

Sawbones Episode 93: Burns

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Intro (Clint McElroy):

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 song Medicines by The Taxpayers plays]

Justin:

Hey everybody, welcome to *Sawbones*, a marital tour of misguided medicine. I'm your co-host Justin McElroy.

Sydnee:

And I'm Sydnee McElroy.

Justin:

Happy belated anniversary Syd.

Sydnee:

Thank you honey.

Justin:

I told you yesterday happy anniversary, but I'm telling you again because this is, the podcast didn't hear it. So now I want it in proof, in podcast proof, happy nine year anniversary dear.

Sydnee:

Well, thank you. I mean, you, you put it on Facebook which is like, it's real once it's on Facebook. Right?

Justin:

Yeah, but I don't have any randos on Facebook.

Sydnee:

Oh.

Justin:

It's just close, my 500 closest friends and family.

Sydnee:

Okay. Well, that's never how I would refer to our, our dear listeners.

Justin:

Our dear randos.

Sydnee:

Our dear, [laugh].

Justin:

Our dearest randos.

Sydnee:

Well, thank you. That's very true of you to, in this public forum of a podcast, wish me happy anniversary, and I would like to extend that same happiness to you as well.

Justin:

How cordial. Thank you.

Sydnee:

[laugh]. I love you.

Justin:

I love you.

Sydnee:

But I have a question for you.

Justin:

Tell me the question, Syd.

Sydnee:

Would you say that after nine years, uh, that you still have like a, like a burning passion for me?

Justin:

Yeah. I, yeah, absolutely. I, I love you just as much as I did the day I met you.

Sydnee:

I mean that the, that the, that the flames of our love still burn as brightly as they did nine years ago.

Justin:

Yeah. I mean, yeah, for sure.

Sydnee:

But do you think you still have a burning-

Justin:

Okay. What are you doing?

Sydnee:

... desire?

Justin:

What are you doing? What are you doing?

Sydnee:

It's a, it's a burn thing. 'Cause you know, our show is about burns. It's gonna, I don't know. We already did sunburn last week and now it's just burns. I got nothing.

Justin:

Okay. Well, do you have information about burns?

Sydnee:

Yeah. I mean, I got lots of information about burns. I just don't have any clever intro about burns.

Justin:

That seems better. Let's just do that then.

Sydnee:

Well, okay. We're gonna talk about burns. I wanna thank a couple people who subj- who suggested this topic. Trisha, Jimmy, Carson, Laura. Thank

you all very much. We already talked about sunburns but why don't we talk about all burns.

Justin:

Yes, yes. Let's include our- let's, uh, increase our scope.

Sydnee:

Yes. Uh, so first of all, before we get into the history of burn treatment, cause there's some pretty interesting and crazy and stupid stuff we've done with burns through the years, uh, I wanna tell you a little bit about skin.

Justin:

Okay.

Sydnee:

And burnt skin.

Justin:

Tell me about burnt skin.

Sydnee:

So first of all-

Justin:

Who's hungry?

Sydnee:

... I think, [laugh]. Yeah. I think everybody knows this, that, it's the, that our skin is our largest organ.

Justin:

Right.

Sydnee:

I think, uh, that's like everybody's favorite piece of trivia.

Justin:

Mm-hmm [affirmative].

Sydnee:

Cause it sounds like it's not, but it is.

Justin:

Yeah.

Sydnee:

Um, and it's primary, uh, function is to protect us.

Justin:

Our strongest muscle is the tongue. Is that true too? Heard about that.

Sydnee:

I don't believe that that's true.

Justin:

Okay. I'll, I'll, I'll do some research later.

Sydnee:

Although I don't remember a time in medical school where they like ranked all of our, [laugh], muscles-

Justin:

Muscles by strongest.

Sydnee:

... in the order of strongest to weakest.

Justin:

You would think that would be a class-

Sydnee:

And, no.

Justin:

... to get the full scope of understanding of the human body.

Sydnee:

I do remember, I do remember, [laugh].

Justin:

To get the power rankings for individual muscles. [laugh].

Sydnee:

I do remember them saying that the psoas muscle in our body is sort of like the, um, the filet mignon, like the most, like it's the most tender muscle in our body.

Justin:

The most delicious cut.

Sydnee:

Yeah. I remember them telling us that in anatomy class and I'm going like, "Oh,"

Justin:

Why?

Sydnee:

Oh, why do I know, Why, I [crosstalk 00:04:24].

Justin:

Did you look around the class at that moment and just look for the one guy who's like, "Hmm, go on."

Sydnee:

[laugh]. That's, that's why they tell you that is for the one guy who has that look on his face.

Justin:

But they're like security. [laugh], we got him.

Sydnee:

[crosstalk 00:04:36], they were moving from medical. There's always one. They're, [laugh], And you didn't know that. In every medical school class, there's one cannibal-

Justin:

Why don't we,

Sydnee:

... that we have to find.

Justin:

Why don't we hear more about cannibal doctors? There's your answer.

Sydnee:

Yeah.

Justin:

Our medical system is working to weed them out.

Sydnee:

Instead of Waldo, find the cannibal.

Justin:

Find the cannibal.

Sydnee:

Get him out of medical school.

Justin:

[laugh].

Sydnee:

So, [laugh], skin, uh, mainly protects us from the elements from, you know, bugs and dirt and water and all that. It also does some other stuff. It regulates our temperature, makes vitamin D. Um, and there are three layers to your skin. You may know this.

Justin:

Yep.

Sydnee:

There's the epidermis, the dermis and then there's like the hypodermis, all the stuff underneath.

Justin:

Yep.

Sydnee:

You're getting deeper. And when we talk about burns, what we're really talking about is the, the depth of the burn. Like the extent, the extent burn is rated by the depth, and then there's other classifications based on like what caused it and how much of your body is covered by the burn.

Justin:

Okay.

Sydnee:

Um, but when you think about first degree, second degree, third degree, we're really talking about how deep. So a first degree burn is like a sunburn. It's the epidermis.

Justin:

Got it.

Sydnee:

The top layer of skin. A second degree burn involves some of the dermis or all of the dermis.

Justin:

Okay.

Sydnee:

The next, the next deepest layer. And a third degree burn is one that extends below the dermis into the connective tissue or the muscle or the bone or whatever. And obviously, they get worse as you go.

Justin:

Right.

Sydnee:

Um, we also, I think this is an interesting little, little thing for everybody to know. When we're talking about how much of a person is burned, um, cause the total body surface area of a burn helps us determine like how sick they're gonna get and, and also helps to calculate their, their chances of surviving a burn. We use something called the rule of nines, and it's basically like dividing your body into 9% of, like each, each section is like 9% of your total body, body surface area. So like the front of your right leg is 9%. And the back of your right leg is 9%. And the front of your torso is divided into two, 9% sections and the back is two, 9% anyway.

Um, so it's all divided into these 9%'s, and then you can just look at what's burned, and then multiply your nines by that and figure it out. And then there's also the palms and the perineum, which is another 1%.

Justin:

Which perineum?

Sydnee:

The area between your front butt and your back butt.

Justin:

Oh. You mean the taint.

Sydnee:

[laugh]. You can't say that.

Justin:

It's not a curse word. It's medical name.

Sydnee:

It's the area between whatever's up front and whatever's in the back.

Justin:

Got it.

Sydnee:

That area.

Justin:

Got it.

Sydnee:

So,

Justin:

The perineum.

Sydnee:

So that part,

Justin:

A rebranding. A convenient rebranding from Sydnee McElroy who refuses to use the clinical medical term, taint.

Sydnee:

No, it's perineum.

Justin:

Well, agreed to disagree, doc.

Sydnee:

I'm impressed because I thought when I brought up the fact that when we talk about like the perineum and the genitalia in general, that that's only 1%, I thought you would be forced to make a joke here.

Justin:

No, no. That's,

Sydnee:

But you're leaving it alone.

Justin:

That's a low hanging fruit. I'll leave that for those common medical history podcast.

Sydnee:

[laugh].

Justin:

This is an erudite medical history podcast for a discerning listener who isn't afraid to hear the word taint three times in a minute.

Sydnee:

Moving on. Uh, burns obviously are a problem because, you know, burnt tissue is destroyed. Whether it's tissue nerves, capillary beds, you know, teeny little blood vessels, that's all part of the problem. But there's a lot else that goes into burns that we learned over time. Um, you lose a lot of fluid, uh, mainly because you're losing, you're losing, you know, skin layers.

Justin:

Mm-hmm [affirmative].

Sydnee:

Um, dehydration is a big problem. Infection obviously, because you've lost what protects you against infection. Inflammation and organ damage. Um, the biggest problem historically has been infection. And actually there's a long time in human history where if you had a burn, the last thing you would do is go to the hospital.

Justin:

Because of the, why?

Sydnee:

Because hospitals were known to be places where people got infections.

Justin:

Like before we knew how germ theory worked or after that?

Sydnee:

Yeah. Well, that's pretty incredible. We didn't know how germ theory worked. We didn't really know what infection was. We just knew that a hospital was a place you got sicker and probably died. So stay away.

Justin:

Well, you know what it's funny, even though, even though, like even if we didn't understand germ theory, I would think that like you would be able to put together like, the hospital that's where a bunch of sick people are.

Sydnee:

Right. Well, they knew that. Um, but they didn't, I mean, but you really wouldn't have understood that cause they didn't know that like-

Justin:

Contagious.

Sydnee:

... dirty hands-

Justin:

Yeah, right.

Sydnee:

... was, was largely the problem.

Justin:

Yeah.

Sydnee:

So they just knew that, you know, our cousin got burnt and went to the hospital and they died. So when I get, you know-

Justin:

Not doin' that.

Sydnee:

... when my brother get burn, he's not gone. That kind of thing. Um, historically and now, burns are really managed by surgeons. I don't think most people know that.

Justin:

Just cause there's not a lot else you can do for them. Like there's not a pill you can take.

Sydnee:

Well, there's not a pill you can take I mean, other than like pain control.

Justin:

Sure.

Sydnee:

But, um, there are some other things you can do other than surgery, but yeah. Uh, one of the most important initial, and we'll kind of talk about this treatments for burns often is surgery, depending on the depth and the extent of the burn. Um, but most of the time is surgery. And so, uh, a lot of the time, and certainly now if you go to a, if you go to the hospital with a burn or you go to a burn unit, it's all managed by surgeons. I don't think most people knew that.

But as far back as the Ebers Papyrus, we have been talking about burns and what we need to do about them. Um, in, in that document in particular, what they recommend is a five... So let's say you gotta burn.

Justin:

Okay.

Sydnee:

You're in ancient Egypt.

Justin:

Okay.

Sydnee:

They're gonna prescribe you a five day treatment of a couple different things. Some black mud to coat all over you. Some incantations.

Justin:

Sure.

Sydnee:

And then a mixture of some cow dung, bees wax, barley porridge, and ram's horn covered with a dressing made out of the Acacia tree with some red ocre and copper.

Justin:

Oh, well that seems very, very bad and dangerous and harmful.

Sydnee:

It's interesting cause I don't know... Yeah. That, that's really bad.

Justin:

That's the worst.

Sydnee:

The bees wax probably wasn't a terrible idea to try to like seal off.

Justin:

Yeah. But like...

Sydnee:

But the, the cow dung, I think,

Justin:

It only takes one fly to spoil the soup. Like it only takes like a teaspoon of cow dung to ruin your bees wax. I think when we're talking about infection.

Sydnee:

Yeah.

Justin:

Yeah.

Sydnee:

So that probably, I don't know what the success rate from this treatment was, but I'm gonna guess it was not-

Justin:

Right.

Sydnee:

... successful.

Justin:

No, I would think not.

Sydnee:

Uh, they also mentioned you could try, um, uh, breast milk.

Justin:

Okay.

Sydnee:

So you're in luck-

Justin:

Sure.

Sydnee:

... if you have a burn except no, no, you're not.

Justin:

Why not?

Sydnee:

Because only from moms of male babies.

Justin:

Oh, well that makes sense. Of course, I mean naturally,

Sydnee:

So my breast milk is useless.

Justin:

Useless to me.

Sydnee:

So don't, don't even try to squirt my breast milk on your wound, on your burn.

Justin:

I was, uh, about to. So I'm glad you stopped me.

Sydnee:

Uh, Hippocrates weighted on burns later. His advice was to get some melted pig skin.

Justin:

Uh, you mean pork rinds?

Sydnee:

[laugh]. I don't think they're melted. If you're, if your, pork rinds are melted, you're doing them wrong.

Justin:

Yeah. They've gotten the stale.

Sydnee:

Um, and mix it with asphalt, and you've got yourself a burn treatment.

Justin:

Do you?

Sydnee:

No.

Justin:

No.

Sydnee:

Uh, remember Paris Alsos. We talked about him.

Justin:

Oh sure. Oh, sure.

Sydnee:

Yeah. He waited on this as well. He had a, a whole salve that he created, which I think sounds like, like, as I wrote, as I was writing this down, like Paris Alsos recipe for burns, this sounds like something you would order at like, I don't know, like some kind of like hipstery restaurant. [laugh].

Justin:

And what is, what are the ingredients?

Sydnee:

Um, I'll have the salve made of hog and bear fat, soaked in red wine with the side of the roasted earth worms and some moss from the skull of a dead man.

Justin:

Okay. See, I think the last thing there,

Sydnee:

[laugh].

Justin:

I think the last thing, you know, the analogy sort of falls apart. I've ne- like,

Sydnee:

Are those, are those free range earthworms?

Justin:

That's a crazy, that's a crazy thing to put in your ingredient list of like, here's what would help? Like I've never seen that in my life.

Sydnee:

Was this a locally sourced dead man?

Justin:

[laugh]. Okay. All right.

Sydnee:

No, I've never either. I don't know, I don't even know how you come up with that.

Justin:

That's like a great thing if you're trying to like fake people out, like, "Well, you know what would work? This and this and this, and then a bunch of grounded up Fabergé eggs."

Sydnee:

[laugh].

Justin:

It's like, "Well, I can't get those." Well. Yeah. But like if you could, woof, that would be really helpful to you.

Sydnee:

I don't know if this is like, sometimes you read things like this and you think it's just the greatest joke somebody ever made.

Justin:

Sure. Yeah.

Sydnee:

Because it's gonna echo throughout history and it's nonsense.

Justin:

From, for two millennia, medicine has basically been an extended hazing.

Sydnee:

[laugh].

Justin:

It's human- it's humanities hazing.

Sydnee:

It did- I try not to now.

Justin:

Yeah. I appreciate that.

Sydnee:

It's the best I got.

Justin:

Yeah.

Sydnee:

Um, after we made gun powder, burn and of course wounds in general became much more complicated. Um, in the 15th century, that's when we see the, like that's when we first start classifying burns, the first or third degree is, is made by, uh, Willhelm Fabry, who was also known as Fabricius Hildanus, which if that's your name, why are you going by Willhelm Fabry?

Justin:

I don't know. I, I, you would refer to me only as Fabricius Hildanus.

Sydnee:

[laugh]. I mean, if that was me,

Justin:

Is it because anus is in the second name. Is that, you think he got tired of the schoolyard ribbing?

Sydnee:

Well, I don't know. Cause it could be Hildanus or Holdanus, and I'm pretty,

Justin:

Hey, Holdanus.

Sydnee:

[laugh].

Justin:

Hey, Hold-anus, right?

Sydnee:

I don't know. He was German. I think they were too sophisticated to make those kinds of jokes.

Justin:

Let's hope.

Sydnee:

And also that would be English. So, [laugh].

Justin:

Yeah. Fair enough. Yeah. Well, I mean you, but you heard the accent. I could tell you,

Sydnee:

So that was, that, was that a German accent?

Justin:

Moving on.

Sydnee:

Um, in the medieval period, we actually had some advances made with, uh, if you can believe it, with burn treatment from a French barber surgeon, um, who we've kind of talked about a little bit before, Ambroise Pare, who was, he's one, considered one of the fathers of modern surgery in general and he cared for a lot of, uh, war related wounds and burns and that kind of thing. And at the time, the predominant treatment for a burn was to cover it in boiling hot oil.

Justin:

Um...

Sydnee:

Let me, let me say that again.

Justin:

Just one more time,

Sydnee:

If you came in with a burn-

Justin:

Mm-hmm [affirmative].

Sydnee:

... your doctor in medieval period would cover it in burning hot oil.

Justin:

Oh, that makes perfect sense though. That's, it's like attracts like, law of attraction. It's the secret.

Sydnee:

I actually, I actually think it was like the, remember we've talked about this, like the-

Justin:

Same cures.

Sydnee:

... law of similars-

Justin:

Yeah. Law of similars and same cures, yeah.

Sydnee:

... the law of similars and, yeah. That kind of thing. I, I think it was based on that and also the idea that you could purify the wound somehow that way, which, I mean, you, I mean you'll kill bacteria.

Justin:

Sure. Right. I mean yes. But-

Sydnee:

And everything else.

Justin:

... you're basically just starting it over at, at square one. It's basically like re-breaking the arm because it didn't set right.

Sydnee:

Exactly. Exactly. And he, he saw, Pare saw that people did not do well with this treatment.

Justin:

Mm-hmm [affirmative].

Sydnee:

And so he kind of thought it was a bad idea. So he was revolutionary in that when you came in with a burn, he did not burn you further. Instead, he tried like emollients which are like moisturizing, soothing kind of salves and, and lotions and bandages, which does not sound groundbreaking but was at the time-

Justin:

Yeah.

Sydnee:

... and people did better. Um, as, and people, we continued to get better about like not treating burns with burns. Um, and by the 19th century, we were actually doing some experiments to try to figure out what the best, what the best treatment for burns was. Dr. Jacob Bigelow who conducted a lot of, uh, rabbit experiments.

Justin:

Mm-hmm [affirmative]. Okay.

Sydnee:

So, um, I don't know. You may not want to listen if you like rabbits a lot.

Justin:

Yeah. If you're like a big animal lover, maybe just skip that [crosstalk 00:16:38],

Sydnee:

Not that we're not. Like I love, I love animals. Just this little,

Justin:

No. We're not. We're just like, we gotta look this dead in the eye. Right?

Sydnee:

Yeah. And we just gotta talk about it.

Justin:

Just skip ahead like 30 seconds.

Sydnee:

Yeah.

Justin:

Go!

Sydnee:

So he, so he basically burned rabbits, um, not to get graphic but, uh, and then he would treat them with different things. He would either like dunk them in ice water or put turpentine on it. Um, and he, uh, published these

findings in the very first issue of the *New England Journal of Medicine*, which I think is pretty interesting.

Justin:

Yeah. Collect, real collectors.

Sydnee:

Like, yes, of burning rabbit experiment. Um, uh, around the same time... So that's it about rabbits.

Justin:

You nailed that, 30 seconds. Good job.

Sydnee:

Around the same-

Justin:

I zoned out too. So,

Sydnee:

... Dr. Larrey, who was a surgeon, a very fancy surgeon to a lot of Napoleon's officers, uh, was advising honey and wax for the treatment of burns, which isn't terrible. Not a terrible one. And then Dr. Dupuytren, of course, you know of the contracture fame.

Justin:

Oh sure.

Sydnee:

Everybody knows Dupuytren's contracture.

Justin:

Dupuytren's contracture. Yeah.

Sydnee:

We've talked about this before.

Justin:

Yeah.

Sydnee:

That's one of my favorite, of contracture fame is one of my favorite things to say.

Justin:

Yeah.

Sydnee:

But he expanded on this by saying maybe you should debride the area, meaning kind of clean out the dead tissue.

Justin:

Mm-hmm [affirmative].

Sydnee:

Again, revolutionary idea. Good idea. And some silver nitrate, which is still a good idea. Um, but however we were treating the burns, infection was still a huge problem. And of course, as we go into like the Civil War era, uh, the best thing we knew to do was just amputate the limb that was burnt.

Justin:

Hmm.

Sydnee:

So, you know, because we knew that, we knew people were gonna die of infection.

Justin:

All right.

Sydnee:

We knew it. Like, "Oh my gosh, you've got a hole in you. We don't really understand what exactly is gonna happen, but it's gonna be bad. So let's cut off your leg or your arm or whatever." Um,

Justin:

Doesn't that just make another hole? It's like a bigger hole.

Sydnee:

Yes. Which is why a, a lot of people died of infection-

Justin:

Got it.

Sydnee:

... in the Civil War.

Justin:

Got it.

Sydnee:

Unfortunately.

Justin:

Got it.

Sydnee:

Um, we tried other ways to avoid infection. There was a solution that we used, um, of cocaine, carbolic acid, linseed oil and lime water that you would then put like a rubber dressing over to like seal it.

Justin:

That was like halfway to a nice, pretty nice cocktail.

Sydnee:

[laugh]. Uh, you don't wanna put carbolic acid in your-

Justin:

What's lime water?

Sydnee:

Uh, I, I'm thinking it, from what I read the recipe was spelled lime like an actual, like the citrus fruit, like a lime. But I'm wondering if they mean lime, like, um, you know-

Justin:

Limestone.

Sydnee:

... limestone water.

Justin:

Okay.

Sydnee:

Um, and then you could also use picric acid, but, uh, both that and chloric acid are highly toxic and would be very damaging, and you do not want to use them on your skin ever. Although they probably did kill bacteria-

Justin:

Hey!

Sydnee:

... again they would kill everything else.

Justin:

Got it. What's next? What, what, what, what about, oh, let's see. The next would be, I guess like World War I.

Sydnee:

Well, before we talk about World War I, uh, let's head down to the billing department.

Justin:

Let's go.

[ad break]

Justin:

World War I.

Sydnee:

All right. In World War I,

Justin:

Franz Ferdinand has been assassinated.

Sydnee:

That's, hey great.

Justin:

The scene,

Sydnee:

The Archduke.

Justin:

The Archduke Franz Ferdinand has been assassinated by the Black Hand. I've set the scene. Sydnee.

Sydnee:

Powder keg of the Balkans.

Justin:

Powder keg. Ah, I'm burnt!

Sydnee:

[laugh].

Justin:

I'm burnt by the powder keg of the Balkans!

Sydnee:

[laugh].

Justin:

Sydnee, what am I gonna do about it?

Sydnee:

Oh, it's, I know it seems weird that we're kind of going through history by wars, but, um, a lot of,

Justin:

Think about it! [laugh]. Like it makes perfect sense.

Sydnee:

That way it does make perfect sense.

Justin:

It's either that or we give people like kitchen fires.

Sydnee:

[laugh].

Justin:

Like here's this history of grease fires.

Sydnee:

Well, and it really is a lot of the advances we've made on burns throughout history have been thanks to the military. Um, and research that's been done there.

Justin:

War.

Sydnee:

Um,

Justin:

Helping people out.

Sydnee:

[laugh].

Justin:

Since time in memorial.

Sydnee:

I don't know that that's a great tagline for war.

Justin:

Helping Rhett Butler, and burn victims.

Sydnee:

Causing, causing problems and then solving them. [laugh].

Justin:

Yeah.

Sydnee:

Um, so during World War I, we developed, uh, something called number seven paraffin, uh, which was basically just wax and some paraffin and some oil. But I wanted to mention it because it's called number seven paraffin which sounded to me like something from like a dystopian future book. Like-

Justin:

It's a cool name.

Sydnee:

Yeah. I liked that a lot. And then also you have to apply it with a camel hair brush.

Justin:

No, thank you.

Sydnee:

So

Justin:

Hugely unpleasant

Sydnee:

To your burn.

Justin:

Ugh.

Sydnee:

Um, so I just thought that that was kind of cool. You do start to see some like antiseptic technique used in World War I. Of course we don't have antibiotics yet, but we are understanding like, keep things clean, you know, wash your hands, that kind of thing is starting to, to catch on. Washing your hands. Um, they still used cold water immersion at this point. So as soon as you get burned, they would just like dunk it in really cold water-

Justin:

Mm-hmm [affirmative].

Sydnee:

... as soon as possible which isn't really a great idea. Um, and as well as tanning, not tanning like sun tanning.

Justin:

No tanning like hide.

Sydnee:

Like apply tannic acid to it. Yes. The idea was that this would somehow seal the wound. Uh, and this, this continued for a while, the idea of tanning a wound. This was replaced later by gentian violet because it would also kind

of seal the wound but, and then the idea was that it would also kill bacteria cause it does.

Justin:

Yeah.

Sydnee:

Kills like some grand positive bacterias.

Justin:

And doesn't upholster you at the same time, which is great.

Sydnee:

They both do- Aren't gonna color your skin though-

Justin:

Perfect.

Sydnee:

... which is interesting.

Justin:

Yeah.

Sydnee:

So, I mean, you'd have a burn that if it healed I guess, you'd always have like a brown spot or what like brownish yellow or gentian violet, I think does, would probably dye you purple. I don't think that'd be permanent though.

Justin:

Yeah.

Sydnee:

The tanning would though. Um, man, this, this episode's rough on animals. I'm gonna have to any, if you're, okay. If the, if you didn't listen to the rabbit part, there's gonna be a dog part. So just don't listen to this.

Justin:

For 30 seconds starting now.

Sydnee:

Okay. So we understood at this point that fluid loss is a big issue in burns, like dehydration, losing a bunch of fluid. So a doctor named Alfred Blalock to prove this did some experiments where he burned half of a dog, like multiple dogs, just burned them on one side and then he cut them in half, and then weighed them to prove that the half that was burnt laid wes- weighed less than the half that wasn't-

Justin:

Hatchi Matchi.

Sydnee:

... to prove fluid loss. That's terrible.

Justin:

That's re- that sucks.

Sydnee:

But that's how we prove that.

Justin:

Okay, great. Moving on. Thanks for enlightening me.

Sydnee:

Our 30 seconds,

Justin:

Eeeyuck!

Sydnee:

I know.

Justin:

You didn't miss anything.

Sydnee:

I know.

Justin:

Welcome back.

Sydnee:

All right. We're up. 30 seconds are up. Okay. Then I'll talk about new things. Let's move on from that, pretend it never happened. During World War II, antibiotics came around. Yay.

Justin:

Yay.

Sydnee:

Yay. Everybody cheer for antibiotics.

Justin:

Hurray.

Sydnee:

And this made things a lot better for burn patients, um, because then we could treat infection. But the dressing issue was still weird. We were still doing things like, like tanning burns. So we still didn't quite understand what to do. The big turning point, uh, for burns is actually the Cocoanut Grove fire in Boston in November of 1942. I know that-

Justin:

Never heard of that.

Sydnee:

... sounds weird. I know, I hadn't either until I read about this. So, uh, there is a nightclub, there was a nightclub called the Cocoanut Grove in Boston and it was a very popular nightclub in November of 1942. A lot of civilians went there as well as soldiers who were on leave.

And we're talking about around like Thanksgiving time. There was a lot of people in, a lot of family, the place was packed. It was decorated with lots of paper decorations all over the place. And all it took was, uh, I believe there was one, one waiter who was lighting like a candle or a lantern or something, and a match caught one of the paper decorations and the whole place went up very quickly. Um, the nightclub was packed. So 300 people actually died on the scene.

Justin:

Ugh.

Sydnee:

A total at the end was around 500-

Justin:

Oh my gosh.

Sydnee:

... uh, people lost their lives in this terrible, terrible fire. Uh, doctors were called in from all over the city to help care for the burn patients. Um, and so nobody really knew exactly what to do for these burns. You know, we were still kind of just all doing different weird things. And there were actually some younger doctors who had been,

Justin:

That's late as 1942!

Sydnee:

Yeah.

Justin:

That's wild.

Sydnee:

Who were, who were trying some things with like some greasier like SAVs, like petroleum jelly based salves. Um, and so some of these, like they kind of actually compared. They would try some of the older methods and some of the newer methods cause they didn't know what was better and see how, what patients did better. And so we learned a lot from this, uh, how to dress wounds and what to use on them. We learned about smoke inhalation injury, a great deal from this. Smoke detectors are probably in part due to this fire. Uh, we learned a lot about fluid loss again from this, um, and how to replace fluids and how to keep people from getting dehydrated.

Um, so although it was a terrible, terrible thing, uh, we did, we did learn a lot. We, we made the best of a bad situation by, by learning a lot about burn treatment and burn therapy and how to take better care of unfortunate victims of these, these awful kinds of disasters. Um, there was also a lot of research done in the wake of World War II, especially in the UK. I just thought this was really interesting. There was something called the Guinea Pig Club.

Justin:

What was that?

Sydnee:

Uh, it was a club that was formed. There was some like Royal air force survivors, like who had had burns and, and wounds and stuff. Um, and then there were other civilians who were cared for for burns. And they basically all joined this club where they were kept track of, where they were monitored by, you know, doctors in the city and like, uh, their burns were cared for and they tried different things to help them. And they just kept track were called the Guinea Pig Club cause they were Guinea pigs.

Justin:

Oh, yeah.

Sydnee:

We didn't, I mean you get it. You didn't, we didn't,

Justin:

I'm with you.

Sydnee:

We were experimenting on them. Um, but that club persisted, their magazine was published until 2003.

Justin:

Mm-hmm [affirmative].

Sydnee:

And I think that's fascinating.

Justin:

By the end, I was just reading it for the articles though. It wasn't a lot to, to talk about.

Sydnee:

[laugh].

Justin:

"Well we fixed burns."

Sydnee:

Well, we did, yeah. We're still learning about burns. Um, I thought though, before I tell you some real, some real burns, so I'll give you a little bit of info on how we really treat burns now. Um, as I was, as I was looking for weird burn cures from history, I found this, um, internet cure-

Justin:

Okay.

Sydnee:

... for burns.

Justin:

Got it.

Sydnee:

Uh, so one thing that was recommended was potato peels-

Justin:

Mm-hmm [affirmative].

Sydnee:

... that the, and this isn't an old thing. This is something that people like right now are telling you to do.

Justin:

Okay.

Sydnee:

Um, so if you have a first or second degree burn, what they recommend is that you just get a potato, peel it,

Justin:

Mm-hmm [affirmative].

Sydnee:

Sterilize the peel.

Justin:

In boiling water or?

Sydnee:

I guess boil it?

Justin:

Boil it.

Sydnee:

So just say sterilize it. They just say, "Make sure it's sterile."

Justin:

Don't try to fry it cause that'll be delicious.

Sydnee:

[laugh].Then you're just gonna wanna eat it.

Justin:

You're just gonna eat it.

Sydnee:

So sterilize the peel.

Justin:

"Oh, man, I ate my treatment."

Sydnee:

Um, then you're gonna up your burn in icy water.

Justin:

Okay.

Sydnee:

Nope, Nope. And then put the peel on it and then you're fine.

Justin:

That may work.

Sydnee:

Well. I mean, if you have a first degree burn, I guess go for it. If you have a second degree burn, I'd go get it checked out. That's what I would do. If you have a first degree burn and you're not sure, go get that checked out too.

Justin:

Yeah. Cause what do you know from the first degree, second degree?

Sydnee:

If you got a sunburn, you're probably cool. But, but this is what I think is great. So they say like for a first or second degree burn, our potatoes are excellent. Just get the peel, sterilize it, put it on your burn. No problem.

Justin:

Got it.

Sydnee:

Forget those doctors. But for a third degree burn, they're a little more careful with their instructions.

Justin:

Okay.

Sydnee:

So this is the order. This is the actual order that I found for, if you wanna use a potato peel to treat your third degree burn, here is, here is your, here are your instructions. Step number one, call 911.

Justin:

Okay.

Sydnee:

Step number two. Move the burn victim away from heat and smoke.

Justin:

Got it. Done.

Sydnee:

Step number three, leave the burned clothes on them. Don't try to remove them.

Justin:

Is that good?

Sydnee:

Yes.

Justin:

Yeah. That's good. Okay.

Sydnee:

So far, we're okay.

Justin:

All right.

Sydnee:

These are good, these are good advice.

Justin:

Good.

Sydnee:

Uh, number four, don't immerse the burn in cold water.

Justin:

All right.

Sydnee:

Okay, good. Don't. Number five, start CPR if needed.

Justin:

Okay. Number four wasn't really a step. Um...

Sydnee:

No.

Justin:

Nor was number three really, if you think about it. Just some dos and don'ts.

Sydnee:

Yeah. Well just things that you might fluter through your mind-

Justin:

Right.

Sydnee:

... in this, in this awful situation.

Justin:

"We should get these clothes off!"

Sydnee:

Uh, so you've started CPR if needed.

Justin:

Mm-hmm [affirmative].

Sydnee:

That's done. So you're done with CPR. I'm assuming they're still breathing.

Justin:

Got it.

Sydnee:

Number six, elevate the burned part above the heart.

Justin:

Good. Okay.

Sydnee:

Okay. And then number seven, get a potato,

Justin:

[laugh].

Sydnee:

Peel the potato, sterilize the potato peel and then place it loosely on the burned skin.

Justin:

Just lightly on there.

Sydnee:

And then number eight, get a tetanus shot.

Justin:

Great. Excellent.

Sydnee:

So can you imagine that scenario?

Justin:

No, I can't. I've, actually I can because I just visualized it very clearly. You were, you were very detailed and I imagined that exact scenario.

Sydnee:

Did they tell you that in, in basic lifesaving? Like you finish CPR, you roll the victim on their side, into the rescue position.

Justin:

Get the burn- potato.

Sydnee:

And then you run upstairs and grab a potato.

Justin:

Are you cool here cause I need to go to the store.

Sydnee:

Okay. [laugh]. I gotta go get a potato. I gotta peel it, sterilize it, put it on your skin and then go get a tetanus shot.

Justin:

I have some Ore Ida crinkle cuts. How, well I'm gonna try it. I don't know.

Sydnee:

How about just move the, just call 911.

Justin:

Okay.

Sydnee:

Um, also at McDonald's, if you work there, there was a, a, an article recently they might tell you to use butter, ketchup or mustard and note, don't go to the hospital so we can keep you working. That was a recent issue.

Justin:

Cool. That's not great.

Sydnee:

And they were telling their employees to do that. Don't do that. Go to the hospital.

Justin:

Can I, can I ask you real quick? Like what, what should we do? Like obvi- like if it's not a terrible burn, like first aid for burn, like what should you do? You said no cold water? Not cold water?

Sydnee:

No. No. Just keep the burn... I mean, I mean, no. You don't need to dunk, you don't need to dunk in an icy cold water.

Justin:

Okay.

Sydnee:

No, don't do that. And certainly if you're not sure of the depth of the burn, go get it checked out. If there's, here's what I would say. If you got a sunburn and you're just red and you hurt, you know, treat it like you, like you, just would-

Justin:

We covered that. Let's not talk about sunburns.

Sydnee:

Yeah. We tried it separate. Um, if you're not sure if it's deeper than that or if it hurts more than a normal burn, just go get it checked out. Go to the doctor.

Justin:

Okay.

Sydnee:

No, don't stay at home and try to do weird things from the internet.

Justin:

Okay.

Sydnee:

You go get it checked out. The worst case scenario is they tell you to take some Ibuprofen and put some aloe on it, and it's no big deal.

Justin:

Great.

Sydnee:

Um, and certainly if you're burned by anything other than the sun, cause who knows, you know, cause those burns can go deeper than you know. Um, so go get them checked out. Don't do anything else. Um, if you do have a second or third degree burn and you go to the hospital and you have to be admitted and cared for, we do have burn units now-

Justin:

Mm-hmm [affirmative].

Sydnee:

... where we know how to care for burns very well. Um, like I said, initial surgery can be really important. So like excision of the burn tissue and grafting. So skin grafts, um, are critical to burn management nowadays. Fluids, nutrition, it- prevent infection. Treat infection when it occurs. Physical therapy so you don't get like stiff scar tissue, you know, forming and stuff. Uh, we use like petroleum gauzes. We still use silver nitrate and then, and then antibiotic ointments. Um, I think it's interesting. They'll, they'll take now, they can take skin grafts from your own skin. Did you know they did that?

Justin:

I did know that.

Sydnee:

They can take it from like your thigh and then they mesh it.

Justin:

Meaning?

Sydnee:

They put it through this thing to, it's like making slits in the piece of skin but they can also do, a machine can do it and it'll make it look like a piece of mesh so it stretches further.

Justin:

Whoa!

Sydnee:

Yes. I know it's kind of gross, but it stretches further over the burn.

Justin:

Whew. This has been quite the episode.

Sydnee:

Sorry.

Justin:

Thank you.

Sydnee:

But, but it covers more that's so cool. It covers more surface area. They taught me that once at COSI. COSI mobile, like when they came to our school.

Justin:

That is cool.

Sydnee:

Yeah. It's very cool. Um, and we're working on growing skin and petri dishes. Well, I'm not. I'm not working on that but somebody is to replace it for burns. So yeah, don't don't, if you have a second or third degree burn, go, just go see a doctor.

Justin:

Uh, thank you so much for listening to our show. Sorry about the parts that you might have had to, [laugh], skip through. Surprisingly pretty upset.

Sydnee:

Sorry.

Justin:

Uh, wow. You just put a grape in. You couldn't even with, with 30 seconds from the home stretch.

Sydnee:

I'm really hungry.

Justin:

[laugh]. Thanks to Maximumfun.org, which is a great network for podcasts. Uh, uh, I want to, here's my special recommendation. A couple weeks ago, we hung out with our, our, I will say friend, John Hodgeman, our buddy John Hodgeman.

Sydnee:

I think he's our pal now.

Justin:

I think he's our pal.

Sydnee:

Unless, if he doesn't listen to this episode, as far as you guys know, he's our friend.

Justin:

He's our friend. So.

Sydnee:

He's our good friend.

Justin:

He's got-

Sydnee:

He's our friend.

Justin:

... a show on MaxFun called *Judge John Hodgeman* where he passes judgment on, uh, decisions of everyday life. It is hosted by bailiff, Jesse Thorn, uh, who runs Maximum Fun. And it's a great show. It's really funny. And, uh, he's a great guy. So go listen to *Judge John Hodgeman*. That's my MaxFun recommendation of the week.

Sydnee:

And I agree. So-

Justin:

All right.

Sydnee:

... now you can trust it.

Justin:

Uh, if you get a second, as an anniversary gift to us, will you go rate and subscribe to our show on iTunes and tell everybody you know to do the same.

Sydnee:

I mean, only if you're gonna rate it good. Like what kinda anniversary present is it if it's bad-

Justin:

Yeah. That would be understandable.

Sydnee:

... you know, that would understand that really.

Justin:

But if you could do that, maybe share the show with a friend, say like, just like my, my dear friends Justin and Sydnee who are not randos to me, we are all friends. I'm sorry I said randos. We're friends now that I'm asking you for something.

Sydnee:

[laugh].

Justin:

Uh, please go, [laugh], just tell everybody you know to listen. We really appreciate it. Uh, thanks so much to you for listening. Thanks to The Taxpayers for letting us use thei song *Medicines* as our intro and outro. And, uh, thanks again to you. Uh, until next Wednesday, I know it's Thursday, but you know, life, life finds a way.

Sydnee:

We'll be better. I promise.

Justin:

We'll be better. Uh, until next Wednesday, uh, I'm Justin McElroy.

Sydnee:

I'm Sydnee McElroy.

Justin:

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

[theme music plays out]

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