

## Sawbones 116: Scurvy

Published December 18<sup>th</sup>, 2015

[Listen here on mcelroy.family](http://mcelroy.family)

**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. Welcome to *Sawbones*, a medical tour of misguided medicine. I am your co-host Justin McElroy.

**Sydnee:** And I'm Sydnee McElroy.

**Justin:** Sydnee, I got a therapeutic orange panna cotta chilling upstairs, so we're fine.

**Sydnee:** A thera—

[sound of a drink can cracking open]

**Sydnee:** A therapeutic—

**Justin:** Yeah.

**Sydnee:** — orange panna cotta?

**Justin:** Why were you so distracted by me cracking open a refreshing Cheerwine?

**Sydnee:** I'm sor— it was a very loud, like I felt like it was, you intentionally held your can of Cheerwine very close to the microphone as you opened it, like it felt—

**Justin:** Impossible.

**Sydnee:** It felt intentional.

**Justin:** You don't have headphones on. How would you have any way of like, of that impacting you?

**Sydnee:** I mean, it was— I'm just sitting here like in real life, like not headphone sound, but like all— like actual sound, and it was very loud.

**Justin:** I bet there's people at home who are like, "Wow, that sounds really refreshing."

**Sydnee:** Are— wait. Are you like a shill for Cheerwine?

**Justin:** For crisp, refreshing Cheerwine? Made the same recipe since 1917?

**Sydnee:** Nope. Actually, I'm going to have to stop you right there. We don't, we don't get paid to do any ads for them. So—

**Justin:** Moving on.

**Sydnee:** Sorry.

**Justin:** I made a therapeutic—

**Sydnee:** Nothing for free, guys. Nothing— Well, except the show. The show is free.

**Justin:** Therapeutic orange panna cotta.

**Sydnee:** Well, that's— okay.

**Justin:** It's medicinal prescription orange panna cotta.

**Sydnee:** That sounds— First of all, that sounds delicious.

**Justin:** Mm-hmm. Yeah.

**Sydnee:** [simultaneously] And especially because I requested—

**Justin:** [simultaneously] I don't know what I'm gonna do with it, because it can be a little bland.

**Sydnee:** Yeah?

**Justin:** By itself— not bland, just a little, like, texturally unsound.

**Sydnee:** Can it? Are you sure?

**Justin:** I'm thinking some like—

**Sydnee:** Wait, have you ever had it before?

**Justin:** — fruit salad, maybe, on top, or perhaps with chocolate shavings.

**Sydnee:** Oh, I like the chocolate sha— chocolate and orange.

**Justin:** Mm-hmm, chocolate and orange. Exactly, we've got some chocolate.

**Sydnee:** Yeah. That's a good—

**Justin:** Yeah.

**Sydnee:** That's a good classic combination. But—

**Justin:** But it's a therapeuti— Yeah, therapeutic panna cotta.

**Sydnee:** Okay, no. It sounds amazing and I asked you to make that, so I'm really glad that you did. But wh— why were— why are we calling it therapeutic?

**Justin:** Well, it treats the only disease that I think everybody is qualified to treat, and that is scurvy. As we all know, s— soldiers, abroad in the ocean felt they—

**Sydnee:** Soldiers abroad in the ocean, mm-hmm.

**Justin:** Can I just tell the Christmas story, please?

**Sydnee:** The Christmas story of scurvy?

**Justin:** The soldiers abroad in the ocean started walking, and the friend said “You look shorter, like you're scrunched over, and you're scrunching around the ship. You gotta do something about that.” And one of the Italian sailors on the boat was like, “Hey, it's a me, Luigi.”

[Sydnee chuckles]

**Justin:** “I made the orange panna cotta for you!” And they ate it. They all shared it on Christmas Day. And they all— they all started— like while they were eating it, they were like, “Oh, I feel a little better.” They're like sitting up a bit straighter. And so they— when they opened their crackers and they all put their crowns on, they were like really did feel like kings for the first time in quite a few months.

[Sydnee chuckles]

**Justin:** And what they discovered was the orange panna cotta. Specifically the... the orange panna cotta part of it.

**Sydnee:** Right. Uh-huh.

**Justin:** And it made them feel better and cured their scurvy. And that is why every year we get scurvy, and then on Christmas Day we eat orange panna cotta, and it cures of— cures us of our scurvy.

**Sydnee:** And that is the McElroy family tradition.

**Justin:** Mm-hmm.

**Sydnee:** Of Christmas.

**Justin:** That's the Christmas story, as in the Bible. Look it up.

**Sydnee:** Okay. So it's not.

**Justin:** Mm-hmm .

**Sydnee:** I'm pretty sure that's wrong. I'm definitely sure your information about scurvy— I mean, I know you're onto something here with the oranges, but do you know any— anything about scurvy?

**Justin:** I mean, I just literally laid out everything I know for you about scurvy, and it is obviously extensive.

**Sydnee:** So you think it makes people scrunch up?

**Justin:** Kind of scrunchy.

**Sydnee:** Kind of scrunchy?

**Justin:** Yeah.

**Sydnee:** Okay. Why don't—

**Justin:** When I used to play EverQuest, I would walk around crouched and tell people I had scurvy.

**Sydnee:** And they believed you? [chuckles]

**Justin:** Well, I mean, you can't get scurvy. It's a video game, sweetheart, so I doubt they did.

**Sydnee:** I don't know. I thought maybe in your vid— video game world you, like, you could get scurvy. Like you could get vitamin deficiencies.

**Justin:** I'm sure there are games where you can get scurvy. Perhaps in Sid Meier's Pirates, something like that.

**Sydnee:** [chuckles] I'm cer— There have to be, right?

**Justin:** Yeah.

**Sydnee:** Let's—

**Justin:** Crusader Kings is probably—

**Sydnee:** Why don't we talk about scurvy?

**Justin:** Yeah, I would love to.

**Sydnee:** Since you appear to know very little.

**Justin:** Very much.

**Sydnee:** I wanna thank a lot of peop— People are dying to know about scurvy. I think it's 'cause pirates. Everybody loves pirates.

**Justin:** People are dying— people are dying of scurvy. Every day.

**Sydnee:** No. Well, not many. Not often. Not as many. but thank you Rebecca, Josh, Stephanie, Abigail, Chad, Kate, Brittany, Allison, Nicole, Alicia, Jennifer, and Alice. Whew!

**Justin:** Whew, that's a lot of people—

**Sydnee:** Lot of people.

**Justin:** Got scurvy fever.

**Sydnee:** Lot of pirates out there wanting to know what to do.

**Justin:** Hmm, scurvy fever seems redundant, let's just say scurvy.

**Sydnee:** Let's just say scurvy.

**Justin:** Just—

**Sydnee:** A lot of— I don't think— I don't know that they have scurvy. That's what all the emails were.

**Justin:** Yeah. What do I—

**Sydnee:** “Dear Sawbones, save me.”

**Justin:** “What do I do about this?”

**Sydnee:** “I have scurvy.”

**Justin:** “I'm scrunched over!”

**Sydnee:** As you probably already know, and as Justin kind of already alluded to, scurvy is a deficiency of vitamin C. It's the easiest, I think, of the diseases to explain, maybe, that we've tackled.

**Justin:** And the fun— and the funnest to say.

**Sydnee:** And— you def— Yes, you don't have enough vitamin C, you need more. We really didn't know about vitamin C until the 1930s. It wasn't described until then, like 1933, but we kind of figured out that there was something wrong with people and that vitamins— well, things that contained sure— something. Foods that had something in common could fix it a lot sooner. Before we knew terms like vitamin deficiency, and scurvy, and vitamin C, and all that kind of thing.

**Justin:** Mm-hmm.

**Sydnee:** We sort of understood scurvy. Now, let me tell you a little bit about scurvy first, before we get into the history of it.

**Justin:** Okay.

**Sydnee:** Because luckily, nowadays, most of us aren't going to get scurvy.

**Justin:** That's good to hear. Imagine my relief.

**Sydnee:** Vitamin C is easily obtained through our diet, or through— lots of people like to supplement with it. I know Justin, you're a fan when you have a cold.

**Justin:** Mm-hmm.

**Sydnee:** So, it's not hard to maintain your vitamin C stores. But let's say you go about 60 to 90 days without vitamin C.

**Justin:** Okay.

**Sydnee:** You're gonna start showing the first stage signs of scurvy. The first stage of scurvy is like just fatigue and some muscle aches. Like, you're really tired. And this was a big problem, as you can imagine, 'cause we're gonna talk a lot about ships and sailors, and those are the people who, you know, we associate with scurvy, if they were just exhausted and couldn't do their work on the ship.

**Justin:** Mm-hmm.

**Sydnee:** The second stage progresses to the classic, you've probably heard of bleeding gums.

**Justin:** Right.

**Sydnee:** So your gums start to bleed, you start to get some joint pains, you may start to lose some teeth. Then we progress to the third stage, which is much worse, the pain, the joint pain, and the muscle pain, and everything becomes much, much worse. Your gums, instead of just bleeding, they bleed a lot more, but they also start to like putrefy and rot. Because there's a lot of talk, when you read about like historical descriptions of scurvy, about people's breath. Their breath is just like death because their gums are rotting.

**Justin:** Mm-hmm.



**Sydnee:** You can start to get hemorrhages all over your skin, you can start to get ulcers all over your skin, and gangrene, and things start kind of dying and breaking down.

**Justin:** Ugh.

**Sydnee:** And in the final stage of scurvy, you start to get fevers, probably 'cause you're getting extra, you know, you're getting infections and stuff too. You get necrosis, so you know, death of different tissue areas. You get hemorrhaging, and the hemorrhaging can finally occur in like your heart or your brain or somewhere really important, and then unfortunately you can die. So that's kind of what happens with scurvy.

**Justin:** Mm-hmm.

**Sydnee:** So if you can imagine this happening to a lot of people at once, this was probably pretty terrifying.

**Justin:** Right. On a ship especially, 'cause you're roughly on the same time.

**Sydnee:** Mm-hmm.

**Justin:** I mean presumably since the last vitamin C. So I bet you would see people kind of get it in waves.

**Sydnee:** Exactly. Exactly, and you had no idea how people were getting it or how to stop it.

**Justin:** Mm-hmm.

**Sydnee:** The reason that— It's kind of funny, 'cause if you look back as to like why— when you start to see descriptions of scurvy, when it happened— Kind of you could theorize that initially humans lived where stuff grew all year long. We lived in like warmer areas.

**Justin:** Mm-hmm.

**Sydnee:** Because otherwise, if we lived cold places before we knew how to grow things, then you know, we'd die.

**Justin:** Right.

**Sydnee:** When it was really cold.

**Justin:** Right.

**Sydnee:** So as we start to see farming and like agrarian societies, and humans start like migrating to more temperate regions, and we start depending more on grain and things like that, we start to see vitamin deficiencies like scurvy.

**Justin:** Mm-hmm.

**Sydnee:** Because then we're not naturally around all the vitamins we need necessarily.

**Justin:** That makes sense.

**Sydnee:** You can't get citrus fruit all year long and such. The Egyptians spoke of something that sounded like scurvy in the Ebers Papyrus. They actually advised— They described something with bleeding, and hemorrhaging, and all this stuff, and then they said, you know, you should probably eat some onions for it.

**Justin:** Is there vitamin C in onions?

**Sydnee:** Yes, there is.

**Justin:** Nailed it. What's up, old timey fools?

**Sydnee:** I know, it was pretty good.

**Justin:** Got it in one.

**Sydnee:** I don't know how— probably just through process of elimination, like try different things. Onions seemed to work.

**Justin:** I—

**Sydnee:** Or just like onions are good on things? Like they just li— liked onions?

**Justin:** I— onions are weird. It's weird to think that onions have any sort of nutritional value. They just seem like... salt— like kind of like salty water. Like hard, salty water.

**Sydnee:** [chuckles] That's— that's your— that's what you think an onion is like?

**Justin:** It's just like hard, salty water.

**Sydnee:** I feel like you've been eating the wrong onions.

**Justin:** Does cel—

**Sydnee:** Or maybe— do you know what an onion is?

**Justin:** Yeah. Celery's like crunchy water. We know this.

**Sydnee:** Okay.

**Justin:** This is known. And onion's like hard, salty water that makes you cry.

**Sydnee:** So on your burger, do you ask for hard, salty water, and tomatoes?

**Justin:** No, I say onions.

[Sydnee chuckles]

**Justin:** Like I'm still living in society, Sydnee. Sheesh!

**Sydnee:** Hippocrates also described something that was probably scurvy. He talked about specifically— I mean, whenever you see a description of the bleeding gums, and the really bad breath, and just like bleeding from the nose, and bleeding from the skin, and that kind of stuff, it's probably, probably scurvy.

I mean, there's lots of other things, but probably scurvy that they were talking about. But he was much less helpful when he talked about what to do. He just said that look, there is a treatment for it, but "it's a tedious cure that often accompanied a patient to his death."

**Justin:** Ha!

**Sydnee:** I don't know what the cure was, but it sounds like it wasn't a good one.

**Justin:** That's funny. He won't— he's not even gonna deign to detail it there. He's like "Trust me, yeah, I do know a way to fix it, but it's like the worst, so I'm not even gonna lay it out here".

**Sydnee:** And you're gonna die anyway.

**Justin:** "Yeah, so it's just like forget it."

**Sydnee:** The name "scurvy" actua— probably comes from either the Danish word or the Dutch word for mouth ulc— ulcers, which sounds like scurvy, because there were a lot of ulcerations in the mouth. So we have the word long before we have the idea of vitamin C or anything like that.

**Justin:** Is it weird that we have like— Like, is it weird that we have a name for this? Like, is that— is that odd that we have—

**Sydnee:** Uh-uh.

**Justin:** 'Cause it's not really a disease, right? It's not even really an illness technically, right?

**Sydnee:** It's a vitamin deficiency.

**Justin:** But it's a vitamin deficiency. It's not like— like it's vitamin C deficiency, it's not scurv— like...

**Sydnee:** It's ... Well, I mean—

**Justin:** Scurvy, giving it a name would seem to imply that it— that it has a pathology, for lack of a better term.

**Sydnee:** I mean, it does. You need vitamin C for a lot of things.

**Justin:** I'm us— I'm using the wrong word then. Like a— why do we have a name for this, like because it's just vitamin C deficiency? You're deficient of vitamin C.

**Sydnee:** Well, I think— So first of all, I will say this. We have names for most of the vitamin deficiencies.

**Justin:** Like what?

**Sydnee:** Pellagra, beriberi.

**Justin:** Drop— dropsy.

**Sydnee:** No. Well, no, that's a whole other thing. That's many things.

**Justin:** Cropsy.

**Sydnee:** But— [chuckles] There are names for different— Rickets.

**Justin:** Okay.

**Sydnee:** There are names for a lot of different vitamin deficiencies, and if I had to guess why, I mean first of all, doctors love to name things.

**Justin:** Sure.

**Sydnee:** The only surprising thing is that they're not all named after doctors, right? 'Cause that's typically what we like to do, name something after ourselves.

**Justin:** Yeah. I'm surprised actually those vitamins aren't named after doctors.

**Sydnee:** Yeah, that's a good point. But the— with the vitamin deficiencies, my guess would be it's because we understood that there was a clinical syndrome that these people had.

**Justin:** Mm-hmm.

**Sydnee:** Long before we understood what was causing it.

**Justin:** Okay. Well, that makes sense.

**Sydnee:** Because we had to understand what a vitamin was, and that we needed it for different little processes in our body, and what would happen if we didn't have it, and that took us a while to figure out.

**Justin:** That makes sense. Okay.

**Sydnee:** In the time of the Crusades, there was an epidemic of what was likely, again, des— by description, was likely scurvy. And it was actually triggered by the Lenten fast, when soldiers ate little in general. They ate no meat, they ate eel instead of meat, and it actually, because it was at the time of this fast, it was linked back to the eel.

**Justin:** Okay.

**Sydnee:** People thought that it was related to eating eel because it was believed that eel... eat... dead people. Eels eat dead people.

**Justin:** Okay.

**Sydnee:** And so they thought— that— I don't think that's true.

**Justin:** No.

**Sydnee:** So they thought that eating an eel would then make you, you know, make like you rot, like your gums rot, and putrefy and stuff.

**Justin:** Yuck!

**Sydnee:** Because eels eat— eels ate dead things. Anyway. But all, there's a lot of descriptions of barber surgeons cutting away a lot of dead gum tissue.

**Justin:** Yikes.

**Sydnee:** Yeah, which is pretty gross.

**Justin:** That's the worst thing.

**Sydnee:** It was really in the 1400s when we start to develop like the sailing technology to keep ships at sea for very long voyages.

**Justin:** Oh, right.

**Sydnee:** That we start to see scurvy as a real problem, because now we have a bunch of guys— usually a bunch of guys, locked on a ship. They're not locked, but I don't know where they're gonna go. There's just water everywhere.

**Justin:** Yeah. They might as well be locked.

**Sydnee:** Yeah. [chuckles]

**Justin:** It's nature's most perfect ca— prison.

**Sydnee:** [chuckles] For a very long time, and they don't have access, usually, to fresh fruit and vegetable.

**Justin:** Mm-hmm.

**Sydnee:** And so you start to see vitamin deficiencies. And sometimes, you could make the case because this— of this connection, that in some descriptions of scurvy, historically, what we're really describing is probably a lot of different vitamin deficiencies.

**Justin:** Mm.

**Sydnee:** Because these sailors did not have like a very varied diet.

**Justin:** All they knew is they were— they were falling apart.

**Sydnee:** Right, and so like there were some times where you may see descriptions of scurvy that have things attributed to them that may have been vitamin D deficiency, or vitamin B deficiency, or other vitamin deficiencies as well.

**Justin:** What do they call vitamin B deficiency?

**Sydnee:** It depends on which one. There's beriberi and there's pellagra. It depends— it, there are different types of vitamin B, and—

**Justin:** Got it.

**Sydnee:** Yeah. Vasco da Gama, who of course was looking for a route to the East Indies by rounding the Cape of Good Hope, he lost 100 of his 160 men to scurvy.

**Justin:** Yikes.

**Sydnee:** So it was a huge problem when we start to look at these long sea voyages, and there are many, many really explicit descriptions of scurvy from these trips, from the doctors aboard these ships or just from the men aboard these ships.

There is a poem that I— that I stumbled across. And I don't wanna read you the entire poem. It's by Luis de Camoes, who wrote about— in the 1400s, wrote about scurvy. But there's some, like I said, there's some really crazy descriptions from this time period. Like "ghastly the mouth and gums



enormous swelled, and instant putrid like a dead man's wound, poisoned with fetid streams the air round". It's really—

**Justin:** Very dramatic stuff.

**Sydnee:** — beautiful stuff, really.

**Justin:** Yeah.

**Sydnee:** [chuckles] Lovely, I would say. Da Gama, for example, had no idea what to do, what this was or what to do for all of his sailors who were dying. So he advised that they start drinking their own urine.

**Justin:** Does urine have vitamin C in it?

**Sydnee:** If— it could. If you're vitamin C deficient, no. But if you take—

**Justin:** Right, because it— Yeah.

**Sydnee:** If you take extra vitamin C, yes. I would not say that it was helpful in this case.

**Justin:** Right.

**Sydnee:** Magellan probably lost about half of his crew on three different ships, to scurvy, so that's—

**Justin:** They must have thought it was curses, right? Had to.

**Sydnee:** I'm sure that that was, that was part of the thought. There were lots of, there were lots—I don't— we'll get into that. There were lots of theories as to what was happening, but yes, there was a lot about bad luck, and curses.

**Justin:** Mm-hmm .

**Sydnee:** And, you know, that kind of— a lot of superstition surrounding scurvy.

**Justin:** Mm-hmm.

**Sydnee:** But the— Did you know this about Magellan? That he had three ships, 250 men, and that in total only 18 returned?

**Justin:** Oh my god.

**Sydnee:** I didn't know that. Now, not all of those were lost to scurvy, but most of them were.

**Justin:** But still.

**Sydnee:** About half of them were.

**Justin:** That's bad luck.

**Sydnee:** Cartier lost so many men to— on his— on his voyages, to scurvy, and it was so horrible to watch that he actually had an autopsy done on one of the men on his ship, to try to figure out like what was going on. Which is interesting for the time period, that somebody was thinking like “I don't know, let's cut this person open and see if we can figure it out”. That was some advanced thinking.

And there's some writing about what they found, like some green and black lungs, and a withered heart, and a jug full of red, date-colored water around it, but I, you know, they didn't really figure anything out.

**Justin:** So it was the Grinch. It was pretty much the Grinch.

**Sydnee:** [chuckles] It was the Grinch. His hat— his heart did not manage to grow three sizes, though.

**Justin:** Sadly.

**Sydnee:** Cartier also wrote that he found a man named Dom Agaya who claimed that he had recovered from scurvy himself by boiling the branches of the aneta tree.

**Justin:** Mm-hmm.

**Sydnee:** And then drinking the water. And so Cartier ordered his men to do so, and it actually cured those who were suffering from scurvy.

**Justin:** Wow.

**Sydnee:** And it's probably— now, there, there's been some debate as to exactly what tree we're referencing, 'cause that's an outdated name.

**Justin:** We know it today—

**Sydnee:** We don't use that term anymore.

**Justin:** We know it today as the orange juice tree.

**Sydnee:** N— No.

**Justin:** The tree where orange juice comes from.

**Sydnee:** It was just some kind of pine tree that had a lot of vitamin C in its needles.

**Justin:** That's fine, too. I like the orange juice tree.

**Sydnee:** But it, but it— Exactly which evergreen it was, I don't really know.

[office chair squeaks in the background]

**Sydnee:** Still, with all this, between 1500 and 1800, scurvy is the leading cause of naval death.

**Justin:** Really? Just—

**Sydnee:** Not battle, not— you know, just scurvy.

**Justin:** — scurvy. Cool, because it's like inevitable.

**Sydnee:** And it's by like—

**Justin:** Unless you've got a secret sock somewhere, everybody's getting it.

**Sydnee:** Exactly. And it's by like orders of magnitude. Like it was like how many men died in battle? Oh, like 1000 or so, and then how many men died of scurvy? It was like 100,000 or so. I mean, it wa— lots of people were dying of scurvy. And the doctors had lots of ideas about that. Maybe it was bad air. We've talked about this before, the idea that, you know, you just—

**Justin:** Go out there where the mermaids are, and all of a sudden the air quality dips.

**Sydnee:** The air quality— [chuckles] Because of the mermaids?

**Justin:** Well, not because of the mermaids, but it's like, well, mermaid country. Air's gonna be bad out here.

**Sydnee:** I don't remember them covering that in *The Little Mermaid*.

**Justin:** No. Well, she didn't go up to— long enough. Up to the sea, to our level.

**Sydnee:** Oh.

**Justin:** So she didn't even understand air. That's how dumb she was.

**Sydnee:** Okay. I don't think you understood the story of *The Little Mermaid*, but we'll cover that some other time.

**Justin:** [singing] This is like water I can't float in, I hate this, I just remembered I can't sing. 'Cause a witch stole my voice. Oh God, I'm still singing.

**Sydnee:** This is a great rewrite.

**Justin:** That's the— Alan Menken cut that one out.

**Sydnee:** Well— Okay.

**Justin:** He said it wasn't good enough for the movie.

**Sydnee:** We'll work on this a little bit later.

**Justin:** Okay.

**Sydnee:** Come up with like our—

**Justin:** I think it's a great start, though.

**Sydnee:** Our *The Little Mermaid* fanfic musical about scurvy?

**Justin:** Mm-hmm. Yeah.

**Sydnee:** Okay. Great. The— there were also theories—

**Justin:** What if she rescued Prince Eric by just shoving limes in his mouth?

**Sydnee:** [chuckles] Well, that would have been a bad plan.

**Justin:** Why?

**Sydnee:** And I'll tell you why.

**Justin:** Whoa! Okay, cool. Twist.

**Sydnee:** Soon, but as I was saying, the doctors had lots of ideas. They thought maybe it was lack of oxygen.

**Justin:** Mm-hmm.

**Sydnee:** Maybe it was thick blood, maybe sugar caused it, maybe it was melancholy.

[Justin snorts]

**Sydnee:** Guys got sad when they were out on boats for long times.

**Justin:** Everybody just happened to get sad at the exact same time.

**Sydnee:** The turning point was really after Sir George Anson attempted to sail around the globe— sail around the globe. He did, he didn't just attempt. In 1740, that people realized this was a big deal. It took him four years, and he lost 1,400 men, largely to scurvy.

**Justin:** Wow.

**Sydnee:** And it— this was such a dramatic event, and it was so well covered when he returned finally, that it led to like the age of scurvy research.

**Justin:** Hm.

**Sydnee:** Where we see like people starting to look into what was causing it.

**Justin:** Huh. Interesting. And it turns out oranges the whole time. Or the lack of oranges.

**Sydnee:** Well, I'll get to that, spoilers. But why don't we go to the billing department first?

**Justin:** How is that a spoiler? We talked about oranges. Let's go.

[theme music plays]

[ad break]

**Justin:** So you were gonna tell me about oranges?

**Sydnee:** So when we— The real big breakthrough with scurvy—

**Justin:** But not limes?

**Sydnee:** No.

**Justin:** Okay.

**Sydnee:** Hold on.

**Justin:** All right.

**Sydnee:** The breakthrough with scurvy comes with James Lind. He was a surgeon aboard the HMS Salisbury that— And he really uncovered, sort— he uncovered the secret. Not The Secret that that book is about.

**Justin:** No, right.

**Sydnee:** That I still haven't uncovered, 'cause I haven't read that book.

**Justin:** He did use The Sec—

**Sydnee:** The secret—

**Justin:** He did use The Secret to find the secret answer to scurvy.

**Sydnee:** I can only assume that's true.

**Justin:** He made a— he made a vision board with pictures of people hunched over.

**Sydnee:** I don't think that's true. [chuckles]

**Justin:** But he had one question— like it was a picture of a ship with a bunch of dead bodies on it, and just like question marks all over it, on his vision board, and he's just like “How? How? Why? Where? What is happening?” And he used the secret, and the law of attraction, just found out, and he found the answer.

**Sydnee:** Is that—

**Justin:** Like attracts like, Syd. So if you put positive energy out into the world, that's what you're gonna get coming back to you, like attracts like.

**Sydnee:** Is that sort of like Sh— ... Is that sort of like Sherlock with his mind palace?

**Justin:** Similar to that, except it's an immutable law of the universe, not unlike gravity or that it— it's round. Um, that's the—

**Sydnee:** [chuckles] That's the— a law of the universe is that it's round? Okay.

**Justin:** [chuckles] Law— law of attraction.

**Sydnee:** We'll work on that later.

**Justin:** Is a law, a natural law like those, and that law states that like attracts like. So just put positive, scurvy-curing energy into the world.

**Sydnee:** I don't know that I— I don't know that I believe in any of this. Okay.

**Justin:** And just— Well, you don't need to believe in it. It's a law. [chuckles]

**Sydnee:** Well—

**Justin:** You don't believe in— If I don't believe in traffic laws, I'm gonna still gonna stop at those little red lights, you know?

**Sydnee:** Let's just, let's just stick to scurvy. I think that's the thing that I'm—

**Justin:** [whispers] The Secret.

**Sydnee:** I can officially talk about. Scurvy struck the ship—

**Justin:** [whispers even quieter] Secret.

**Sydnee:** [chuckles] — on which James Lind was a surgeon, in 1747 when it was in the English channel. And he— there were 12 men who were quite



sick, and he began to experiment on them. Which I guess— I guess we can excuse, considering nobody else knew what to do for scurvy. So at least he was— at least he was trying something. He put— he broke them up into six groups of two each, and he gave each group either vinegar, cider, elixir of vitriol, nutmeg, seawater, or... oranges and lemons.

**Justin:** Uh-oh.

**Sydnee:** Yes.

**Justin:** I see where this is going.

**Sydnee:** So he compared all the groups. The guys who ate the fruit got better very quickly.

**Justin:** Now, was this on a boat?

**Sydnee:** Yeah.

**Justin:** Okay.

**Sydnee:** The HMS Salisbury. And, he—

**Justin:** Right. Okay, now I remember now.

**Sydnee:** — he declared at that point this is a problem with ci— with, something with citrus. They need these fresh, fresh fruits, citrus fruits, oranges and lemons specifically, still not understanding, of course, vitamin C, by any stretch. But he— he knew that this was what—

**Justin:** But pretty good.

**Sydnee:** Yeah, this was what people needed. Now, to be fair, he also included— 'cause he, he published this, *A Treatise on Scurvy*, in 1753, that really I mean, changed the game—

**Justin:** Right.

**Sydnee:** — so to speak, for scurvy. Uh, but he also mentioned that he thought things like dampness, and depression, and crowding, and the fact that there were also no fresh vegetables were problems. But among that, he got the important thing.

**Justin:** It's hard to—

**Sydnee:** Oranges and lemons.

**Justin:** Yeah. It's hard to believe it could be something that simple, I guess.

**Sydnee:** Now, here's the crazy thing. One, it took over 40 years for the navy to act on it, and two, it seems like, for a while, the cure kinda got lost.

**Justin:** What?

**Sydnee:** Like he— he specifically compared things that were acidic to oranges and lemons, 'cause there was this belief that maybe it had to do with like not enough acid. So if you had ate something that was acidic, it would work.

**Justin:** Okay.

**Sydnee:** And that would work sometimes, oranges and lemons.

**Justin:** Lemons, right.

**Sydnee:** But not other times for things like, like he had them have cider, and it, you know, wouldn't work. So he specifically compared acidic things to prove that it wasn't the acid, but for some reason he did this, people listened and went “Hmm, hmm, hmm, very interesting. Okay, that's great”. And then went back to trying more acidic foods. For instance, a food that is more acidic... is a lime.

**Justin:** Oh.

**Sydnee:** Now, limes have much less vitamin C than lemons.

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

**Sydnee:** Yes, that is true. Secondly, they weren't giving sailors fresh limes. They were giving them lime juice. So it was extracted from the limes exposed to the air, held in something that contained copper, and the long and short of it is that the less vitamin C that limes already contained was even lessened by the process that it went through. So they really weren't being very helpful with the lime juice.

**Justin:** Hmm.

**Sydnee:** So in the meantime, other stuff started to become popular. So even though we have figured this out, this is a crazy thing about the story of scurvy.

**Justin:** It's done. It's a done deal.

**Sydnee:** We figured it out. Oranges and lemons, give them to sailors, you're good. For a while, we didn't do it. We gave people mar— mul— malted barley.

**Justin:** Ew.

**Sydnee:** There was a theory that, from David McBride, that all bodies are held together with fixed air. And as we decompose, we lose our fixed air, and that if we have something fermented that it will replace the fixed air. Which also like, I guess, is a good reason to drink alcohol. [chuckles]

**Justin:** I guess?

**Sydnee:** I don't know. But that if you ate a fermented food like malted barley or drank malted barley, you could replace it. Which sounds fun, but not, you know, helpful.

**Justin:** Right, or correct, or real.

**Sydnee:** [chuckles] They also, in this same time period that we had already figured this out, were still telling people "I don't know, maybe bloodletting?"

**Justin:** Just eat an orange!

**Sydnee:** Just, uh—

**Justin:** Like, just— Here, take this orange and eat it.

**Sydnee:** No, just drink some salt water.

**Justin:** No!

**Sydnee:** Or maybe... You know what? Maybe it's just that you're lazy and you need to work a lot harder on the ship, [chuckles] and then it'll get better.

**Justin:** I— If I was them, I would go on a boat that was gonna go on a long trip and bring enough oranges for me. That would be my secret orange supply. Six months in, I'm running the ship. They do whatever I tell them to do. They're— they do my bidding 'cause I'll be like king of the ship.

[Sydnee chuckles]

**Justin:** 'Cause they'll all have scurvy, and I'll be like fine.

**Sydnee:** So if you ever—

**Justin:** If you need my— I'll be in my room, eating some orange panna cotta.

**Sydnee:** If you ever invent time travel, is that what you're gonna do?

**Justin:** Yeah. No, thing one.

**Sydnee:** Thing one?

**Justin:** Thing one is go eat— eat a bunch of orange panna cotta on an old timey ship while everybody gets scurvy around me.

**Sydnee:** That is the weirdest thing that anybody's probably already— ever said in response to, “If you could travel through time, what would you do?”

**Justin:** That would be my one thing, the one thing I'd wanna do.

**Sydnee:** The other things that were recommended were something called scurvy grass, which was just a kind of grass that probably wasn't very helpful. There was wild celery, wood sorrel, soup, mustard, sauerkraut, molasses, beans, or earth was thought to be helpful. This was like a superstitious belief.

**Justin:** Mm-hmm.

**Sydnee:** Being out on the sea was sickening. Like, it would make you sick. So if you—

**Justin:** Return to ga— return to Gaia.

**Sydnee:** Yeah, return to the earth and you'll be okay. So there were people who tried to like bury themselves in the ground like halfway, and see if like just being encased in the earth would be helpful. Which, I mean... I guess saved the grave diggers some time on the other end.

**Justin:** Yeah, and the local kids.

**Sydnee:** Went a little dark there. Sorry about that.

**Justin:** Yeah. Ugh, gross. Happy holidays. And then the local kids kicked sand in their faces, so that was probably sad too.

**Sydnee:** So that doesn't work. Things changed somewhat in 1795 when Sir Gilbert Blaine, physician to the fleet of the British Navy, repeated some of Lind's experiment by giving all the sailors, on one particular long voyage, a ration of rum, water, sugar, and lemon juice.

**Justin:** Like, a cocktail?

**Sydnee:** [chuckles] It sounded pretty good. I would be on board with this plan.

**Justin:** Right, especially if it kept you from getting scurvy.

**Sydnee:** Most of them didn't get scurvy, and the few who actually did, he gave them extra just lemon juice and they got better. And this led to the widespread use of lemons—

**Justin:** Huh.

**Sydnee:** — by the British navy. Now, the weird thing is, it was lemons.

**Justin:** Lemons.

**Sydnee:** But...

**Justin:** But?

**Sydnee:** What did it lead to, famously, that people, people still think?

**Justin:** The uh... um... gin and tonic, right?

**Sydnee:** No. [chuckles] You are so off base.

**Justin:** The lime cordial?

**Sydnee:** It led to the term "limeys" that used to be used—

**Justin:** Oh! No, there was a—

**Sydnee:** — as a negative slang term to refer to British people in general.

**Justin:** I was thinking of a— there was a cock— there was a cocktail that came from this era.

**Sydnee:** No.

**Justin:** That— Okay.

**Sydnee:** Well, I'm certain it did.

**Justin:** I'm making— I'm— I'm pulling that out of my—

**Sydnee:** No, I'm talking about the term "limeys".

**Justin:** Limeys! Got it.

**Sydnee:** Which used— specifically was for British sailors because of this association that they all were given citrus fruit—

**Justin:** Right.

**Sydnee:** To take with them on trips. Which was a really good idea, and I don't know why we were insulting them for it.

[Justin laughs]

**Sydnee:** You know, but then it became this like—

**Justin:** Maybe it was affectionate.

**Sydnee:** — generic kind of slang term. Although it's funny 'cause when I was reading some of the articles, they all note now the term "limey" is embraced by British people as kind of a funny, fun little...

**Justin:** Yeah.

**Sydnee:** which I don't know if that's true or not, so if I have offended anyone by using that term—

**Justin:** I would— I would've been like—

**Sydnee:** — I'm sor— I don't think it is? But it's wrong too, because they weren't issued limes!

**Justin:** Nobody would've—

**Sydney:** They weren't eating limes!

**Justin:** Nobody would've been able to hurt my feelings with that, either. It's like, well, I'll see you on the other side, I guess, homie. W

[Sydney chuckles]

**Justin:** When you— when you're hunched around, like crouching around like Quasimodo—

**Sydney:** That is not—

**Justin:** I'm just like looking awesome, and swinging around with a saber, and like pirating, and like stealing other ships and stuff. And with my cool accent.

**Sydney:** I have told you... that it does not cause you to be scrunched over.

**Justin:** It's— that's a popular thing.

**Sydney:** No, it's not. But the limey thing was, and again, it was wrong, because limes don't have nearly as much vitamin C as lemons do. You're much better off with lemons, or oranges—

**Justin:** But lemony is like not a— that's not a term. Lemony? That doesn't work.

**Sydney:** [chuckles] Or in fact, like I said, onions would be even better. For instance, during the Civil War—

**Justin:** [while yawning] Better than oranges?

**Sydney:** Not as good as oranges, no. But they're up there on the chart. During the Civil War, there were a lot of men who developed scurvy due to like limited food supplies at the, you know, at the front lines. And there wasn't obviously a lot of citrus fruit, but there were a lot of potatoes and



onions, and by now we— we didn't know that there was vitamin C, but we knew that they, like citrus fruit. could help with scurvy.

**Justin:** Mm-hmm.

**Sydnee:** Potatoes do too, actually. So they collected onions and potatoes, and sent them to the front. And this led to, for a while there was a slogan during the Civil War. "Don't send your sweetheart a love letter, send him an onion."

**Justin:** [scoffs] Yeah. I mean, who— who wouldn't like to get a nice onion?

[Sydnee chuckles]

**Justin:** The problem is, where do you put the stamp? That's what nobody can figure out.

**Sydnee:** That's— is that your great onion joke for the day?

**Justin:** That's my great onion joke. Send— send your hubby an onion and he'll find it very appealing. Send him— send him an onion. It's the one thoughtful gift, guaranteed to make him cry. That's not a bad one.

**Sydnee:** That's— that one's actually pretty good.

**Justin:** That's a very good one.

**Sydnee:** Okay, I'll give you that one. I'll give you that one.

**Justin:** All right. All right.

**Sydnee:** It wasn't until— So even, even with this adoption of, all of this with vitamin C, it wasn't until 1907 when Lind's experiment was again repeated, in a lab and published, again by scientists that, you know what, we definitely believe that there is something in citrus fruit that fixes scurvy. Even though it was being used anecdotally and by local doctors on all these different levels, and even though it had been adopted by the British Navy, it was still

not wide— like accepted widespread until 1907, which is crazy, 'cause we had the cure in 1753.

**Justin:** You know— Well, it's— that's so weird to think about. I wonder how they— it seems like it would be a hard thing to do a lab experiment on. Like, seems like nutritional deficiencies would be really hard to control for.

**Sydnee:** It would. I mean, that's why you get so many—

**Justin:** And day-to-day.

**Sydnee:** That's why you get so many descriptions of scurvy that are actually like also rickets, or also beriberi, or something. You know?

**Justin:** Right. Right.

**Sydnee:** That's why you get so many like nutritional deficiencies and vitamin deficiencies.

**Justin:** I just don't know how you would keep people from doing that in their day-to-day lives. You know what I mean? Like, if they're not on a ship.

**Sydnee:** Yeah. It was very difficult. It took them a long—

**Justin:** I would— I assume they got to pay people money, maybe. You have to pay them to not eat anything citrusy while they're not at the lab.

**Sydnee:** Yeah. No, I'm sure you could do that.

**Justin:** Yeah. That would work.

**Sydnee:** Now, we actually didn't figure out, like I mentioned, that vitamin C was the culprit until we figured out what vitamin C was, and that was in the 1930s. And as you know, as we've talked about vitamin C before, it has been wildly popular ever since, so you don't see as much scurvy nowadays. It is possible. There are cases of scurvy. It's not eliminated by any stretch.

**Justin:** Mm-hmm.

**Sydnee:** Any of us could get scurvy at any time if we stopped eating vitamin C. But it's certainly not as common as it used to be.

**Justin:** I wanna say this right now, never gonna stop.

**Sydnee:** Never gonna stop eating vitamin C?

**Justin:** [chuckles] Yeah.

**Sydnee:** Well, that— I mean, that's good, 'cause you'll get scurvy if you do. [chuckles]

**Justin:** I'm never gonna stop. Don't think you can tw— change me.

**Sydnee:** Okay. No, I don't want you to, because you'll get scurvy. I— remember? I told you that part.

**Justin:** Thanks to Maximum Fun for letting us be a part of their network. There's a lot of great shows. You can go here at [maximumfun.org](http://maximumfun.org). Sort of a last notice here, we're doing a show. December 21st on Monday, 8:00 PM, in Huntington, West Virginia, at the Big Sandy Superstore Arena. If you can get by there, it's gonna be fun. It's *Candlenights*. It's us and *My Brother, My Brother, and Me*. And it's gonna be a hoot— hootenanny, I think. Or a hoot and a holler.

I think that's gonna do it for us, Syd. Thanks to The Taxpayers for letting us use their song "Medicines" as the intro and outro of our program. And thank you so much to you. Sorry this episode was a little late. You know, holidays, and sickness, and all the other excuses that we all have to keep our podcast late.

**Sydnee:** But we hope you enjoy it, and don't get scurvy.

**Justin:** Don't get scurvy!

**Sydnee:** So eat, eat all those satsumas, and...

**Justin:** And the orange panna cotta. Come over and have some orange panna cotta.

**Sydnee:** And oranges, and all your Christmas lemons. Traditional Christmas lemons.

**Justin:** [chuckles] My name is Justin McElroy.

**Sydnee:** I'm Sydnee McElroy.

**Justin:** As always, don't drill a hole in your head.

[outro music plays]

MaximumFun.org  
Comedy and culture  
Artist-owned  
Listener supported