenomenon, like, people discovering things… It's weird, it's like… I read about it in a book about where ideas come from. And like, about how ideas are often discovered at the same time because there's so much, like, cultural and… like, society has to be at a certain point for these to take shape.

But once it's there, like, it's not uncommon for several people at the same time to push into the end zone. These are the great sports metaphors I'm so well known for.

Sydnee: [laughs] Well, and you're right, and there are a lot of times in medicine where that results in, like, you know, bitter adversaries who hate each other forever because they both published but one got the name or whatever, one gets the credit. I did not read that in this case. As far as I know, Charcot, Marie, and Tooth were all still fine with each other. They just shared the name.

Justin: Where Good Ideas Come From is the name of that book. Steven Johnson. It's good.

Sydnee: He also was a huge influence on Freud. So, while he was a neurologist – and we'll get into this more extensively – he dabbled in psychiatry.

Justin: Sure.

Sydnee: And so, Freud studied under him—

Justin: He was hoping he could find a few disorders over there, just to lay claim to.

Sydnee: Name some more stuff. The hospital where he practiced, Sol… hold on. This is French. Do you wanna say it for me? It's right there.

Justin: Uh… sure.

Sydnee: Sol… pet… riere.

Justin: I love yours. Salpêtrière.

Sydnee: There you go. Yeah. Like that.

Justin: [gibberish in a French accent]

Sydnee: [laughs] He had a lot of patients there that he could study, especially when it came to the field of psychiatry, because it became sort of a refuge for anyone who was destitute. So, for anyone who was homeless. So a lot of people who, by today's standards, would have been suffering from psychiatric disorders that were undiagnosed, and unrecognized, and nobody knew they existed, and completely untreated.

They found refuge in the hospital. There was a lot of people with various, like, prostitutes often stayed there, homeless people, beggars. And so, he saw many, many patients, and was able to study many disorders and described them. He actually referred to his hospital as a "grand asylum of human misery," which I would not put on a billboard, were it me.

Justin: No.

Sydnee: No.

Justin: But that is the only way I refer to Dollar General, when I have to go there.

Sydnee: [laughs] See, they call our hospital—they say that we're "your partners for life," and the other one in town is "the hands of experience."

Justin: Mm, that's catchier.

Sydnee: I don't think "grand asylum of human misery…" [laughs]

Justin: [sings Tom Jones] "With these hands…" That's the St. Mary's jingle.

Sydnee: Uh huh.

Justin: [sings] "With these hands…" Gets stuck in your head.

Sydnee: So, I don't think he was in PR, but… and this interaction with a lot of psychiatric illness that was, again, very poorly understood at this point in history, led him down some very strange paths. Which I would like us to take a quick diversion into.

Justin: Alright, let's do it.

Sydnee: After…

Justin: Oh!

Sydnee: We visit the billing department.

Justin: Denied! Let's go.

[advertisement break]

Justin: Sydnee, you lured me into some strange paths that Charcot went down in the treatment of ALS, and I'm ready.

Sydnee: Well, he wasn't—and let me clarify. This was not, in any way, related to ALS. I just, we're talking about Charcot and this is a show about wacky medical history.

Justin: So here we are.

Sydnee: So, we gotta mention it. And again, can I just say… he was obviously a very smart guy who figured out a lot of stuff. So, I don't

wanna take that from him. But, like every medical figure from the time, he got some stuff wrong.

Justin: Oh, of course. Right.

Sydnee: Yeah.

Justin: That's natural to learning environments.

Sydnee: And especially, if you start to dig into a lot of the history of psychiatric disease, there was so much misunderstanding for so many years, and so much stigma, and magical thinking and, you know, there was no… a lot of people got stuff wrong.

So, a patient was transferred to his hospital that changed the course of his studies for a while, and I would say, if anything kind of, um… I don't wanna say damages his legacy. But, you know, if there was a black spot, this is probably where it is.

So, there was a flower delivery man who was out in the street, pushing on a wheelbarrow, delivering his flowers, when he was struck by a carriage. He was knocked unconscious, and sent to one hospital. When he awoke, he had memory issues, he was actually paralyzed from the waist down, he had developed this tremor in the corner of his mouth.

No one really understood what had happened at the time. They knew something had happened, but there was no visible injury.

Justin: Okay.

Sydnee: You know?

Justin: So, something happened.

Sydnee: Right. Now, he was there at this hospital that he was initially at for six months, and then what probably happened is, over time, nobody knew what to do with him, nobody knew how to fix him, he wasn't really getting better, and… he probably couldn't pay, I would assume, eventually.

And, as I've already mentioned, the hospital where Charcot worked was kind of a refuge for people like that. So, he was transferred there, and also they had this neurological expert working there. And Charcot saw him, and interviewed him, and read the history and everything, and came up with the diagnosis of "hysteria."

Justin: Not a real thing.

Sydnee: Right. Now, as we have discussed before on this program, hysteria was a diagnosis usually historically applied to women who were acting any way that men didn't like. And sometimes, that was because there as an actual underlying medical or, you know, perhaps it was a psychiatric disorder.

Other times, hysteria was used to describe women who, I don't know, didn't want to, like, stay at home, necessarily, or get married, or raise kids. Maybe they wanted to have jobs. Maybe they wanted to wear pants. Who knows. Maybe they just, you know, didn't want to cook their husband dinner that night.

But, for whatever reason, hysteria was often applied to just, women who… you know.

Justin: Got outta line.

Sydnee: Yeah, you could say.

Justin: I wouldn't say. I'm just saying, they would say. Not I would say.

Sydnee: [laughs]

Justin: I could not say.

Sydnee: Now, in this case, obviously, something had occurred. This man probably suffered from a closed head injury. And there was probably some—

Justin: Meaning, like, a subdural hematoma, or something like that?

Sydnee: It could easily have been some sort of intracranial hemorrhage.

There were parts of his brain that were, obviously, he had suffered some sort of damage, to his spinal cord, possibly. He was paralyzed from the waist down.

But you couldn't see any of that, you know? He wasn't cut or bleeding, there was no obvious source of injury. So, these sort of injuries you wouldn't be able to see at the time, so it would be very hard to say what exactly happened.

He also started having seizures at one point, which again would point to maybe some sort of hemorrhage in the brain. But nobody knew that at the time. So, he called it hysteria.

Now, his understanding of hysteria was a little different. Again, from ancient times, the word hysteria referenced the uterus. And it was thought that hysteria was something only women, or people with uteruses, could have, because it was the result of the uterus moving around in the body and making you act strangely.

This was a departure from that view, obviously. He believed that hysteria was the result of kind of a "weak" neurological system. Your nerves were just kind of weak.

Justin: Just kind of… yeah. Which is, like, the idea of your nerves being frayed or weak is actually pretty old. Like, people who have anxiety, I think, get that. Like, that was sort of the line of thinking for a while, that your nerves would just get, sort of like, worn down.

Sydnee: Mm-hmm. And to this day a lot of people will refer to it as, "I have a problem with my nerves. I have an issue with my nerves." When you think about the term "nervous breakdown," that's where this kind of misunderstanding comes from.

Justin: And a nervous breakdown, actually, we still use that term, but that's actually not very specific, is it?

Sydnee: Or accurate.

Justin: Accurate is the word I meant to use.

Sydnee: Yeah. So, but this persists. "Nerves" is in and of itself a kind of culture-bound syndrome that people will use to describe somewhat anxiety, but it's not even necessarily anxiety. It's also just stress, you know? But "nerves" is its own thing which isn't actually a diagnosis.

Anyway, so, he began to develop this theory that you could get hysteria as a result of some sort of trauma. It could be a physical trauma, it could be a psychological trauma, but some sort of trauma occurs, and then your neurological system is weakened, and you can develop—he had a whole, he broke it all down.

There was major hysteria and minor hysteria. Some of it could be just like a change in behavior. Someone whose behavior had changed somewhat bizarrely may be described as having hysteria, and that may well have been an underlying psychiatric illness, who knows.

And then, someone like this, who has a clear neurological problem, would also be described as having a different kind of hysteria. When there probably was underlying nerve damage that was done that would have explained it. He also studied a lot of women with what he called "hystero-epilepsy."

Justin: Okay. What's that?

Sydnee: So, some of these patients may have had seizures. And we've talked about epilepsy before. Epilepsy was poorly understood for a long time, and thought to be… well, after we stopped thinking it was either possession or some sort of spell, we misunderstood it as a psychiatric illness for a long time as well.

So, some of these women may have actually had seizures, have had epilepsy. For others, it may, again, have been a psychiatric illness that would cause some sort of, like… maybe a catatonic state. Anything like that could have been described as hystero-epilepsy as well.

So, he is very famous for many reports he did on specific patients. There were two women in particular that he did a lot of… he spent a lot of time with to understand hysteria. So his name is closely linked with a study of hysteria, and also with hypnosis.

Now, at this point in history we've talked about Mesmer before. Mesmer was very popular. He had popularized mesmerizing people, hypnosis. And hypnosis was being used to try to treat a lot of things. And so, he would actually—Charcot would use hypnosis to induce the hysterical symptoms in front of his colleagues.

Justin: Ugh.

Sydnee: At least, that was what he was intending to do. So, he would, in front of, like, students and colleagues, people who were studying to become doctors or just wanted to know what he knew would come, and he would put one of his patients in front of them all and he would hypnotize them, and then suggest to them to do all of these things that he'd witnessed, and they would do them all.

Now, in retrospect, what was probably happening is the power of suggestion. He was telling the patients to do the thing, and the patients were doing the thing.

Justin: Right, how a lot of hypnosis works.

Sydnee: Exactly. And not actual hypnosis, and it wasn't even necessarily—a lot of people would write, it was to treat the patient. It didn't necessarily treat the patient. If they were suffering from something that made them dangerous, then it certainly would make them more docile, for the moment.

Justin: Right.

Sydnee: But it didn't necessarily treat anything. It certainly wouldn't have treated the patient we discussed. He actually, for a while, was called the Napoleon of neuroses.

Justin: [laughs]

Sydnee: So, yeah. I don't think that nickname stuck, with all of his other medical eponyms.

Justin: Right.

Sydnee: So, like I said, he spent a lot of time and energy describing hysteria and using hypnosis and refining these techniques. And this was a huge influence on Freud.

Justin: Oh, okay.

Sydnee: So, now, eventually, Freud would start to depart from some of these ideas, and eventually even Charcot would say, "You know what? I think maybe I got some things wrong." [laughs] He would start to divide the neurological and psychiatric illness, and start to see them as different things, but…

Justin: That's a refreshing level of awareness for this time period.

Sydnee: But it really—and when you do these kinds of studies and you are respected the way he was, and you have so many students and doctors come in and learn from you, it has a huge impact on medicine and psychiatry.

Justin: Right, because you're a leader in the field. So, like, the things that you're sort of focusing on are gonna be things a lot of people are paying attention to.

Sydnee: And so, as a result, a lot of stuff got thrown into this basket of "hysteria", which was nothing. And those specific disorders, it took longer to figure out what they were, and probably set psychiatry back somewhat. He did believe that men could get hysteria, which was, um… a new idea for the time.

Justin: Progressive? Is that… that was the word I'm gonna use, progressive. I don't think that's actually accurate in this case.

Sydnee: [laughs] It was less sexist, but still wrong.

Justin: Right.

Sydnee: So, I don't know if you get points for that. So, his neurological legacy is amazing. His psychiatric legacy, not so great. A lot of people will note—

Justin: Stay in your lane, everybody.

Sydnee: [laughs] That's what a lot of people say, "Well, but he wasn't a psychiatrist." So that would be my advice. Stick with what you know.

Justin: Just don't run your mouth about a bunch of stuff, man. You already got 15 diseases. Like, just calm down.

Sydnee: Just stick with what you know. Because he did accurately describe ALS. Now, I would love to give you this history of all the things we learn and have improved in the treatment of ALS since then. But there isn't a lot of history with that. Obviously, it came largely into public awareness as a result of Lou Gehrig. Which is why we refer to it as Lou Gehrig's Disease.

Justin: At least in the states, probably, I can't imagine that's…

Sydnee: Yeah, it's usually just in the United States. And it has been closely associated with him, and then since that, Stephen Hawking, I think to some extent.

Justin: I feel like I've heard it, since Stephen Hawking has come to prominence, referred to it more as ALS than Lou Gehrig's Disease. Like, 'cause it sounds weird to say, like, "Stephen Hawking has Lou Gehrig's Disease." Like, well, I mean, Stephen Hawking's pretty good too.

Sydnee: Yes, exactly.

Justin: Like, he's a pretty big deal. It's kinda weird to say, like, "He's got baseball player syndrome." Like, yeah, no doubt, Lou Gehrig was a very big deal. But like, Stephen Hawking is Stephen Hawking. Maybe we just name it—maybe just don't even name it after somebody who had it.

Sydnee: No.

Justin: There are a lot of diseases—

Sydnee: Well, what about Charcot's Disease? I mean, it was named for the guy who discovered it, and then…

Justin: Yeah, that's fine.

Sydnee: Yeah.

Justin: But he has a lot of other things going on, Sydnee. He's gotta make up some stuff about psychiatry and he's got 15 other disorders named after him. Like, he doesn't need this.

Sydnee: [laughs]

Justin: Are there many—I can't—can you think of any other instances of diseases that are named after people who had them?

Sydnee: You know what, as you said that I was thinking, I don't…

Justin: I don't think that's very nice. [laughs]

Sydnee: I don't know. I'd have to read about it. But no, I mean, that doesn't seem—which, I think attests to the fact that we didn't know a lot about it. It was very unique. And so, I mean, it's a very rare disease, and so, when Lou Gehrig announced he had it, I think a lot of people were like, "What does he have? I don't know, it's that…" and then people would say, "It's that thing Lou Gehrig had."

Justin: "That Lou Gehrig disease."

Sydnee: Right. And so, I think that's why. And also, ALS is easy to remember, but Amyotrophic Lateral Sclerosis is not. So…

Justin: It's not even easy to say.

Sydnee: No, it's not. Stephen Hawking was diagnosed in 1963. We still did not know much about what was going on. I mean, we knew degeneration of the nerves happened, and we knew what the results were. But as far as what could be happening that we could target with drugs to fix, we didn't understand well. And at the time, I think he was given, like, a prognosis of two year survival.

Justin: [sucks air through teeth] Ow.

Sydnee: Obviously, that was wrong.

Justin: Thank goodness.

Sydnee: Which, again, is not because—that's not even because the doctors didn't know much, it's just… it's hard to predict the course. And what is interesting is that, in some cases of ALS, it can affect cognitive function.

Obviously, that was not true with Stephen Hawking, because despite the fact that he had, you know, some physical… many physical manifestations of the disease, it didn't stop him from changing the way we look at the universe. And then, you know, he survived until he was 76, which is a really long time for ALS.

Justin: That's amazing. I mean, like, it's astounding.

Sydnee: Yeah. Which, I mean, that's…

Justin: Like, 76 is good for anybody.

Sydnee: That's a good long life generally, yeah.

Justin: Yeah.

Sydnee: And a lot of people have asked, like, what was different about him? Probably just luck, that that was the form of ALS he got. You know, some people have asked, like, because he was so famous and well-known and probably had the means to support himself.

Justin: Did he get better…

Sydnee: Did he get better treatment? I wouldn't say, necessarily, no. I mean, yes, he was able to afford the supportive treatments that are available. But it probably just has more to do with the kind of the way his ALS manifested, as opposed to any special care he received. Not to say he didn't. I'm sure he got excellent care.

But I doubt that that is why he lived so long. It's just the nerves that affected his diaphragm, his ability to breathe, clearly were unaffected for a very long time. And so, he was able to stay with us longer and change our understanding of, you know, the universe. Which is pretty amazing.

Justin: Pretty darn good.

Sydnee: Mm-hmm.

Justin: Good job, Stephen Hawking.

Sydnee: I think it's a very inspirational—nothing has to hold you back. I think it's a very inspirational story.

Justin: Me too. So—

Sydnee: And that's also—it's a good reminder. Diseases like ALS sometimes… I mean, there was the ice bucket challenge on YouTube, right? Where everybody was, you know, working to raise money for ALS by dumping buckets of ice water on their head. And so obviously, it has gotten some attention.

But a lot of times, rare diseases like this don't necessarily get all of the research attention and money and funding that they could. But we need to, clearly. Because this is still an area where we don't have great treatment, other than just to support people as long as we can.

Justin: So, thank you so much for listening to this episode.

Hey, if you're a fan of Sawbones or any of the other great Max Fun shows, I have big news. The MaxFunDrive is kicking off April 2nd, running for just two weeks. We'll be running some choice episodes of all of our podcasts. We got a ton of great gifts for new and upgrading members, and it's the best time to support these shows that you enjoy, we hope, so much.

So, don't miss that. That is kicking off April 2nd. The day after April Fool's Day. Which falls on an Easter this year, which is unfortunate, I think, for Jesus.

Sydnee: It's gonna be a weird day.

Justin: It's bad timing for him, I think.

Sydnee: [laughs]

Justin: He'd prefer that to not occur. Because it's like, he's like, "I'm back!" And they're like, "Ha ha, we get it." And he's like, "No seriously, I'm back."

Sydnee: Hey, Justin? No, I wouldn't. You know—

Justin: And he's like, "No, it's not a joke, I know what you're thinking."

Sydnee: Justin. This isn't—

Justin: "No, I'm back."

Sydnee: I feel like this is not the kind of… let's just stop there.

Justin: "He is risen," someone will say. And someone else will say, "Ha, good one."

Sydnee: Mm-hmm.

Justin: And then someone else would be like, "No really, I saw the stone rolled away."

Sydnee: I think religious humor is not really where the Sawbones…

Justin: Yeah, agreed.

Sydnee: That's not really where we live.

Justin: Don't put it on April Fool's Day, Jesus!

Sydnee: Yeah…

Justin: You know people are gonna get on your case about it.

Sydnee: You can take this stuff to your other podcast. [laughs]

Justin: Folks, uh… [laughs] Sydnee's right. Thank you to The Taxpayers for letting us use their song, "Medicines," as the intro and outro of our program, and thank you for listening. We will return to you next week with another episode, but until then, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

[theme music plays]

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