

Sawbones 585: Blisters

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Clint: Sawbones is a show about medical history, and nothing the hosts say should be taken as medical advice or opinion. It's for fun. Can't you just have fun for an hour and not try to diagnose your mystery boil? We think you've earned it. Just sit back, relax, and enjoy a moment of distraction from that weird growth. You're worth it!

["Medicines" by The Taxpayers plays]

Justin: Hello, everybody! Welcome to Sawbones, a marital tour of misguided medicine! I'm your co-host, [sings] Justin McElroy!

Sydnee: And I'm Sydnee McElroy. Just normal, just like in a normal way.

Justin: Sometimes Oprah's with me, in my darkest moments. Oprah's there with me when I do the intro of Sawbones. And it always means a lot to me when sh—her—I don't know how she gets in there, but her spirit wafts over me and it really means a lot to me.

Sydnee: Oprah's with all of us.

Justin: Oprah a little bit is with all of us, especially if you grew up when we grew up, I think that Oprah's associated with a lot of comfort. [chuckles]

Sydnee: Yeah.

Justin: Simpler times.

Sydnee: Oprah's some—well, I say Oprah's someone you can trust.

Justin: Ah...

Sydnee: But then didn't Oprah bring us docto—

Justin: Oprah did bring us Dr. Oz!

Sydnee: Yeah.

Justin: So I don't know.

Sydnee: And Phil.

Justin: You take the good—

Sydnee: Weren't they both?

Justin: You take the good, you take the bad, I guess.

Sydnee: But I mean, the—we can all agree that overall, goo—force for good in the world.

Justin: Oprahall.

Sydnee: Force for good in the universe—

Justin: Oprahall!

Sydnee: Thank you, Oprah.

Justin: Oprahall.

Sydnee: No shade to Oprah, just like...

Justin: No shade to Oprah.

Sydnee: There is the Dr. Oz thing.

Justin: Yeah. So that shade.

[both chuckle]

Justin: So Syd, what are we talking about this week? Other than Oprah.

Sydnee: We got a topic recommendation from Avis. Thank you, Avis. And initially, I didn't know if there would be much to say about this. The question was, blisters. Blisters.

Justin: Oh, yeah, blisters.

Sydnee: A simple blister.

Justin: The humble blister.

Sydnee: The humble blister. Could there be much history behind the blister? And initially I thought, eh, probably not, right?

Justin: Who invented this thing? That's my—this is my first question.

Sydnee: Who invented a blister?

Justin: Who invented this thing? What kind of hairbrains idea is this?

Sydnee: It's interesting though—

Justin: One of the grodier things we do! [chuckles]

Sydnee: I'm gonna get into like the things that we decide to really understand and research are not—I mean, some of it is obvious. Like we try to understand and research the stuff that kills us, right?

Justin: Right.

Sydnee: Because we don't want to die, so that makes sense. But then, okay, there's a ton of research into joints and cartilage, and like trying to regrow joints. And do you know why?

Justin: Old people who have a lot of money want to feel young again?

Sydnee: That's part of it. That is part of it. The other part of it is that there's a ton of research into how to keep horses running longer. So—

Justin: Yes! Which is the—actually the exact same clientele, ironically, right? [chuckles]

Sydnee: But it's—when you find somewhere where like, I mean—and this is a very—this is very American, what I'm saying, but I'm—maybe other countries have this too. If you can find a way for it to be beneficial financially to do something, like regrow hair or make people have erections, then maybe you can find more research. Blisters are an area where there's a surprising amount of interest and research, and historical record.

Justin: What makes it such a hot topic, Syd?

Sydnee: I'm going to talk about that. I want to talk, just briefly, what is a—what is a blister?

Justin: You're asking me?

Sydnee: Yes.

Justin: Okay, so sometimes when you get hurt, it doesn't—you can get hurt and then it doesn't break the skin.

Sydnee: Mm-hm.

Justin: But there's a hurt that's beneath it, so sometimes like the layers beneath the top layer of skin are injured somehow, and then the hurt bubbles up through there, but it can't breathe or do anything else because it's all contained underneath the top level epidermis.

Sydnee: Okay, that's—yeah. Yeah, basically. So, there's a separation between layers of skin.

Justin: Sure.

Sydnee: So if we think vaguely about like the epidermis, the outer layer, and the dermis beneath it, and then you can divide that further into layers of like corneum, granulosum, spinosum, basale, so you—

Justin: Sub-dermis.

Sydnee: You get—you get—well, yeah. I mean, yes, I mean, you get down into the fat, like the subcutaneous fat. Anyway, the point is, there are layers of skin. And a blister forms when there is some sort of separation between the granulosum and spinosum.

Justin: Mm-hm.

Sydnee: And what happens is in that separation of layers of skin, you get a collection of like what we call like tissue fluid, basically, interstitial fluid builds up in there. And now you've got fluid between skin layers.

Justin: In much the same way if you were to paint a wall and you maybe put on too much paint, you might get a place on the wall where the... the paint surface had begun to separate from the wall surface.

Sydnee: Mm-hm.

Justin: And if you were to look behind that, you would actually see liquid paint rather than the dried paint on the outside.

Sydnee: There you go. And it's not—when we talk—there are a lot of different reasons why you might form a blister. I want to focus really on what we think of as friction blisters, which is not entirely accurate, but it—the blisters that you might get on your feet, if you've walked a long time, or on your hands if you've been working with a tool without wearing a glove or something, those kinds of blisters. Obviously your skin can blister for other reasons. There are all kinds of systemic illnesses meaning like whether it's a virus or inflammatory or autoimmune or you know, there's lots of reasons you can have blisters.

Justin: Some guitar solos have been known to...

Sydnee: Are blistering. There's substances that are blistering, burns can blister. And these are all reasons why that same thing is going to happen, the layers are going to separate, fluid fills the space, right? If it's really deep, blood fills the space, you get a blood blister.

Justin: Mm-hm.

Sydnee: Most of the time, they look kind of clear, right? Like a little bubble.

Justin: Yeah.

Sydnee: That's just cell fluid, interstitial fluid, just filling that space. So we're going to focus on that, but it's not—it's important to know, it's not actually the friction of the external surface on your skin. So, think about it for a moment, have you—have you ever had a callus?

Justin: Look at me. Look at me, Sydnee. Look at me. Was that leading?

Sydnee: No, I just mean on your—on your foot or hand—

Justin: Were you trying to shame me? No, I'm a pod—

Sydnee: If you've had a callus.

Justin: I podcast for a living. Do I have a callus...

Sydnee: So, I—

Justin: No, no, no, I have calluses. Yeah, mainly right here, the fingers. They're not as good as they used to be, because I've had—

Sydnee: From guitar?

Justin: I've had to stop playing for so long because my Carpal tunnel, but yeah, the calluses on my fingers.

Sydnee: And that's friction, right? Okay, so it's not a blister. So, when you think about a friction blister, you're talking about the shearing force between the layers of skin. It's not your skin on the shoe, your skin on the tool, it's the layers of skin shearing against each other, rubbing past each other, and creating that friction. Does that make sense?

Justin: Yeah, for sure.

Sydnee: It's import—we didn't understand this for a very long time. But in order to—

Justin: We thought it was the friction of the outside thing.

Sydnee: Yes.

Justin: Mm-hm, okay.

Sydnee: But in order to treat or more, you know, importantly prevent blisters, we have to understand why they form. So, why are we interested in blisters? Why am I going to be able to tell you so much about the history of blisters? There are two groups of people that really care about blisters.

Justin: Okay, let me guess the first. One of 'em's gotta be sports people, right?

Sydnee: Yeah, runners. Sports, yeah, sports. So there's lots—and I found a ton of history from like Running World Magazine on blister, and like modern—if you want to know—

Justin: Yeah, from the finest historians there.

Sydnee: If you want to know about blisters or about what people are doing right now, which by the way, everybody's doing something different, and if you have—

Justin: It's always a good sign that nobody knows what they're doing.
[chuckles]

Sydnee: Yeah. If you find something where you have like multiple different treatments for the same thing, that means we probably don't understand it—

Justin: Hiccups—

Sydnee: Yes.

Justin: Is a good example. [chuckles] I think hips—hiccups is a classic.

Sydnee: So, runners are a great source of information about blisters, then and now. And the military.

Justin: Oh, sure.

Sydnee: Makes sense, right?

Justin: Mm-hm.

Sydnee: So you have—this is why we have research on this, because you have this giant group of humans who are going to be walking, running, marching in extreme circumstances, perhaps maybe under intense stress, in all kinds of different conditions, for long periods of time. And if their feet get blistered and they cannot do it, that is a big deal.

Justin: Mm-hm.

Sydnee: So, anything that involves the military, anything that the military butts up against in medical research, we always have so much more information historically.

Justin: Mm-hm.

Sydnee: Not just because of like the modern sort of, you think of like the... I don't know, the profit machine or the idea of modern warfare, no, it's historical. I mean, for a long time, people have been walking around, fighting each other, and getting blisters on their feet.

Justin: Probably one of the most ancient things. Even when they were just in stone sandals, running around with a car powered by their own feet,, and running from, you know, the—Dino and all the gang.

Sydnee: Mm-hm. Like the Flintstones.

Justin: And their Brontosaurus—

Sydnee: And I bet Fred had lots of blisters—well, calluses.

Justin: Fred probably got calluses.

Sydnee: Calluses.

Justin: Yeah.

Sydnee: Yeah, calluses.

Justin: Yeah.

Sydnee: Probably. I will say, just on a side note, medically we did use to cause blisters. That there was a pro-blister moment.

Justin: Oh, really?

Sydnee: Yeah, re—we've talked about it on the show before.

Justin: Oh, yeah, yeah, yeah, we thought it was healthy.

Sydnee: Mm-hm.

Justin: It was like a little band-aid, nature's band-aid. [chuckles]

Sydnee: If you could in some way apply some sort of like noxious substance, usually like cantharidin from like the blister beetle, you would put it on an area of skin. And it could just be like you have a fever or you're hysterical, this was a common cure for hysteria. [chuckles] Or gout, or all kinds of different things, and you would put something corrosive on the skin. It was called vesication, or vesicle, a blister, you cause a little fluid-filled blister. And then when you started draining it, you're letting out whatever humor you have too much of. And there is, I will get to the end, there is a historical footnote here. We do still have use for blisters today.

Justin: Ooh.

Sydnee: But even going back to prehistoric times, we were mainly trying to prevent them. The first evidence we have of people trying to prevent blisters, do you remember Ötzi the Iceman?

Justin: Yeah.

Sydnee: And when they discovered—it was two German tourists found, in 1991, found a frozen body.

Justin: Yeah.

Sydnee: And this—we've learned a lot about how ancient people lived from Ötzi. I assume we named him that and like—

Justin: Probably.

Sydnee: We didn't know.

Justin: He probably didn't have a... like a driver's license.

[both chuckle]

Sydnee: Or it was like written on the tag of his—

Justin: Stitched on his—stitched in his—

Sydnee: Of his underwear. [chuckles]

Justin: Stitched to his perfectly clean underwear. "Ötzi, you might get frozen in a block of ice."

Sydnee: "We gotta know who you are."

Justin: "Clean undies!"

Sydnee: So, one of the things we learned about Ötzi were his shoes. So specifically—

Justin: BK Knights. [chuckles] It's crazy, it was BK Knights.

Sydnee: So, his shoes, reconstructed by Peter Hlavacek, who was an academic interested in... feet and shoes throughout history. No shoes—I mean like not just feet—

Justin: You don't have to make—

Sydnee: But like shoes.

Justin: Him sound like that.

Sydnee: No, like, I don't mean in a bad way, like everybody's got to have an interest.

Justin: Sure.

Sydnee: So, he reconstructed them, and the leather on the sole was from a bear. There was deer hide on the upper part of the shoe, and there's straw and moss inside. And so—

Justin: Because they were concerned about blisters.

Sydnee: Yeah. Well, because not only did Hlavacek reconstruct the shoes, he then convinced a friend to try them. [chuckles] And like go wear them in the alps, and walk around and see, whatchu think? And—

Justin: Super bad.

Sydnee: No!

Justin: It's like they're made out of a bunch of old, dusty nothing.

Sydnee: His findings said, in these shoes, you can practically not obtain the blisters.

Justin: Wow. That's interesting.

Sydnee: Yeah, so they were actually really effective at preventing blisters. However, like moss and straw have to be replaced a lot. So it's like high maintenance shoes, you know, but still. So, Ötzi was trying to prevent blisters! Right? This far—so I mean, you know, blisters have been around forever. We also know that Roman soldiers specifically at one point altered their sandal style.

As we—we kind of picture like Romans and sandals. At one point, they started wearing a boot, the ramshaw style boot. Which was probably, again, for longer walking and to prevent wear and tear on the feet, including blisters. And again, we have tried this in 2004! 12 students marched across the alps wearing—[chuckles] these ramshaw style boots. Only five of them switched to modern hiking boots.

Justin: Really?

Sydnee: The rest of them felt like, yeah, pretty good.

Justin: Wow, that's fascinating.

Sydnee: You can read—okay, I couldn't actually find the study, because it's not all uploaded online. But there is a journal of roman equipment military studies, that is a journal. The Journal of Roman Military Equipment Studies.

Justin: [chuckles]

Sydnee: That is a specific interest.

Justin: Yeah, and it's fascinating to read too, I'm sure, for a very specific sort of person.

Sydnee: But there is—there is a journal that, I think it's like once a year, publishes people trying to recreate and then try out Roman military equipment.

Justin: And if you're a middle school geometry teacher, it just shows up at your house. It's crazy. [chuckles] It just shows up in your mailbox like, "We just assume you want this."

Sydnee: We move on to the—to the '50s, and we start to not just understand blisters a little better, but you start to see researchers actually trying to replicate blisters first. First you have to make—

Justin: Sure.

Sydnee: Blisters.

Justin: Before you can understand the blister, you must put yourself in the mind of the blister!

Sydnee: Yes. And so, the British army tried this first, and again, this is where we—I mean, you really see like the military is who's interested in preventing blisters. So the British army decided with Dr. Paul Naylor, "We're going to make blisters on our subjects." So you had to volunteer for this study and then get blisters put on you.

Justin: Hm.

Sydnee: It really sounds like it would suck.

Justin: Does it pay? Do you get money? Or is it just volunteer—for purely volunteer?

Sydnee: You know, I don't know. I'm assuming that they were making like military recruits do it, right?

Justin: Yeah.

Sydnee: Probably? I don't know. I don't know. I mean, I don't mean that in like a nefarious way—

Justin: They might have given them like movie gift certificates. We don't know.

Sydnee: Part of the research was to see like how long it takes to make a blister, so that we can understand how blisters form. So it was just like we're going to rub you with something.

Justin: Some sort of substance like the blister beetle stuff? Some sort of—

Sydnee: No.

Justin: Caustic agent?

Sydnee: Mm-mm. Just friction.

Justin: Oh, just like friction? Ah! That would be very annoying!

Sydnee: I'm gonna rub you for it like—yeah, I'm gonna rub you for a long time and try to make a blister on you, and see like does it take different amounts of time for different people. Like are some of us a little more prone to—

Justin: I think for me it'd be a very short time before I said, "I'm quitting the study, I'd like to go home. Stop rubbing me. Now. [chuckles] I'm leaving."

Sydnee: [chuckles] They—

Justin: "This sucks!"

Sydnee: But they found a lot of uh factors were involved, like it was the amount of frictional force, the number of... of rubs.

Justin: [laughs]

Sydnee: The moisture. You could put other substances on there to try to like decrease the friction, to see if that would—you know, that's when we're starting to like, we're getting into blister prevention technology—

Justin: Where a young Dr. Scholl was like, "This is something."

Sydnee: I mean, this is where a lot of this stuff starts coming into play, is like these studies in the military and then you've got somebody who's watching and is like, "Yeah, I might—I could probably—I could probably fix that. I can make something to fix that." In one study I liked in 1968, they found specifically—because now they're trying to make blisters, they're trying to figure out why blisters form. The next step is, do we pop them? Which I feel like—

Justin: Oh, yeah.

Sydnee: This is like the key question, when we get into modern blister management.

Justin: I have—from what I understand talking to you, a common person like myself shouldn't pop them, unless I'm under the watchful gaze of a physician. Is that accurate?

Sydnee: I mean, I don't want you to pop your blisters, because I'm right here... and I enjoy popping—

Justin: Oh, so wait a minute, it's just for you? You're just—

Sydnee: No.

Justin: That's not—no?

Sydnee: So, in this study, and this really—and we'll get into it, it mainly holds true today. They took 83 volunteers who had blisters, and they were looking to see if either, one, you should drain the blister, like stick a needle in, suck the fluid out. Or two, should you just what we would think of as like unroofing the blister, like take the whole top off.

Justin: Just the... oh, that stinks. [laughs] Yeah, ma—so like just—yeah, I get—I get what you're saying. I was actually going to describe it more, but I don't actually think I need to. I'm good.

Sydnee: It hurts to think about , doesn't it?

Justin: I don't like it.

Sydnee: It hurts, it hurt—

Justin: I don't like it.

Sydnee: I know. So they were—they were trying to figure out like what was better. And what they found is, we know we should not unroof them. Tearing that skin off the top is bad.

Justin: Stinks. Unroof sucks!

Sydnee: The ones—

Justin: I don't want to say that anymore. [chuckles]

Sydnee: The ones that they left alone and the ones that they like poked a little hole in and just sucked the fluid out didn't necessarily have that much of a difference really—

Justin: Because I just feel like—

Sydnee: Like they both healed up.

Justin: Where is that skin going?

Sydnee: But we know that tearing that skin off is bad.

Justin: Yeah.

Sydnee: That's what they know.

Justin: So we like it as like a little protective layer there.

Sydnee: Yeah.

Justin: Okay, that makes sense.

Sydnee: Yeah, and that holds true because... that's a sneak peek. Your big worry with blisters is going to be infection, because you've got the blister itself—and if we're talking about your standard like 'my shoes were too tight it formed a blister' kind of blister. I'm not talking about—again, this is not about like autoimmune diseases or noxious substances or burns. I'm talking about your standard 'ow on my foot, I have a blister.' If you tear that skin off, what's underneath is going to be much more prone to infection at this point.

Justin: Because it's baby skin.

Sydnee: Mm-hm. Baby skin. That epidermal layer on the top is protecting that. So, whether or not there's fluid in between, that epidermis is important to protecting the skin as it regrows—

Justin: Oh, right.

Sydnee: From infection. So your big worry is you don't want to make a hole in the foot, right?

Justin: Yeah.

Sydnee: Our next big—so like we have this British military work being done. And so now across, you know, across the Atlantic in the US, in the '70s, we have researchers who are like, "We've got to get—we gotta catch up with the Brits. [chuckles] The Brits are understanding feet way faster than we are."

Justin: "The Brits are looking at so many more feet than us!"

Sydnee: And then Marion Sulzberger, who's a dermatologist—father of dermatology, Marion Sulzberger, is like, "I am going to be the one to beat the—beat the great foot race." No. Hm...

Justin: Oh, yeah, that's good.

Sydnee: Yeah, I mean, foot race.

Justin: Yeah, it's good, the foot race.

Sydnee: Yeah, "I'm gonna win the foot race." Yeah.

Justin: Foot race, that's good, yeah.

Sydnee: And so he's gonna take us to the next step. Oh, there's so many puns here. But first, let's go to the Billing Department. [chuckles]

Justin: Let's go. [chuckles]

[theme music plays]

[ad reads]

Jackie: Hey, Max Fun listeners! It's me, Jackie Kashian. I have a podcast with Laurie Kilmartin. Say hi, Laurie.

Laurie: Hi, Jacqueline! Hi, Max Fun listeners!

Jackie: [chuckles] Very formal! We have a podcast and it's about stand-up comedy and how much we love it, and how much we dislike some of it.

Laurie: [laughs]

Jackie: So listen to that podcast. It's called The Jackie and Laurie Show.

Laurie: We drop new episodes every Wednesday that gives us plenty of time to decompress from our comedy weekends, and discuss things with sane, level heads. Ha, no, it doesn't.

Jackie: [laughs]

Laurie: But if you are a woman our age or a man our age... or you know what, any person of any age, I think you'll enjoy our podcast.

Jackie: [laughs]

Laurie: Jackie and Lori Show, on maximumfun.org. Bye!

[break]

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[break]

Justin: All right, so let's get this off on the right foot. No more puns.

Sydnee: Uh-huh. Mm-hm. Now, here is what is fascinating. I started reading about Marion Sulzberger. In 1972, he was talking a lot about like, we know it's not just the friction, we know it's the shearing forces. We're starting to understand this point with blister formation. And he's working a lot with like, how can we help our military... like do better prevent blisters. And he's got a lot of stats about like during the Second World War. I mean, the biggest problem that people were up against was typically not some sort of like battlefield injury.

Justin: Mm-hm.

Sydnee: It was sickness or injury—

Justin: The after.

Sydnee: Yeah, just the circumstances.

Justin: Complicating factors. [chuckles]

Sydnee: Right. And so, he was a—he was like, "I am going to work on blisters, this is going to be what I want to do." And so he also made his own version of a—[chuckles] a rubbing machine. [chuckles] To—[chuckles] to form blisters—

Justin: Dwayne 'The Rock' Johnson is the rubbing machine.

[both chuckle]

Sydnee: He also found that like it is not a burn. He did some research to look at like the temperature that was forming like, is this a burn? It's not a burn. And then looking at like things you could do to prep the skin ahead of time, to decrease the likelihood of blisters. And like really cemented kind of our common understanding of blister formation and blister prevention at this point in history. I do think he's—the most interesting thing about him... I mean, he's the fa—he was quoted as being the father of dermatology, so clearly not the most interesting, but in my mind, is that the reason he pursued this so vigorously, it was a part of a, his push towards what he, and I believe he coined this term, I think Idiophylaxis. Have you heard the term idiophylaxis?

Justin: Idiophylaxis, I have not. I was trying to figure out why, what that would... Idio is like into your—into one's—unto oneself? Like self-perpetuating.

Sydnee: Mm-hm.

Justin: Right? And then phylax... Phylaxis... like a phylactery? Like a vile? I don't know.

Sydnee: No, I mean, I think more like prophylaxis—

Justin: Oh!

Sydnee: Like prevention—

Justin: Anaphylaxis, prophylaxis—

Sydnee: Ways to—like inner armor.

Justin: Oh, okay.

Sydnee: Biological inner armor.

Justin: Okay. Oh, so this is like your armor that your body already makes.

Sydnee: Mm-hm.

Justin: So if you like—

Sydnee: Or could we enhance.

Justin: Could we secrete some sort of lube that would limit blisters. Is this what you're saying, some sort of skin gland—

Sydnee: No, well—

Justin: That could secrete a ankle-saving lube?

Sydnee: Blisters are where he started, but it was part of a wider idea. This is 1962. He went to the army science conference that the United States military held, and he stood up and gave a lecture. I have a copy of the lecture I've been reading through. And this may be worth a whole other episode to get into idiophylaxis, I'm not sure yet. But basically what he was saying is, over time, the military is continuing to enhance the various aspects of like—okay, he broke it down into three pieces. What do we need on the battlefield? We need the man, the human.

Justin: Mm-hm.

Sydnee: The carrier or vehicle. And the weapon.

Justin: Gun. Yeah.

Sydnee: Yeah. Okay, so over time, technology has continued to enhance the carrier, has continued to enhance the weapon.

Justin: Mm-hm.

Sydnee: Isn't it time technology enhanced the man?

Justin: Hm...

Sydnee: Honey, this is like super soldier stuff, is what we're getting into.

Justin: Now I'm excited.

Sydnee: Idiophylaxis is, I have to imagine, I mean, we're in 1962 as this conversation is happening, how much comic book stuff came from this idea?

Justin: I mean, it is well-known the history of comic books and science progress are very interwoven. The creator of Wonder Woman was also the creator of the lie detector machine. So I guess it's possible. I mean, also Star Trek does that, right? Star Trek has inspired cell phone design and what have you for many years. So I guess it is possible that this guy is like—what year?

Sydnee: '62.

Justin: '62. I think that would be, yeah, some influence there.

Sydnee: And no—

Justin: Check the years.

Sydnee: He was not the first one.

Justin: No, sure.

Sydnee: But he was part of this sort of idea that we have all this, like, we are—our technology is moving at such an advanced pace right now. But what's not moving at the same pace is like how do we provide not just medical care for—uniquely for people in the military, but how do we give them the best advantage we can in any battlefield situation across the globe.

Justin: So, by my account, '40 is when Captain America actually went into publication. So he would have been like, if he had been born when Captain Amer—like this guy was like seven, right? When Captain America came out. I can't—I can't—when w—I'd have to check the year of birth.

Sydnee: Mm-hm.

Justin: But I think he's exactly the right age to be absolutely influenced by Captain America. [chuckles]

Sydnee: They're definitely—well, I mean, I think that was the big question, you know, after World War II, was this sort of—I mean, we're getting into the Cold War and the arms race and all that kind of stuff.

Justin: Right.

Sydnee: And so then at the same time, you're going to have a conversation on the military medical end, how can we—and part of this is very practical. How can we better support our troops, especially as we were moving into an era where we did not know all the places on the globe where people might go and be stationed or engage in battle.

Justin: Right.

Sydnee: And so, you have like an interest in vaccines. I mean, that's where—I mean like a very pragmatic thing here is, this is why there are—

Justin: Even if it doesn't immediately affect us, there's some other world we may be catapulted into where we—

Sydnee: Yes. This is where you get like mandatory vaccination—

Justin: So we need all of our biological armor.

Sydnee: Yeah. It's interesting because all of this stuff, it sounds like science, science fiction, it kind of all, you know, colliding in one place. And it also sounds like super soldier stuff feels like where we might be right now.

Like you would think the US military, like the people in charge would be like, "Ah, yeah." Like, "Yeah!" Like that, like becoming like, "Yeah! Super soldiers!"

Justin: "Let's do RoboCop."

Sydnee: Right. But I do think it's interesting that vaccines are a big part of this theory.

Justin: And they're not—

Sydnee: And—

Justin: For that, because that would be the first place you start, right?

Sydnee: Yeah.

Justin: Because you could super soldier yourself to not getting polio!

Sydnee: I mean, it's a great way to be a super soldier, is to get your vaccines, and then you won't get those illnesses, but—

Justin: You have to get—you have to be a pretty super soldier to not get polio, you know?

Sydnee: Mm-hm.

Justin: I think that's pretty—

Sydnee: But rolling back vaccine mandates in the military has led to flu outbreaks.

Justin: That's too bad.

Sydnee: So...

Justin: Yeah.

Sydnee: Yeah. So we actually moved in the other direction, if you were worried about this, if you're worried about super soldiers. So—

Justin: I'm not worried about super soldiers.

Sydnee: [chuckles] We have a—up until the '80s, most people were just putting band-aids on their blisters, which is fine. Like, they're fine. I like band-aids. This is no shade on band-aids. I use band-aids all the time. Band-aids are fine. But they don't necessarily, I mean, you're really just covering it at that point, right? You're just putting something over it because it hurts—

Justin: It's really just—

Sydnee: When it rubs on something.

Justin: It's really just a band-aid.

[both chuckle]

Sydnee: And you've got—

Justin: I mean, that is the whole thing, right? That's they have—they got the metaphorical wrap for that exact—

Sydnee: Mm-hm. Mm-hm.

Justin: They're not doing much.

Sydnee: So, he—so okay, so in 1983, we've got a guy, Lars Backsell, who is, he works for a medical device company, Coloplast. And he is also a runner. Like I said, military and runners. And he used band-aids on his blisters, because that's all anybody had, and they use band-aids on their blisters. But this medical device company was using this new hydrocolloid product, and it was mainly for like wound care dressing after a surgery or something.

Justin: Mm-hm.

Sydnee: And it absorbed liquid, and was also like sticky, and it worked really well. It's called Comfeel. And he had kind of messed around with it for himself to like put on his heels and stuff while he was running, to see if like this might be helpful.

Justin: Mm-hm.

Sydnee: And he had had some success. So he ends up on a train, he is going from Stockholm to Gothenburg. And he is sitting next to a nurse who worked for the Swedish Army, and they start talking about blisters and he's like, "Hey, you're a nurse, you work with soldiers. Take this stuff and see if it helps. See if it's better than band-aids."

And basically this was kind of the, if you look at a lot of the products that are out there now for blisters, there are these hydrocolloid products. This was the beginning of using this Comfeel stuff, and then all of the products—and if you and if you google this, you'll find there's tons of, hydrocolloid is like the mainstay of blister care, blister prevention, this is where it came from.

Justin: This started from a conversation on a train.

Sydnee: Mm-hm.

Justin: That's wild.

Sydnee: He actually, he recollected the little hydrocolloid bandages after the—after she did her trial, the nurse did the trial. And he took like the stinky box to his boss to be like, "Here's this stinky shoe box of band-aids."

Justin: He wanted 'em back, because it's like nothing comes for free.

Sydnee: No. [chuckles]

Justin: Listen, if you guys wanted the—only the first taste is free.
[chuckles]

Sydnee: But that is where we get the hydrocolloid. And even today like, and I dove deep into this as I was reading all these like runner blogs about like what they do. And I mean, there's a ton of technology that has now gone into obviously shoes and socks.

Justin: Sure.

Sydnee: There are various linings that you can get, like multiple, like wear two socks so that the shearing force is between the socks, and not between your skin. Obviously, there's these hydrocolloid things that you can put in your shoe. Not just like on your foot, but you can actually put in the shoe at certain spaces to reduce the most likely to blister. So there's tons of technology in the running world. All of this is also being applied in the military world, because again, people who are on their feet a lot and it is necessary from a military perspective for the fighting force—

Justin: Right.

Sydnee: To not lose what they call man days, people days. You know, it's not just about they're gone, they're not out of the fighting force, but they're—

Justin: Losing human time.

Sydnee: Yes.

Justin: Person hours.

Sydnee: Person hours!

Justin: Person hours!

Sydnee: Yeah. But here is what's interesting in terms of your regular civilian blister care recommendations. The best grade of evidence I found is 2C. And we grade, like if we give you a medical recommendation, I can tell, I mean, and it makes sense, I can tell you if this is like a grade A recommendation. Like this is the best evidence we have, we did the randomized control trials, there were double blind studies. We know this works.

Justin: Hm.

Sydnee: And there's stuff that we talk about on the show that I know works. I know vaccines work. I don't know if a lot of this blister advice is great. [chuckles] Because 2C means it's a pretty weak recommendation. It means, "Eh... Probably."

Justin: Who makes these recommendations? Who—

Sydnee: They're consensus guidelines based on best evidence. So, consensus guidelines based on best evidence says, if you have a small blister—and again, these are friction blisters, so these are not from burns or other things. We're talking about blisters on your hands and feet typically, palms and soles most of the time, fingers and toes, from friction. If it's small, it's minimal, it's bearable... leave it alone. [chuckles]

Justin: Okay.

Sydnee: Don't you—if you want to put something over it like a hydrocolloid dressing or a band-aid, you certainly can, but leave it be.

Justin: Okay.

Sydnee: If it's large and painful—

Justin: De-roof it.

Sydnee: And tense—

Justin: De-roof it!

Sydnee: Do not de-roof it! Do not de-roof it.

Justin: Put that de-roofer down.

Sydnee: Don't de-roof it.

Justin: Put that de-roofer down—

Sydnee: You can opt to puncture it. Now, I recommend to my patients, because I will tell you in my practice—

Justin: You recommend to your patients to let you do it—

Sydnee: Let me do it.

Justin: Because you're nasty!

Sydnee: [chuckles] I recommend to my patients let me do it, because I take care of largely a population of people experiencing homelessness, and they don't necessarily have a sterile environment in which to pop their blister.

Justin: Is that what you're telling them—

Sydnee: Yes, no, so I want them to come into me and let me use sterile instruments, and do it in a sterile fashion.

Justin: Where you can enjoy the nastiness for yourself.

Sydnee: Because they're on their feet. And that's the—this is the key! If you are going to continue to be on your feet a ton, if like you can't just like prop your foot up and rest for a couple days, you probably—and it's a big blister, you probably do need to pop it, right? Because it hurts!

Justin: Yeah.

Sydnee: So—

Justin: Come to Sydnee.

Sydnee: You want to use a sterile instrument to make the tiniest hole possible, gently express the liquid within, and then dress it, so that you prevent infection.

Justin: You hear the way she talks about it, right? With passion. It's in her voice.

Sydnee: And you can use a hydrocolloid dressing. There's tons, there's generic ones, there's so many different options. I actually, after doing all this research, bought myself a roll of like hydrocolloid like tape, so that I can just cut off pieces in the size and shape that I need. Because they sell the bandages in like all different sizes and dressings and all that stuff, but I can just get a big ol' roll of tape.

Justin: You sound like a serial killer.

Sydnee: It's just to dress blisters? I take care of so many blisters. And if you have to walk on it, you probably want something like that over it. The main thing is you want to keep you—that epidermis layer is gonna keep it protected from infection, and that is good. So you don't want to peel that skin off. If you must, pop it. It needs to be sterile. I will say, heating up the safety pin, which is what everybody wants to do, right? Take a lighter—

Justin: Yeah.

Sydnee: Get a pin hot, and then poke it in there. You are gonna deposit some carbon in there, which is going to inhibit healing.

Justin: [sighs] Hah... it's tough.

Sydnee: So, it's better not to do it that way. It's better to have an actual sterile instrument. So like I have needles that are sterile in my clinic. Please come to me. Not necessarily me—

Justin: Just another reason why you should let dirty dog Sydnee Smirl McElroy pop all your funky blisters. [chuckles]

Sydnee: The way that you can prevent them is with, I mean, the things that we know. Like if you have an inducing action that is causing blisters, don't do it. Now if you must do it, like shoes and socks that are appropriately supportive, make sure that they're the right size. There are all kinds of like

powders that you can use to help prevent blisters, to reduce friction in the pads. If they get infected, please do seek medical attention.

You can get some pretty severe infections that spread very quickly. So if you've got an infected blister, please go see somebody immediately. Obviously not every blister necessarily needs professional medical care, but if you think it's infected, go get it checked out. And there are a handful of reasons why we still induce blisters. Sometimes we do it to help separate a section of skin that we might need to graft.

So if we're going to harvest a tiny bit of your skin to put somewhere else on your body, we might use a blistering technique to separate the epidermis from the underlying layers, so that we can then get that piece of skin off. You can do that sometimes when you're administering like an anesthetic, you can form a little blister, a vesicle.

They've done that for research purposes, if they're trying to see if you're responding well to something, they'll induce a little blister and then suck the fluid out of it and test it, looking for various substances, to look for immune responses and things like that. So, there are still reasons. We don't use cantharidin. [chuckles] We don't use a blister beetle. And it's not to remove a humor.

Justin: Mm-hm. But?

Sydnee: But we still might induce blisters, so...

Justin: Thank you so much for listening to our podcast. We hope you enjoyed yourself. Thanks to The Taxpayers for use of their song "Medicines" as the introduction and outro of our program. You got one more weekend to come see Matilda.

Sydnee: Hey, yeah!

Justin: Right? You can head on over the Ritter Park Amphitheater this Friday, Saturday, Sunday. Show starts at 8:30, gates open at 7:00.

Sydnee: It's an outdoor amphitheater, so bring chairs, blankets—

Justin: Yeah, and an umbrella.

Sydnee: Umbrella, just in case, just in case. And feel free to bring food and beverage. There is some stuff for sale there, but you can bring your whole picnic basket.

Justin: Yeah.

Sydnee: Pick and Nick basket. [chuckles]

Justin: Thank you so much for listening to our podcast. 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.

["Medicines" by The Taxpayers plays]

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