

Sawbones 504: Tampons

Published July 16th, 2024

[Listen here on mcelroy.family](https://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, and welcome to *Sawbones*, a marital tour of misguided medicine. I'm your cohost, Justin McElroy.

Sydnee: And I'm Sydnee McElroy.

[soda can cracks open]

Justin: I'm openin' this soda, Syd.

Sydnee: No. I'm supposed to say "rip it and grip it," right?

Justin: Mmm... Strike that, reverse it.

Sydnee: Grip it and rip it.

Justin: There it is. Tonight— Thank you, listener, I'll be startin' off this *Sawbones* like I do every *Sawbones* with an energy drink review, and today we got C4 Performance Energy, Popsicle Hawaiian flavor. I'm 43 years old, if you're asking.

Sydnee: Just— Yeah. I mean, I like the popsicles, but I don't like— Well I don't like energy drinks.

Justin: Woo!

Sydnee: And I certainly don't like when they try to like have a flavor that is good other places, but then when they put it in an energy drink, they've like— they've perverted it. [chuckles]

Justin: I gotta do a show tonight, Syd, I gotta be on point.

Sydnee: That's what Diet Dr Pepper's for.

Justin: Okay. Can I— Should I start this episode with a sort of a group apology?

Sydnee: [chuckles]

Justin: Or do you wanna do— should we save it for the end? Let's save it for the end.

Sydnee: You can save it for the end.

Justin: It's easier, yeah.

Sydnee: So you may have heard, recently, in the news, very recently in the news, like I think— Well, I think that the study was actually published a couple weeks ago, but I think that it has— Not even a couple, like a week ago.

Justin: Mm.

Sydnee: But just in the last few days, it's like permeated culture. And so, like me, you may have first heard about it on TikTok and said "What?"

Justin: "Huh?"

Sydnee: "Is that real?" and then found the study and realized that yes, it is real, there are metals in our tampons.

Justin: Now Sydnee, there's metals in lots of things.

Sydnee: This is true, Justin, and that is a fair point to bring up. That a lot of times when a study like this gains traction in popular culture, it— there's a headline from it that's gaining the traction, and it's—

Justin: It's fearmongering.

Sydnee: The nuance gets lost very quickly.

Justin: Yes. [chuckles]

Sydnee: Right?

Justin: Yes.

Sydnee: And something that researchers are looking at going, "Hmm, we need to study this more," popular opinion is going to either— It's just going to be one or the other.

Justin: Right.

Sydnee: Like, "Oh, this is terrible," or, "Oh, this is nothing."

Justin: Right.

Sydnee: When the answer is usually, "we don't know if it's either or both or none of those things yet."

Justin: It's pretty common, if you're— Like especially is you have like science reporters who, I mean, obviously I mean one hopes understand science, but may not be experts in their field.

There's always a, you know, a risk when you're synthesizing data for that kind of thing that you are, you know, you're making the best assumptions you can about it, but you may miss the forest for the trees.

Sydnee: I also feel like this is the kind of thing that is going to, as experts are interviewed about it, is going to lead a lot of reporters to maybe ask the unadvisable question, [chuckles] "Will you still use tampons?" Which is a— would be a wild question to ask a human.

Justin: Right.

Sydnee: In polite society.

Justin: Yeah.

Sydnee: Typically. So.

Justin: So, metal in tampons though. We were talking— I diverted you.

Sydnee: Yeah.

Justin: We're saying there is a ki— And that is, I guess, what you probably assumed when you first saw the TikTok, that there is— It's not uncommon for people to mention— Well okay, vaccines are a pretty good example of it, right?

Sydnee: Mm-hmm.

Justin: There's things in vaccines that sound scary and you use them for fearmongering. When you understand 'em—

Sydnee: Mm.

Justin: You go, "Oh no, well, it's not really scary."

Sydnee: Right. Exactly.

Justin: This... Not that. [chuckles]

Sydnee: I think—

Justin: I'm guessing, from your— our conversations.

Sydnee: I think that there is some— there— I'm not gonna— [sighs] I'm don't even wanna say "cause for concern," but I do think this is something we should be paying attention to.

Sometimes it's just like this is not something you need to worry about, or will impact you, or can impact, and that's the end of that. This is something that I do think is worth paying attention to.

I— Certainly, I never— No, I don't wanna say "never." Sometimes you should panic. Don't panic over this. I'm not— I do not think everyone should panic, so this is not fearmongering. But I do think we should be paying attention.

So there was a study that was published in *Environment International*, and I'm gonna talk— We're gonna talk a little bit about the history of tampons first, like modern history of tampons, but I wanted to talk about

the study because I think— I don't wanna save that for the end, I know that's what you wanna hear.

So *Environment International* published a study called "Tampons as a Source of Exposure to Metal(oids)." "Oids" was in parentheses, so metal and oids, metalloids, both. And researchers looked at the amount of heavy metals, including some that are toxic, in 30 different tampon brands.

This included a bunch of different brands that are popular throughout the US, EU, mainly France I believe, and the UK. And they also looked at both store brand and name brand tampons, and they looked at organic and non-organic tampons.

Justin: Okay.

Sydnee: Okay? And the way that they did this is they— If you're interested in how do you look at— how to you figure out if there's metals in a tampon. So—

Justin: Put a magnet to it.

Sydnee: Huh?

Justin: Put a magnet up to it.

Sydnee: Yeah, that's what they did, honey. They held magnets to boxes of tampons in the supermarket aisle, and saw which ones stuck.

Justin: Wow. Easy.

Sydnee: That's not true.

Justin: Oh.

Sydnee: That's not true at all.

Justin: Dang, false.

Sydnee: Did you really think that's what they did?

Justin: No, I didn't when I said it, but you played it so cool, I was like, "Dang, J-man, you did it again."

Sydnee: [chuckles]

Justin: So yeah, you got me twice, I guess.

Sydnee: No, they took little bits of tampons—

Justin: [quietly] She won.

Sydnee: It's great— Which by the way, I just— I was reading news articles about this study and they all link to this study, so I was able to go directly to the study and read it.

It's all freely available, from the journal *Environment International*, so if you want to go find "Tampons as a Source of Exposure to Metal(oids)," you can, and you can read the entire thing for yourself. And you can also find there's like a very helpful picture of like a— [chuckles] a tampon that has been taken apart into all of its base components.

Justin: Yeah.

Sydnee: And so it's like—

Justin: And then— And is it— Is that where you see the metal rod inside of it?

Sydnee: [laughs]

Justin: You're like, "How did we miss this? How is this here?"

Sydnee: "How did we mi—" No, but it has like a diagram of a tampon, and it's like, "Here is the non-woven outer covering, and here is B, the withdraw string, and C, the inner absorbent core," which has been sort of shredded and poofed out to a big mass of cotton.

Justin: I will say this Syd, there can be—

Sydnee: The applicator and the wrapper.

Justin: There may be some percentage of our nation's scientific minds that need a diagram of how [chuckles] a tampon is put together.

Sydnee: Would we like to revisit Sally Ride and the hundred tampons?

Justin: [laughs]

Sydnee: So anyway, they took bits of different parts of the tampon, right? So like the outer covering that some of them have, which is sort of like a woven material, the inner like poofy cotton stuff that absorbs it.

Justin: Can I— Seriously, you may wanna explain the parts of a tampon. [chuckles]

Sydnee: Okay. So a tampon, if you've never seen one, which maybe you haven't, generally looks like— I mean they're described as "bullet-shaped." [chuckles] And that often is kind of what they look like, little— I mean larger than that, pieces of usually cotton, something absorbent.

Justin: Right.

Sydnee: They might have like— And when I talk about like the outer woven covering, it's like to hold the cotton, and so you— when you look at the tampon, you might not even— It's not like you're seeing the covering.

Justin: Right.

Sydnee: It's just kind of the netting, mesh, netting sort of substance like that is around the outer cotton part.

Justin: Right.

Sydnee: Okay? And then it has a string hanging off of it.

Justin: Right. So the cotton absorbs the menstrual—

Sydnee: Product, yeah.

Justin: Product.

Sydnee: Exactly.

Justin: And it— The netting sort of holds that all together, so that it's like—

Sydnee: Yeah, so that it's all one thing.

Justin: Yeah. Right.

Sydnee: That you can— And then it's got the string, so you can pull it back out.

Justin: The string is of course like the skyhook from *Batman*.

Sydnee: [chuckles]

Justin: That's what you use for exfiltration.

Sydnee: Yes.

Justin: That's how you get 'em out in a pinch.

Sydnee: Exactly.

Justin: Or not in a pinch.

Sydnee: Exactly. Just— It's just how you get 'em out. And they can come with or without an applicator.

Justin: Mm-hmm.

Sydnee: And an applicator can be cardboard, or it can be plastic. They— The ones— They made plastic ones that are like rounded at the tip, because then they're easier to insert is the idea.

But then obviously there's a lot of concern about the environmental impact of all these plastic applicators. You can also find like more environmentally friendly ones that are paper.

Justin: Yeah, edible.

Sydnee: Cardboard.

Justin: Some edible, I've seen.

Sydnee: I mean.

Justin: That you can do.

Sydnee: No, I've never seen edible. And there's also tampons that don't have applicators. So you just get the little cotton thing.

Justin: Mm-hmm.

Sydnee: And use your finger as the applicator.

Justin: Okay, can I ask a really dumb question?

Sydnee: Okay.

Justin: Okay, 'cause this is something that I didn't understand earlier, and I'm— that's about where I'm at now. Some are small, like you're saying, and then some are larger, like... glowstick-shaped.

What is the deal, what's goin' on there? What's the tubes? What's up with the tubes, and then there's a smaller thing?

Sydnee: Oh, well, you're talking about the applicators?

Justin: I don't know. Like I've seen the small things, and then there's like bigger things, like sometimes it's like a bigger...

Sydnee: So—

Justin: Is that—

Sydnee: — it depends on if the applicator is like an extend— and expandable one or not.

Justin: Ohhh, okay.

Sydnee: There are some really small tampons, and it's because they've turned the applicator into a... like a telescoping expandable thing.

Justin: Oh, okay.

Sydnee: That you pull out, and then push the plunger in to... you know, force the cotton out of the applicator and into the vagina.

Justin: Yeah.

Sydnee: And then there are other ones that are just already sort of extended. Which is the longer tampons that you see.

Justin: Okay.

Sydnee: And then there are ones that don't use any applicator, which are quite small if you look at them packaged, like, they can be very little.

They have those a lot if you go to like a gas station bathroom, convenience store bathroom, and there sometimes are tampons you can buy in a machine. Or if they're really nice, they're free. The— Usually you have to buy them. They're usually the applicator-less ones.

Justin: Mm.

Sydnee: Because they take up so much less space.

Justin: Okay.

Sydnee: Okay?

Justin: Alright, no more diversions. I'm sorry.

Sydnee: Yes, and there— And if you see different sizes in terms of like, "super, regular, ultra."

Justin: Yup.

Sydnee: "Super plus," that— they're talking about the amount of flow. That is not— That has nothing to do with the size of vaginal cavity. That is just the flow.

Justin: Why don't you— Why not always just use super?

Sydnee: Well, there— it's a larger piece of cotton.

Justin: Hmm.

Sydnee: So I would say that they might not be as comfortable to insert.

Justin: Mm...

Sydnee: And if you don't need it, why are you putting a larger piece of—

Justin: It's like using a bigger bandage than you need.

Sydnee: Right.

Justin: It's just extra bandage.

Sydnee: Just use the size you need.

Justin: It'd be annoying, you mean, okay.

Sydnee: Yeah. That's it.

Justin: Interesting.

Sydnee: But that has nothing to do with— I think there's been a misconception that it has something to do with the size of a vagina, and it has— that is not what the different sizes are for.

Justin: I knew that part.

Sydnee: Okay. So they looked at 30 different tampon brands, and they took these bits of the tampon. The other part, the cotton part, the applicator, whatever. They acid digested 'em, broke 'em down.

Justin: Mm-hmm.

Sydnee: With some sort of microwave device. Not a microwave, I'm assuming, they didn't microwave tampons, but they used a microwave

device. [chuckles] And then they used like mass spectrometry— spectrometry to measure the amounts of different... metals within.

Justin: Okay.

Sydnee: These— This— These components. And they measured arsenic, barium, calcium, cadmium, cobalt, chromium, copper, iron, manganese, mercury, nickel, lead, selenium, strontium, vanadium, and zinc.

The testing was done by the senior author on the paper, Katherine Shilling, who was a laboratory expert in metals at Columbia University, Mailman School of Public Health. And surprise! There are metals in the tampons, that's what they found. They found measurable—

These are in the— That you could— Like there's an abstract, so if you're not familiar with studies, which we've done an episode before on how to read studies. If you want to— if you want to check them out. It can be difficult to interpret them sometimes, if you're not an expert in various scientific fields, but there is always an abstract, which is a little summary.

Justin: Mm-hmm.

Sydnee: And so you can usually read the abstract to get like a basic idea—

Justin: Yeah.

Sydnee: — of what happened here. So they found measurable concentrations of all 16 metals assessed. "We detected concentrations of several toxic metals, including elevated mean concentrations of lead, cadmium, and arsenic."

It differed by region, so US versus EU versus UK, organic versus non-organic, and store versus name brand. All of these things were different in terms of what level of what metal they found.

Justin: Mm-hmm.

Sydnee: No category consistently had lower concentrations of all or most metals. [chuckles]

Justin: Okay.

Sydnee: So there was no like absolute winner, if— so to speak.

Justin: Like any-wise?

Sydnee: I don't wanna say— I don't wanna use the word "safest," because then that implies that there's danger in the others, right?

Justin: Right.

Sydnee: So I don't wanna use that, I think it would be...

Justin: Least metallic.

Sydnee: Least metals, yes. There was no routinely less metallic brand.

Justin: Okay, Syd—

Sydnee: And most— Here's what's interesting. So while in like non-organic tampons, lead was higher.

Justin: Mm-hmm.

Sydnee: The organic ones had more arsenic, so there was no like routinely... again, don't wanna use the word "safe," routinely lower category.

Justin: Okay.

Sydnee: We can't talk about safe unless we know there's a harm, and I want to stress that I do not know that there is a harm from anything they've found in this study.

And they say the same thing, in their discussion. "We don't know what this means. We know that there is no safe exposure level to lead." So like different things, metals, that we find in the environment, we have like acceptable levels of exposure.

Justin: Threshold, yeah.

Sydnee: Right? That are o— We know it's okay. We know we can be exposed to X amount of this and you're not going to be harmed by it. There is [chuckles] no level like that for lead, we're not supposed to be exposed to lead in the environment.

Justin: Mm-hmm.

Sydnee: So if there's lead in the tampons, that's not great, because—

Justin: Yeah, because all lead is bad.

Sydnee: We kind of just say we shouldn't have any lead in anything. Because lead is stored in bones, it can replace calcium, it can be retained in the body for decades, and it is associated with neurological, renal, cardiovascular, immunological— So many different— It can result in neurobehavioral impact in adults and children, even in low levels, decrease cognitive function.

Justin: [chuckles]

Sydnee: So like, lead is bad for humans, generally speaking. Arsenic is a known carcinogen, meaning cancer-causing substance. It's associated with heart disease, and respiratory, neurolog— Again, all of these different things.

Cadmium has effects on the kidneys and the heart. And all three government bodies— This is all from this study, by the way, all of these thi— these facts I'm giving you.

All three government bodies... where they've found these tampons, the places where they've purchased the study, so the EU, the US, and UK, "regulations around tampons are not extensive and do not require regular product testing."

Justin: Okay, so I gotta ask a question—

Sydnee: [chuckles]

Justin: — 'cause this is occupying my mind, and you may have no insight into this, in which case that's fine. But I don't— I feel like history will look

back on this, maybe, possibly, and be like, “Wow. We’re really lucky that we found the metal in tampons. I can’t believe— ”

Why did they look at tampons to— for metal? What made them think like, “We should check,” and then all of a sudden, tampons they found had not just some metal, but lots of different kinds of metals. What on earth made them think to check tampons for metal?

Sydnee: Well. [chuckles]

Justin: [chuckles]

Sydnee: So, tell you what. That kind of gets us into the history.

Justin: Okay, fair enough.

Sydnee: Of tampons.

Justin: Okay, good, good, sorry.

Sydnee: So I think this is good lead in to the—

Justin: Okay.

Sydnee: — the rest of what I wanted to talk about in this episode.

Justin: Alright, perfect.

Sydnee: Let me just finish off with this study to go into this. “We don’t know the implications of this. The concern here—

Justin: Well, it’s obvious to the layman. [laughs]

Sydnee: — is that there’s metal in tampons. And—

Justin: The metal is in the tampons.

Sydnee: And the we know that specifically, the lining of the vagina is good at absorbing things.

Justin: Right.

Sydnee: So like we have done studies on administering medication sometimes through the vagina, as a way of absorbing some medication—

Justin: Does that happen regularly? Do we do that?

Sydnee: We don't nor— I mean yes, there are cases where we can administer a medication vaginally, there are some cases where we do that. But generally speaking, the reason they've done that, and what they've found, is that the way you absorb it, it's directly into the bloodstream and it's much faster.

Justin: Mmm.

Sydnee: It's very good at that.

Justin: Right.

Sydnee: And it doesn't pass through the liver. So when you— Most things like you ingest through your mouth, they have like first pass metabolism through the liver, where your liver will detoxify them.

Justin: Right. Right.

Sydnee: Because remember, that's why you don't need to detoxify yourself—

Justin: I'm—

Sydnee: — because you are doing it for you, in your liver and kidneys.

Justin: Unless the toxins are getting in through your vagina, in which case you maybe should invest in—

Sydnee: [chuckles]

Justin: — some charcoal foot pads to get `em out.

Sydnee: To detoxi— There you go. But that— We know that the vagina's very good at absorbing things, and so while we have certain levels for these different substances in food and drink, and we have certain levels

for these substances in textiles. So like zinc for instance is in textiles frequently—

Justin: We don't have vaginal safety levels for metals and metalloids.

Sydnee: It's different. The amount you're going to absorb through your skin is different than through the vagina and so this is a— We don't know what the health consequences are. But we do know that while it is brief contact, hopefully, with the tampon itself, right?

I mean they— we are advised, generally, those of us who use tampons, to not use them for more than eight hours, because of other risks associated with tampons. A typical menstruator, they did this math, will use around 7400 tampons, or possibly more in their life. If you are someone who uses them. So that's a lot of contact with tampons.

Justin: Yeah.

Sydnee: No-one has ever checked for this stuff before. No-one had ever studied it. And we do limit these— like other products are tested for these metals. That you put on your skin and in your body. But not this product that you put in your body.

So, I just wanna say, for right now, I— no-one, and the authors of the study, and many of the doctors who were interviewed to comment on this, and doctors from various areas of specialty surrounding either like reproductive health or OBGYNs, or you know, toxicologist. Nobody right now is saying "Stop the tampons!" I mean I'm sure somebody is, but the experts are not saying "stop the tampons."

What everyone is saying is "Oh, we probably shouldn't have metal in the tampons. Even if this doesn't necessarily mean it's having some horrible impact on our health right now." Nobody is— Nobody has proven that, no-one has proven that the metal in the tampon can be absorbed enough in levels through the vaginal walls that you will have health impacts—

Justin: But let's just play it safe and not put—

Sydnee: I know, well I'm just saying, I don't want you to—

Justin: I know.

Sydnee: I don't want everyone—

Justin: I know what you're saying, but—

Sydnee: — to run to the doctor and go "I've used tampons for 10 years, test me for lead." No-one is suggesting that we need to do that right now.

Justin: Someone is probably suggesting you do that right now.

Sydnee: Okay. [chuckles] The experts are not suggesting that you need to do that right now.

Justin: Alright, I got it.

Sydnee: So let's talk about how did we get here? [chuckles]

Justin: Okay.

Sydnee: But first we've gotta go to the Billing Department.

Justin: Well, let's go.

[transition theme music plays]

[ad break]

Justin: Alright, catch me up on these things, Syd.

Sydnee: Okay. So we have done a whole history of menstruation on this show before. Kind of like how we've treated, you know... bleeding, in general. [chuckles]

From the vagina, throughout history, our like sort of perceptions of it, what it's meant to us culturally and from religious perspectives and all that. There's a whole episode on it, it's very old, it's from like 2014.

Justin: Wow, yeah.

Sydnee: That's how long ago.

Justin: The early days.

Sydnee: A decade ago that we did that episode. And I will say right now, like in that— So I'm not gonna rehash that history since we've talked about it before. I will say that if you decide to go back and listen to that episode, there's a lot of gross stuff that we've done through the years, as you can imagine.

Justin: Yes.

Sydnee: To try to, you know, stem the flow of menstrual blood.

Justin: Mm-hmm.

Sydnee: I also would like to say right now that in that episode I... equate people who have periods with women quite frequently. So, I would like to apologize for that, and note that. If you choose to listen to it, that is... that is in the episode.

Justin: Yup.

Sydnee: And that was a... a less-educated version of myself. The word "tampon" is probably from the middle French for "plug."

Justin: French was my guess.

Sydnee: Yeah.

Justin: [with a slightly French pronunciation] Tampon.

Sydnee: [chuckles] For a plug. Specifically, this would've often referred to the plug as like the stopper on a bottle, or like at the end of the muzzle of your rifle. [chuckles]

Justin: Mm, yeah.

Sydnee: Tampon.

Justin: Tampon.

Sydnee: That's where that comes from. Originally, it's interesting, so up until, I mean really we're— the 1900s, when we see... what we think of today as tampons invented, something that we called a "tampon" was not— One, had nothing to do with menstruation. Had nothing to do with collecting menstrual blood. And two, was really more used as a device [chuckles] to keep stuff out.

Justin: Mm.

Sydnee: It was mainly something that was used for contraception.

Justin: Mm-hmm.

Sydnee: What they called a tampon. And occasionally, kind of like a pessary, meaning like a medicated device that you would insert in the vagina for some other sort of illness or infection, or to treat some sort of problem.

So you would soak it in something, and then insert it into the vagina to treat something. So— And this could range from like, you might soak it in honey, like a linen.

Justin: Mm.

Sydnee: Piece of linen soaked in honey, and you would insert it, and that would be a tampon to treat some sort of problem.

Justin: Mm-hmm.

Sydnee: There were— There was a period where goose fat was recommended.

Justin: Ew, ugh.

Sydnee: Specifically for contraception, for a while rock salt.

Justin: Oh no.

Sydnee: I know, which is terrible. I mean it must've been very uncomfortable. This was specifically for contraception because rock salt,

which— And I mean they wouldn't have known this at the time, but it is indeed spermicidal.

Justin: Okay, well that's... pretty good job, we'll give them that.

Sydnee: We have many better ways to—

Justin: But there's just— They're just goofy little worms.

Sydnee: [chuckles] To prevent pregnancy.

Justin: They're not hard to—

Sydnee: [chuckles]

Justin: They're not hard to kill.

Sydnee: Well, but—

Justin: They're just goofy little worms.

Sydnee: Well that's what I was going to say, like we have way better ways now, please do not use rock salt as a contraceptive, please don't do this. Please do not do this.

Justin: Okay.

Sydnee: This would be bad. There are stories in all these time periods about like maybe things that would be like tampons of the time being used for menzies, but we actually don't know if any of them are true.

They may all be apocryphal. So if you hear about things like blood moss, a specific kind of moss that supposedly was used as like an early tampon, we don't actually know if that's true.

Justin: Mm.

Sydnee: We don't know— There is a mention that Hippocrates specifically mentioned how to like create a tampon with like some lint and a stick or something. There is no evidence that that had anything to do—

I mean like probably he did do that, but it had nothing to do with menstruation. So there's been this conflation, like this retroactive conflation of every time a tampon is mentioned, it must've had something to do with a period.

Justin: Mm.

Sydnee: That probably wasn't true.

Justin: Okay.

Sydnee: It— I mean it's certainly possible. I have to think that there were people who, at the time, were not able to write history.

Justin: Yes.

Sydnee: Were not able to put down, you know, in word what we could read today. Who came up with the idea of inserting different things into the vagina as a way to stop the flow of menstrual blood. But that was not... widespread or well-known. I just think it's weird that there were all these years—

Justin: Or it was not well-documented.

Sydnee: Or not well-documented at least. There were all these years that, as far as we know, tampons were being used, something like a tampon, but not associated with menstruation at all.

Justin: Hmm.

Sydnee: I think that's a very interesting point. The...

Justin: Well part of that— I wonder if part of it is like— Well, I don't know, I'm not smart enough to try to guess why. I know that... it was much more a like... The idea that we would be out and about during menstruation I think is relatively a new— more or a new concept.

Sydnee: So that—

Justin: You know what I mean? Rather than just like staying in your boudoir and like—

Sydnee: That was part of it. There— And depending on what culture or religious tradition you were in, you may very specifically have been sort of put in a very specific place to stay.

Justin: Right. You have—

Sydnee: While you had your period.

Justin: That's where chaise lounges come from, actually. A lot of people don't know that. Pop us on chairs, is what I'm saying.

Sydnee: I don't know.

Justin: No, I'm just— [snorts]

Sydnee: You're— None of this is true. And— But I mean the other part of it is just that generally speaking again, not always but generally speaking, the people who were writing the history were not people who menstruated. Generally. Not exclusively, but generally.

The standard use of like cotton or some sort of absorbent material for tampons came around in the 19th century, but again, this was for contraception. But these things that we were calling tampons in the 19th century, these cotton things used for contraception, probably did look like what we think of as tampons today.

Justin: Hmm.

Sydnee: So probably if you saw that, you would say "Oh yeah, that's a tampon." There is a treatise called "Illustrations and Proofs of the Principle of Population" from 1822.

Justin: [snorts] Lot of Ps in there.

Sydnee: [chuckles] And Frances Place wrote this, advocating that we should use—

Justin: Fran— By Pla— Are you telling me it's "Place's Illustration and Proofs of the Principle of Population?" [wheezes]

Sydnee: Yup. [chuckles] Basically saying instead of a sponge, which was commonly used for contraception, we should use a tampon. And you could make it with lint, flax, cotton, wool. Anything soft and absorbent, and you would insert it like you would a sponge, and it would, you know, sh— soak stuff up, so.

Justin: Yeah.

Sydnee: So.

Justin: The mensies, right.

Sydnee: No pregnancy occurred.

Justin: Mensies?

Sydnee: No. No.

Justin: No. Not mensies.

Sydnee: We're— This is all again for contraception at this point.

Justin: Gotcha.

Sydnee: Nobody is talking about periods.

Justin: Ohh, okay, gotcha. Dig it. The—

Sydnee: That's— This was from the Lancet, by the way.

Justin: Oh.

Sydnee: This was published in the journal, *The Lancet*.

Justin: Wow.

Sydnee: During the 1800s, there were other devices similar to tampons that were created, but again, a lot of this was to control— Even when we started to use them for things other than contraception.

Justin: Mm-hmm.

Sydnee: Because primarily this was to prevent pregnancy, they were used for non-menstrual vaginal discharge. So it's— You will find like a vaginal tampon tube mentioned in 1879, but it is not for periods. It is for other like infections—

Justin: Confetti.

Sydnee: — or whatever that might cause some sort of discharge. And you would saturate the cotton with some sort of chemical, or something you were hoping would be a medication.

Justin: Okay.

Sydnee: It was 1879, so who knows what it was.

Justin: Probably honey. [chuckles]

Sydnee: [chuckles]

Justin: No, probably not honey. In 1879, probably not honey.

Sydnee: No, I mean that was when we were like...

Justin: Laudanum. [wheezes]

Sydnee: Mercury, you know, I mean. [laughs] Something corrosive and dangerous.

Justin: They put the mercury on there like—

Sydnee: Well I don't—

Justin: They put the mercury on there like, "Hey, this is really absorbent now."

Sydnee: [chuckles]

Justin: "We gotta stick with this. Anything metal, guys."

Sydnee: "Metal, that's the main thing."

Justin: "That's the secret."

Sydnee: "Metal."

We— And— And like a lot of these things were not— You wouldn't use them outside of a hospital. So when I'm talking about like the tampons that they used for these other cases, outside of contraception, these are things that would be inserted in a hospital by like a doctor or a nurse or a midwife.

Like the nurse may be sewing them and making them themselves. And then administering them in the hospital. And— And you would, again, soak them in some kind of antiseptic or something like that to treat some sort of infection or whatever.

It isn't until the 1920s that supposedly the idea that "Hey, these things that we're putting in there for all these other reasons might be good at managing menstrual flow," wasn't even mentioned until the 1920s.

Justin: Hmm.

Sydnee: And— But there wasn't— Like there's this story of... John Williamson, who was an employee at Kimberly Clark. A company that made a bunch of different products. And he poked holes in a condom and stuffed it with a pad, with a menstrual pad, and then said, "I think this should be a new thing," and—

Justin: Now he was well-known as an office prankster.

Sydnee: [chuckles]

Justin: So he could've been joshing everybody, we don't know.

Sydnee: But that was not picked up. Nobody wanted to do anything about that. We didn't do anything about it until—

Justin: Wait, so wait, hold on. Wait. [wheezes] This guy— This heading in this paragraph you brought me, this dude is just like— He goes into the boss's office, he's like, "I've invented tampons," and they're like, "Out,"

and on his way out he's like, "Hey everybody, tell history! Tell history that I tried to do this!"

Sydnee: You gotta wonder how people even find out about these stories.

Justin: Right! Like what is the— [chuckles] He's like, "Hey, tell history—"

Sydnee: I feel like he was telling his grandkids this, and it's all a lie.

Justin: This is—

Sydnee: I don't know that it's a lie.

Justin: You run into these— You do run into these like—

Sydnee: Mm-hmm.

Justin: This may be true, maybe not, but like when I research people, you always find like these paragraphs were like, "Um, okay pal."

Sydnee: "Are you sure?"

Justin: "You can just—" Like the cat that invented Beano invented like a bajillion other things, like, "Wow, okay."

Sydnee: [chuckles]

Justin: "This just seems like it's from your story, but alright."

Sydnee: In 1931, Earl Hoss, a physician in Colorado, made a cardboard applicator tampon. So the idea was, "I— We're gonna take this tampon that we know it exists—"

Justin: Sorry, I don't mean to cast aspersions on the Beano guy. He— I— He may not have—

Sydnee: He may well have done this, I don't know.

Justin: He might not be the guy I was thinking of.

Sydnee: Yeah. But anyway, he made the tampon inside a cardboard applicator. The tampon is kinda what you'd think of, cotton with a string, like what you'd think of as a tampon.

And it was because— He'd been inspired by a friend who said she used a sponge, and he was like, "Well instead of a sponge, why don't we use a tampon? And I made an applicator for it." And that's cool, and it—

Why would he have made an applicator and why would this have mattered? It was still very... improper at the time.

Justin: Mmm.

Sydnee: For a person to touch their own vagina, or to admit that they may do so. And a tampon without an applicator necessitates that you use your finger to insert it. So just the buying of it would be an admission that you are going to touch your own genitals.

The applicator was a way of allowing people to purchase a product... without having to publicly sort of not— And it's not like it's a confession, but by buying it you're confessing that "I'm going to go home and touch my genitals."

Justin: Can I ask sort of a dumb question for all us wiener folks over here? Is the applicator like a necessary, or a convenience? Or is it just like pointless? Or like what's the stance on applicators now that we don't have— necessarily have that same hang up?

Sydnee: There— So, they are convenient. They're definitely a convenience, they are not necessary. You can insert a tampon just fine without an applicator.

Comfort level has a lot to do with it, and then there are regional preferences. You find inside the US, applicator use is much more common. Outside the US, you'll find a lot more people who use applicator-less tampons.

Justin: Makes sense.

Sydnee: So part of it's regional. And then part— And again, part of it is just the comfort level of... knowing like... I mean, there is still great

swathes of the population where, because of cultural or religious ideology, they may feel very uncomfortable inserting their finger into their own vagina to— Which is what you have to do to place a tampon without an applicator.

Justin: Mm-hmm.

Sydnee: And if that is something that does create a lot of discomfort for you, you just don't wanna do or if you're nervous or unsure, the applicator makes it easier.

Justin: Okay. Thank you.

Sydnee: The tampon though, what's interesting is Earl Hoss made it, and made the— he made kind of what we think of today as a tampon. And he made the applicator.

And then he sold his patent almost immediately. Like he made it in '31, and then by '33, he has sold it to a woman named Gertrude Tendrick, who said "I want to do this. I'm going to take this product, and everybody's gonna love it."

I don't know why Earl Hoss had no interest in it other than— I mean, he just didn't wanna be the tampon guy. But he sold it to Gertrude Tendrick, and she made Tampax.

Justin: Wow, okay.

Sydnee: Yeah.

Justin: Got it in one.

Sydnee: It was from the word "tampon" and "vaginal pax," which "vaginal pax" were what you often would call anything that you put inside the vagina at the time to stop menstruation, so Tampax. And—

Justin: Oh, like packing.

Sydnee: Even despite the fact that there were a lot of people who were initially, you know, sort of "[gasps] Oh my goodness, no," clutching their pearls at the invention of the tampon, tampons ex—

Justin: Pearls actually wouldn't be invented for many years later.

Sydnee: That's not true. [chuckles]

Justin: What?

Sydnee: That's— Oh, you mean the tampon pearl— Tampax pearls. That— Yeah, it's good that you know a brand— or a line of tampons there. It's impressive.

Justin: I buy your tampons, what are you talking about?

Sydnee: Well, I'm just saying, that's good.

Justin: Don't try to paint me into a corner like I'm some neanderthal.

Sydnee: [chuckles]

Justin: I can buy— I buy tampons.

Sydnee: Everybody—

Justin: I've never had to apply them myself.

Sydnee: There— So in the first seven years of Tampax's time on the market, their use increased fivefold. Their factories were used to produce dressings and bandages during World War II, that didn't stop people from using tampons, and even more so because during World War II, so many people who used tampons were suddenly needed in the workforce.

Justin: Mm-hmm.

Sydnee: That... it became really beneficial to have something that you didn't have to change as frequently.

Justin: And then sometimes people in the wars are using the tampons to stop up bullet holes.

Sydnee: There you go.

Justin: So you tell me, it's a virtuous cycle, I think. Everybody's lovin' these things.

Sydnee: There was another tampon, the non-applicator kind was invented by the German gynecologist Judith Esser Mitague, and these are often know as "OB tampons." Do you know why they were called "OB tampons?" This how I was always— By the way, I only ever knew them as "OB."

Justin: I mean, I—

Sydnee: There were applicator tampons, and OB.

Justin: I would assume— I mean, the only connection in my head is obstetrics.

Sydnee: Nope. It's the German, which I don't speak German, it's "on bind," which means "no pad."

Justin: Huh.

Sydnee: Like OB. That's why they're called that, in case you're curious. And anyway, they start— and then they sold that to— she sold that to Johnson & Johnson, and so OB tampon is another huge name.

And like in a lot of regions where you mainly use applicator tampons, you may not be as familiar with it, you may be more of like Tampax, Playtex, like you know those sorts of names. OB is a huge tampon brand all of its own.

But it was hard because there was a lot— it took time to get society to accept the use of a tampon, there was still this sort of stigma against like, "Well, but are you— Are you u— Are you touching yourself?"

Justin: Are pads common at this time?

Sydnee: Pads.

Justin: Or— Pads are the—

Sydnee: Pads were common, yeah.

Justin: — de rigueur?

Sydnee: Yeah, and we've talked about, and this is in the other episode, that like pads back then didn't have adhesive on them often. So you would wear like a little belt to keep your pad in place.

Justin: Yeah.

Sydnee: And the— But the advantage of this was that it was easier than a am— than a pad with a belt.

Justin: [chuckles]

Sydnee: You could— [chuckles]

Justin: It was easier than a pad with a belt.

Sydnee: You could— [chuckles] You would have more control over your life if you use these. And there— But there was still this sort of stigma about like—

Justin: You sound like the spokesperson.

Sydnee: It was back and forth.

Justin: You sound like the spokesperson for when they were initially invented, like, "Hey everybody, so I just wanna tell you about these. It's a lot easier than a pad with a belt." [wheezes]

Sydnee: The— [chuckles]

Justin: "And it will stop the bleeding."

Sydnee: So here's the point.

Justin: Yeah.

Sydnee: Tampons were becoming more popular, and we're kind of in the US focus right now. They made these scented tampons for a while, and these were irritating.

Justin: Yeah.

Sydnee: And could cause—

Justin: They're irritating, and they're irritating. [chuckles]

Sydnee: They're irritating. I just—

Justin: Metaphorically and literally.

Sydnee: Just thinking— I am somebody who has trouble with—

Justin: Oh my.

Sydnee: — with like allergic reactions to scents.

Justin: Yeah.

Sydnee: Just thinking about a scented tampon makes... everything hurt. So—

Justin: We tried to get rid of everything scented in the house.

Sydnee: [chuckles]

Justin: And I tried to be really diligent about it. You don't realize how much stuff is scented, 'cause every once in a while, you'll get like a replacement or something from Instacart or something like that.

Sydnee: Mm-hmm.

Justin: It's like, whoa! 'Cause we try really hard to be diligent about it, 'cause Syd— [whispers] Sydnee has trouble with smells.

Sydnee: I do, I do. And I could not— So that— So in the '70s, because of all this, Congress said, "We need to regulate tampons."

Justin: [chuckles] "And we're the perfect people to do it."

Sydnee: “We’re gonna make them medical devices.” So they are no longer regulate— They were no longer, at that point, regulated as cosmetics.

Justin: Mm.

Sydnee: Which they had been before, but then they fell under the medical device regulations. So they have to go— undergo more extensive testing. However, they did not have to disclose a list of ingredients now. Which cosmetics did.

Justin: Mmm...

Sydnee: Isn’t that interesting? [chuckles] They— It— And that’s like— that’s—

Justin: I’m assuming metal was not on that, right?

Sydnee: — that’s different than like your shampoo has to have its ingredients in it.

Justin: Right.

Sydnee: Tampons don’t. ‘Cause it’s a medical device.

Justin: So were the metals on there before? [wheezes]

Sydnee: [chuckles] Well, so here’s the thing, the metals have probably always been in there, honey. We weren’t testing— Even as they— as we started doing this more rigorous testing of them, because they were medical devices.

And like by the way, one product sort of feel through the gaps there. There was a tampon called “Rely,” that was super absorbent, and so you could leave it inside much longer, was the idea.

Justin: Mm-hmm.

Sydnee: This is where a lot of the fear from toxic shock syndrome comes from. So if you leave a tampon inside your vagina for too long, the thought is that it creates a perfect breeding ground for a certain kind of

bacteria, and then you can get a shock reaction that can be fatal. Which is why they tell you don't leave your tampon in for longer than eight hours.

This Rely brand is really where that fear sort of got kicked off, because they didn't do all the testing on it, because it was approved right before this new Act was passed.

Justin: Mm.

Sydnee: And so a lot of people started using these longer acting tampons, and we saw over 100 cases—

Justin: [sighs]

Sydnee: — of menstruation-related toxic shock syndrome. So, and 38 of those were fatal. So like, very serious. So after that, they did start to look at tampons a little more closely.

Justin: Right.

Sydnee: Because of the toxic shock. So they started to look at like specifically ingredients like polyester, polyacrylate, rayon. They started looking at like synthetic fibers versus like cotton, and so they did do some research in the 80s on what we should make tampons out of, and what would prevent toxic shock syndrome.

Justin: Right.

Sydnee: But that really still had nothing to do with what else is in there.

Justin: Right.

Sydnee: Nobody was looking to see are there metals in there. Nobody was checking that out. So they did a lot of focus on like how long can you wear `em, absorbency, that sort of stuff. Ways that amplify bacterial growth, and ways where we can reduce bacterial growth inside of a tampon.

There was a concern in the '90s about dioxin, which is a carcinogen. And that had to do with like a chlorine bleaching method that was used in the processing of the tampons. And so like a lot of companies started

switching away from that, be— to reduce the amount of dioxin that was in tampons.

So we looked at this before as well. So like my point is we have looked at other things in tampons through the years.

Justin: Mm-hmm.

Sydnee: It wasn't until the authors of this study sat down and said "Yah know, a lot of plants contain metals. And the reason is that they're leeching it from the soil that they're growing in. Well if we make tampons out of plant fibers—"

Justin: Out of plants.

Sydnee: "— do tampons contain metal?"

Justin: Ohhh, look at that.

Sydnee: This is where this idea came from.

Justin: You answered my question.

Sydnee: Yes, and so they—

Justin: The prestige.

Sydnee: — sat down, and looked to see... are there metals in tampons, and there are. And—

Justin: And it turns out folks! There are—

Sydnee: There— [chuckles]

Justin: — There are a wild amount. So much.

Sydnee: They— Well and— So the where is the metal coming from? Probably some of it is from the plant fibers themselves, from the soil.

Justin: Mm-hmm.

Sydnee: Because our soils have these things in them, and so the plants get them too. Then the tampons do. Some of it may come from the processing, and that was one thing that the— It's really interesting if you read the whole study, the amount of zinc that they found made them wonder if processing is part of it.

Justin: Hmm.

Sydnee: 'Cause it seemed like— It was more than you would expect from just like leeching from the soil. And so the thought is that maybe there's something in the processing that is putting more zinc into the tampons. It is more zinc... Or it is below the threshold that we allow for textiles. But then the fear is again, you wear—

Justin: Yeah, you want— Yeah.

Sydnee: You wear a shirt on your arms, you don't put it inside your vagina. And the vagina is different. So.

Justin: That's a really useful tip for everybody, though.

Sydnee: [chuckles] So don't freak out. We don't know what this means. We don't have— I mean the next step is—

Justin: [chuckles] Don't freak out, we don't know what this means.

Sydnee: The ne— [chuckles] The next step is if there's metal in the tampon, is it getting from the tampon to the inside of your body? We don't know.

We're gonna have to find models, probably in animals, where we can see in a standard tampon with this much metal, how much of it gets absorbed from the tampon into the lining of your vagina. We don't know.

And then are those levels enough to cause any of the detrimental health effects of these chemicals? We don't know. Nobody tested anybody wearing a tampon to see if they have a higher lead level, right?

Justin: Mm-hmm.

Sydnee: Nobody did that yet. But those would be the next steps—

Justin: So—

Sydnee: — to figure out—

Justin: Hey—

Sydnee: — is this something that worries you.

Justin: Just to be clear, is there— So is there— So I think a lot— Even people who— who aren't tampon users are aware of toxic shock syndrome.

Sydnee: Mm-hmm.

Justin: Is there no connection between this and toxic shock syndrome? Or they're two completely separate things?

Sydnee: No, this has nothing to do with that. This would be a whole other issue. If it is indeed an issue, it's a whole separate issue. I would say that if you look at like in the '90s, the dioxin issue. Or even if you look at like some of the substances that they removed in response to the toxic shock concern.

A lot of this, I mean, there was the toxic shock syndrome that spurred that in the '80s. In the '90s, they didn't necessarily see cases of cancer, and then say "Oh, it's from dioxin in tampons, remove the dioxin." They said "This is a potential danger, let's just get it out of there."

So I would say that there is a question I would ask, which is even if this is just possible, even if this hasn't caused any harm whatsoever but it is a potential harm, can we make efforts to get the metal out of the tampons?

Justin: Can we just get the metal out of the tampons, maybe?

Sydnee: Could we get the metal out of the tampons? I mean like that would be my first question.

Justin: What if we just didn't have the— What if we could skip the research on what the effect of the metal is on vaginas and vagina-havers, and maybe we just don't anymore.

Sydnee: I—

Justin: Do the metal in the tampons.

Sydnee: But it's the— But this is— But like— Like a lot of things that have to do with people with vaginas and people who menstruate, the freedom to move about in the world, for those of us who do, has been limited throughout history in various ways. More severely for different groups.

And so to just blanket say "stop using tampons" would be a really dangerous, reckless statement to make, right? Without more evidence. Because they do provide a freedom of movement that previous menstrual products had not.

Now, a lot of people I know right now are screaming about the menstrual cup, and I will say that like the menstrual cup has existed— it predates the tampon.

It's a small, usually silicone or some other sort of similar material that you can insert into your vagina, and it collects the menstrual blood that way, and does not, as far as I know, contain metal. [chuckles] It's silicone. I don't— I did not study it though, for metal.

Justin: Can we— Are they gonna run it through the metallizer?

Sydnee: But—

Justin: Metal— The metal— Metallizer 3000, just to double-check.

Sydnee: So there are alternatives.

Justin: Yeah.

Sydnee: That are long-lasting and limit some of the other risks as well. But that's not for everyone, and so right now, no-one is saying— Nobody who understands this is saying "throw your tampons away."

Justin: [exhales heavily]

Sydnee: But I would pay attention to this. More studies are coming.

Justin: Yup.

Sydnee: I am certain.

Justin: Yeah.

Sydnee: And we'll know more. And I think to advocate that we regulate companies to not put metals in our tampons.

Justin: Yeah.

Sydnee: Is an absolutely fair thing to advocate for.

Justin: Absolutely. Hey folks, thank you so much for listening. You wanna come see us, you can, if you want. We're gonna be doin' some shows.

It's a rarity that you get *Sawbones* out on the road, but we're gonna be there July 18th in Detroit, before *My Brother, My Brother And Me*, and July 20th, in Cleveland, Ohio. You can get tickets at bit.ly/mcelroytours. And... we hope to see you there.

Thanks to the Taxpayers for the use of their song "Medicines" as the intro and outro of our program, and thanks to you for listening. We really appreciate it. And hey, if you came out to see *Escape to Margaritaville*—

Sydnee: Thank you.

Justin: — the past couple of weekends, thank you. We saw— met a lot of folks, thank you.

[theme music fades in]

Justin: We appreciate it. That's gonna do it for us for this week. Until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

[outro theme music plays]

[ukulele chord]

Maximum Fun.

A work-owned network...

Of artists-owned shows...

Supported directly by you.