

Sawbones 153: Dental Hygiene

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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 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.

[Intro, theme music plays]

Justin:

Hello everybody, and welcome to *Sawbones: A Marital Tour of Misguided Medicine*. I am your co-host, Justin McElroy.

Sydnee:

And I'm Sydnee McElroy.

Justin:

Sydnee, what a pleasure it is to be back reporting. Sorry that we missed last week.

Sydnee:

Yeah, we really missed you guys and we're sorry that we're running late. [sarcastic] But... my big shot husband... Hollywood J, as they call him now—

Justin:

As he is known.

Sydnee:

...is filming a big shot TV show.

Justin:

That's right. Uh... well...

Sydnee:

No, seriously, I'm very proud of him and it's gonna be very funny.

Justin:

It's a regular TV show. Not necessarily anything big or small about it, it's just a regular size television program.

Sydnee:

Well, I think it's... I think it's a big deal.

Justin:

Thanks, sweetheart.

Sydnee:

Either way, we have been very busy and very tired.

Justin:

Yeah... uh... it's been, like, 12-hour days... and then—

Sydnee:

And—

Justin:

... I have to come home and single-handedly parent a... two-year-old.

Sydnee:

[sarcastic] Oh, yeah... uh-huh, that's definitely what you have to do. Some of us, I guess did like a residency and we're... we're used to that.

Like maybe working, I don't know, 40-hour days and, you know, 80-hour weeks... 100-hour weeks, whatever.

But I understand that, like, the less... I don't know... tough...?

Justin:

Tough is a good word.

Sydnee:

... among us—

Justin:

Mm-hmm, mm-hmm, mm-hmm.

Sydnee:

That... That it's a little more difficult... for you? Is that fair to say?

Justin:

It's... You know what, but I... The thing is... the thing that's inspiring to me about me, is that I haven't let anything fall by the wayside.

Sydnee:

No, that's true. Every night Justin, no matter how exhausted he is, when we— Before we go to climb into bed to finally collapse at the end of a long day in our comfortable bed, Justin makes sure to eat a bowl of cereal every night.

Justin:

Well... not every night.

Sydnee:

No, every night Justin makes sure that the last thing he does—

Justin:

[laughs]

Sydnee:

...before he goes to sleep at night is... Actually not only eat a bowl of cereal, but watch YouTube videos of old cereal commercials while he is eating a bowl of cereal.

And then as soon as he is done... put it on his nightstand and turn off the light and roll over to fall asleep.

Justin:

Yes, it's a bedtime ritual. There's nothing wrong with it.

Sydnee:

Well, there's one thing wrong with it...

What do you forget to do, come on, let's be honest, every night? [laughs]

Justin:

Some... Some nights, I forget to brush my teeth afterwards. Is that what you want?

Sydnee:

Pretty much every night.

Justin:

Pretty much every night, I forget—

Sydnee:

Part of our bedtime ritual is that Justin eats a bowl of cereal every night and then tries to roll over and go to sleep, as if I won't notice...

Justin:

That... yeah, and she always does.

Sydnee:

And I tell him to go brush his teeth and then you know what he usually says, "I did." [laughs]

Justin:

Sometimes I do try that tactic.

Sydnee:

Like, maybe I blacked out.

Justin:

Like you fell asleep, and when you woke back up you were like, "Huh, what happened?"

Sydnee:

[laughs] "Brush your teeth, brush your teeth!"

Justin:

"Sorry, Syd, I was brushing my teeth. I didn't want to wake you."

Sydnee:

My point is that I think, although I have taken criticism on this show in the past for being... a little... a little... I'm not against going to the dentist, I just avoid... maybe avoidant, of going to the dentist.

I have better dental hygiene than you do.

Justin:

That's... I mean, you can make the argument that my... I... visits to the dentist are the reason I'm able to maintain my freewheeling...

Sydnee:

[laughs]

Justin:

[laughing] ... lifestyle.

Sydnee:

Of cereal eating and non-toothbrushing?

Justin:

Yeah.

Sydnee:

You even have like a really fancy toothbrush, like, an electric toothbrush.

Justin:

It's great, I feel like I get it all in one. I get it all in that morning shot. A lot of times I don't need to go back for another trip.

Sydnee:

Uh-huh. That's not how that works, you also have a... Waterpik?

Justin:

Yeah, that's to get at... between the teeth, instead of flossing, 'cause I hate flossing.

Sydnee:

Right. Everybody does.

Justin:

Yeah.

Sydnee:

I mean, even if you do floss, I'm not saying nobody flosses, there are people who floss. Not as many who say they do, but they're out there.

But nobody enjoys it.

Justin:

I'm just sitting here realizing this is the first... like, this is the longest conversation we've been able to have all week and it makes me kind of sad, but it makes me happy 'cause we're having it.

And *Sawbones* has facilitated that, but...

Sydnee:

And you all get to be a part of it.

Justin:

I miss you very... If, in case we start, like, just talking about other things

Sydnee:

[laughs]

Justin: Like, did we forget to pay any bills or whatever, like, [laughs] that's because this is our one chance to sit down and talk.

Sydnee:

Also don't worry, I got diapers. We're good.

Justin:

Why did you decide to harp on me about my... teeth cleanliness?

Sydnee:

Because I want to talk about dental hygiene.

Justin:

Okay.

Sydnee:

I wanna talk about flossing, but here's the story, guys. There's only so much I can say about flossing. Like, it's a... You know, it's a little piece of thread that you rub between your teeth.

Justin:

We got that one in one. I mean—

Sydnee:

There's like a [laughs]... I mean, you can- As you can imagine, the history of that is limited.

So, let's talk about some aspects of dental hygiene in general. And everybody has been itching to hear our thoughts on... not, I mean, not just our thoughts, but everybody's thoughts on like, the flossing thing, right?

Justin:

Yeah.

Sydnee:

Everybody knew that, like, flossing maybe is not necessary.

Justin:

Kind of wack.

Sydnee:

This has just come out. And so a lot of people have been tweeting and asking, like, "Hey, will you talk about flossing?"

So, thank you to Melissa and Ty for sending us emails about this, and to all of you who tweeted and Facebooked and everything else.

We have been cleaning our teeth for a really long time. Well, I have, Justin not so much. But...

Justin:

Okay. I think you've gotten in your shots.

Sydnee:

[laughs] Cuneiform texts dating back to 3000 BCE have descriptions of cleaning your teeth.

And we have found, like, ancient toothpicks from Mesopotamia around the same time.

You can also tell based on like skeleton- like skeletal remains- they've seen little notches on teeth to indicate that people have tried to, like, rub things on them or clean—

Justin:

Oh, cool.

Sydnee:

... them in some way. So we have evidence that people have been...

Which makes sense, like it feels... yucky... when your teeth—

Justin:

[yawns] Yeah, especially, like, if it's been a while and you wake up and you have that feeling. "Ooh, I gotta get in there."

Imagine not doing that for like, days, on end.

Sydnee:

Eugh.

Justin:

How, like, necessary...

Sydnee:

I can't

Justin:

... something up there would feel.

Sydnee:

I can't. The first thing I have to do every morning is brush my teeth. I cannot... I cannot do anything. I won't even talk much until I do.

Justin:

Mm-hmm

Sydnee:

And it stresses me out to no end to go to sleep with dirty teeth.

Justin:

Yeah.

Sydnee:

Ugh, ugh, can't handle it. They used to think that teeth worms were the cause of decay.

Justin:

Why would they think that? Because it... it's not like they saw one, 'cause it wasn't real.

Sydnee:

No.

Justin:

It seems like, easy enough to prove.

Sydnee:

No... I mean I guess if you have, like, cavities, you've got holes or something in your teeth? Like some... maybe you began to think like something's burrowing into your teeth.

Justin:

Okay, burrowed in there, I get that.

Sydnee:

That kind of thing.

Justin:

That tracks.

Sydnee:

One of the earliest things that we think we used, that humans used to clean their teeth, was probably horse hair.

Justin:

Mm.

Sydnee:

They used the hair from horses for flossing.

Justin:

Mm-hmm.

Sydnee:

And then also twigs for toothpicks, so just like a twig with a frayed end that you could kind of rub against your teeth.

And they actually called them chew-sticks instead of a toothbrush. And it would just be like a twig with... Like, you know, if you chew on like a thin twig and it kind of frays, bristles out on the end?

Justin:

Yeah, yeah, yeah, yeah.

Sydnee:

And they would just keep chewing on it to clean between and, you know, the bottoms of their teeth.

Justin:

That's so interesting. There's like a direct line of like... Like, you can see a direct line of evolution from that to the modern toothbrush.

Sydnee:

Exactly, and these- We have found evidence of these dating back, like I said, thousands of years.

A chew-stick specifically known as a miswak, which is used throughout the Arabian Peninsula, and North Africa, and the Indian subcontinent, and Central and South-East Asia.

Was usually made from a certain tree, *Salvadora persica*, which is also known as "the toothbrush tree" [laughs] because of the chew-stick that was made from the bark of this tree.

Justin:

Right.

Sydnee:

The stem, I should say, not the bark, the stem. The stem and the leaves do have properties that may make them somewhat good for cleaning teeth. So there may be a little bit of...

Justin:

Oh, cool.

Sydnee:

... like a reason this was known as specifically "the toothbrush tree" and not just any old twig.

However, there also a chemical in the leaves, and in the stem, and in the bark that may be, if you had enough of it ingested would also kill you.

Justin:

Jee-yikes.

Sydnee:

Which seems like a risky choice.

Justin:

Like, how bad... Yeah, it's not like we're gathering Lorenzo's Oil here.

Sydnee:

[laughs]

Justin:

You're just brushing your teeth, like...

Sydnee:

That's a nice Lorenzo's Oil pull there.

Justin:

Thanks. It's like... how... how bad do you want it?

Sydnee:

Of all the stems you could randomly choose to chew...

Justin:

Mm-hmm?

Sydnee:

I... Why that one? The first dentist in Ancient Egypt was written about in the Ebers Papyrus that was Hesy-Ra. And so we know there were people whose job it was to take care of teeth that long ago.

Justin:

Wow.

Sydnee:

Who kind of designated it, like, this is... "I am the person Sydnee will spend her life avoiding." [laughs]

Justin:

[laughs]

Sydnee:

"That is my job."

And it's also written that the... Asclepius—

Justin:

[snorts]

Sydnee:

The... the god of... rod fame.

Justin:

Yeah, Rod Guy.

Sydnee:

Greek, Roman god... The, you know, the...

Justin:

Rod Asclepius...

Sydnee:

... Asclepius Rod.

Justin:

... they called him.

Sydnee:

Rod of Asclepius, yup. Was thought to advocate cleaning your teeth as well. I don't know how or why, I mean... I guess we just said that. And so then... we... then he did... advocated it.

Justin:

What do... I don't understand.

Sydnee:

How do we know what the god thought?

Justin:

How do we know what any of this means? Oh, you were saying how do we know that the god thought you should brush your teeth.

Sydnee:

Yeah, how did we know Asclepius though you should clean your teeth?

Justin:

I don't know, it's the first time anybody's ever put words in the mouth of a god before.

Sydnee:

[laughs]

Justin:

Why would they... Why would they use it to talk about teeth? That's very strange.

Sydnee:

It was written... that Asclepius liked you to clean your teeth.

Justin:

Yeah.

Sydnee:

It was just his thing, he was just really—

Justin:

It was the first- It was from the first ever dentist-slash-prophet, "I've come down from the mountain with word from Asclepius [sic], he wants everybody to keep—

Sydnee:

Asclepius [sic]? [laughs]

Justin:

Asclepius, he wants you to take really good—

Sydnee:

Please clean your teeth.

Justin:

... good care of your teeth.

Sydnee:

He's like that judge from Ally McBeal. A reference everyone loves. [laughs]

Justin:

Oh god.

I... From the me spending time away, more time there is a direct line...

Sydnee:

[laughs]

Justin:

...between... "Time Justin Spends Away" versus "How Many Episodes of Ally McBeal Sydnee Watches in Shame."

Sydnee:

Again... I watched it the first time.

Justin:

Again.

Sydnee:

This is not a first-time thing.

Justin:

Okay, rewatches then.

Sydnee:

Aristotle definitely thought that teeth mattered, he advocated cleaning them. He also wrote that men have more teeth than women.

Justin:

Okay.

Sydnee:

Just a weird, like, footnote, "Also, we have more, ladies... Deal with it."

Justin:

That's not true, right?

Sydnee:

No. I don't know why he thought that. Like, it's a—

Justin:

That seems like a pretty easy one to check your math on.

Sydnee:

You just count.

Justin:

Yeah.

Sydnee:

Hippocrates advised cleaning your teeth with powder, like taking a powder, like a rough powder and rubbing it against your teeth.

He also described different ways to pull teeth. So, the- We knew that far back that if a tooth is... has gone rogue, that sometimes there's nothing left to do but remove it.

And so he described different methods of, like, pulling them out with forceps or if you have a loose one that you don't want to get rid of, that you can kind of stabilize it with a wire.

Justin:

Yeah.

Sydnee:

Like an early kind of...

Justin:

Woof.

Sydnee:

... braces... sort of thing...

Justin:

Yeah.

Sydnee:

Ancient toothpastes, like I mentioned, were usually powders, and they were usually made of powdered ox hooves, or ashes, or maybe burnt eggshells. Pumice was a popular choice. Crushed bone, oyster shells.

This... I mean, basically anything that would be kind of abrasive.

Justin:

I'm not hearing a lot of like, spearmint and fluoride in there.

Sydnee:

No.

Justin:

Kind of—

Sydnee:

Just no.

Justin:

Kind of grody.

Sydnee:

No. And I'm... I would think that you would be really discouraged from using toothpaste after one run of, like, "Here's some burnt eggshells that I would like you to rub on your teeth."

Justin:

Yeah, I think I'd rather just keep the dirty teeth thing.

Sydnee:

Romans did start to add flavor to some of these toothpastes, so I don't know if mint in particular, but they did add some sort of flavorful compounds sometimes.

Justin:

Huh.

Sydnee:

So that it wouldn't taste so gross, 'cause I... Again, never ate burnt eggshells, or ox hooves, but I bet they're not tasty.

But they also used charcoal and bark. And then eventually we started to see things like ginseng, and mint, and salt added. So not so bad.

Justin:

I feel like I've had salty toothpaste before, but I don't remember when.

Sydnee:

There are salty toothpastes out there, I feel.

Justin:

There are salty toothpastes, right? I think- You know what it is? It's the ones that have, like, baking soda.

Sydnee:

A lot of baking soda ones can be kind of salty.

Justin:

Like a salty vibe.

Sydnee:

Celsus, so as long ago as Celcus, wrote about fixing fractured jaws, so we already had descriptions of, like, you know, those kind of more advanced maxillofacial surgical kind of procedures.

And gold crowns date back to the Etruscans. That's a long time that we've been—

Justin:

That's quite a—

Sydnee:

... capping our teeth in gold.

Justin:

... quite a technical feat too. 'Cause that seems like kind of a tricky one.

Sydnee:

Mm-hmm. You just take a piece of gold and slap it on there. I figure that's how dentists do it, I bet.

Justin:

Yeah, you just... you have no idea.

Sydnee:

I should... I should have prefaced with this.

Justin:

Yeah, that's probably a good disclaimer now, a little bit late, but...

Sydnee:

Yeah, doctors don't know much about teeth. Your doctor might not want to admit that to you, but it's the truth. We don't learn a ton, because, like, dentists have it, they've got it covered.

Justin:

Yeah.

Sydnee:

Go to a dentist about your teeth. If it's infected, I can help you out, but most other things, I'm gonna tell you that you need to see a dentist.

Albucasis wrote about how tartar was formed.

And not only that he created a set of 14 different scrapers for your teeth. Fourteen different types of scraper to use on your teeth to remove tartar.

Justin:

That's pretty impressive. Although, it is a little—

Sydnee:

That seems a little excessive, to my mind.

Justin:

It's a little troubling, like... He'd made the 13 inadequate ones? Like he's like, "Ugh. I gotta try again."

Sydnee:

No, like, different kinds to use for different, like, angles and size and—

Justin:

Oh, so this wasn't like prototypes that he was churning through like...

Sydnee:

No. No, like, "Here are 14 scrapers." I don't think... Now, Justin- I'm gonna have to go to Justin on this one. I haven't been to the dentist in a really long time.

Do they have 14 different tools they use to scrape your teeth?

Justin:

No, they just have the one.

Sydnee:

Okay. Much more sophisticated dentistry I guess.

Justin:

They used to tell me when I was a kid that they were counting my teeth. That's inaccurate. Then I bought it, but that's like, it doesn't make sense, you could just look, it's really...

Sydnee:

You don't fall for that now, you're a big boy.

Justin:

No, I say, "Oh, do you mean scrape them? Nice try."

Sydnee:

[laughs] [As Justin] "I know now, I'm an adult."

Uh, as far back as the 1200s barber-surgeons were doing surgery. We've talked a lot about barber surgeons before.

Of course there was a long time in history when it was... it was improper, for a physician to cut into the human body or do any kind of surgical procedure basically.

We just kind of sat there and looked at humans and talked about them a lot but didn't really do things to them.

Justin:

Mm-hmm.

Sydnee:

Barber-surgeons would have been the ones to actually pull a tooth if they... if they needed to be removed. Especially lay barbers.

So, there were some barber surgeons who were a little bit more sophisticated, could do some more advanced procedures.

But a lay barber is somebody who would, like, pull your teeth, bleed you, put a leech on you, maybe do some cupping.

I'm assuming also cut your hair? Give you a shave.

Justin:

Yeah, well no—

Sydnee:

Probably?

Justin:

As long as you're there.

Sydnee:

A lay barber? I figured they can do that too.

And then of course, we've talked a lot on the show about, like, the history of teeth pulling. I won't get into that too much, but...

Teeth pulling, you know, barber surgeons did it, lay barbers did it, but it became quite a show after a while.

Justin:

Mm-hmm

Sydnee:

Like, people... it was a spectacle. People liked to see teeth being pulled, so...

Justin:

There wasn't a lot going on back then.

Sydnee:

As it spread throughout Europe, a lot of the time's you could go see like a medicine show or just watch a traveling barber surgeon pull teeth out in front of a crowd.

Justin:

[uncomfortable noises]

Sydnee:

Like to see how fast they could do it. No, anesthesia, you wanted 'em to do it fast.

In 1498 in China, a toothbrush was invented. That is when we finally get the toothbrush.

Justin:

Wow.

Sydnee:

Kind of replaces—

Justin:

Took a long time to appear.

Sydnee:

Yeah, and it kind of replaces the chew-stick. The original toothbrushes were made with a handle or either bone or bamboo. Let's hope not human bone... probably an animal.

And then the bristles were the stiff hairs off the back of a hog's neck.

Justin:

Oh, okay.

Sydnee:

Ew...

Justin:

No... I mean, it makes sense.

Sydnee:

Ew.

They specifically liked the hogs from Northern China and Siberia, because it was so cold there they grew really coarse hairs. Now you know that fact about hogs, you're welcome. [laughs]

Justin:

[snorts] I feel like all the disciplines, I'm learning something about today.

Sydnee:

[sarcastic] I think the next time you're at a dinner party you could make a lot of friends, and become very popular if you say, "Hey, you know, the hogs up in Northern China and Siberia?"

"They grow some really coarse hairs on the back of their necks because it's so cold."

Justin:

"If you need a toothbrush in a fix..."

Sydnee:

There you go... make friends.

It took a while for this to get to Europe. In Europe, they were still using, at this point, rags with, like, salt or soot, again something kind of abrasive on them and rubbing those on their teeth.

Which, that probably looked great, to rub a rag with soot on it on your teeth.

Justin:

Yeah, like, did the... I guess word didn't get around that, like, the Chinese had—

Sydnee:

[laughs]

Justin:

... kind of cracked this bad boy wide open?

Sydnee:

Yeah.

Justin:

How embarrassing.

Sydnee:

Yeah, "There's a better way to do this."

Strangely, the legend of how it got to Europe, of how the toothbrush eventually arrived, comes from a rag merchant.

So, you'd think somebody who probably wouldn't want you to know about the toothbrush, somebody who sold rags, if those were the "toothbrush" of choice at the time.

Justin:

Mm-hmm.

Sydnee:

William Addis, and this is the legend, in 1780, was supposedly thrown in jail for starting a riot.

So he caused some kind of ruckus, he was thrown in jail. And while in there his mouth was getting really yucky after a while, sitting in, you know, spending time in a jail cell.

Justin:

Sure.

Sydnee:

He did not have access to his rags, I suppose.

And so he started to get inventive. He found some bone... eugh... he's in a jail cell, so... you figure that out.

Justin:

Oh... Ew... yeah...

Sydnee:

He found some bone...

Justin:

Maybe a passing rat had died and he was a very patient man.

Sydnee:

Uh... he... [laughs] he found some bristles... Either broom bristles, 'cause he was actually inspired by a broom he saw to do this.

Or it may have been a kind guard that passed him some hog hair bristles.

Either way, he put 'em together and voilà, the toothbrush arrives in Europe.

And when he got out of jail—

Justin:

That weird though, because it didn't really arr- I mean...

Sydnee:

You have to imagine that this story is somewhat apocryphal and that he was really inspired by the toothbrushes that... I mean—

Justin:

I mean...

Sydnee:

I mean, all these things eventually would have spread from China.

Justin:

If he wasn't, like, big ups to China for keeping the toothbrush a secret for 280 years.

Sydnee:

[laughs]

Justin:

Like they- Anybody who looked vaguely European, they're just like, "Hide the toothbrushes!"

Sydnee:

[laughs]

Justin:

"There's a European coming and we can't let this secret get out."

Sydnee:

[laughs]

Justin:

"We got 130 more years to churn through, darling. Hide 'em!"

Sydnee:

It is perfectly possible that this... that the inspiration for dental hygiene, the toothbrush, that he came upon it all on his own. It's possible.

I would say that somebody whispered something to somebody at some point.

Justin:

For 280 years, eventually they were like, "Fine, okay, yes, I'll make one."

Sydnee:

"Here's what we use, this is why our teeth look so much better than yours."

He began selling them when he got out of jail. And you see this kind of rise as sugar becomes more popular.

Justin:

Mm-hmm.

Sydnee:

So too does the toothbrush.

And as the design spread throughout Europe, you saw the boar, or the hog bristles, begin to be replaced with things like horse hairs or even feathers sometimes, just because they liked the softer feel.

Justin:

Mm. What was the... What's the next step of toothbrush evolution?

Sydnee:

Well, Justin, I'm gonna tell you about that. But, first, why don't you follow me to the Billing Department?

Justin:

Let's go.

[Theme song plays as we go to the Billing Department]

[We leave the Billing Department]

Justin:

Well Sydnee, we finally made it to the uh... I guess 1700s, thereabouts. And what was the next step in... in toothbrush engineering?

Sydnee:

Well Justin, I know people are wondering, when are we gonna start talking about flossing? We're getting there, we're getting there.

Justin:

[sighs] Yeah, all the—

Sydnee:

We had to have a toothbrush, first.

Justin:

All you floss heads out there.

Sydnee:

All you floss heads.

Justin:

Just drop it. Drop that—

Sydnee:

Come on.

Justin:

... that good, good, floss knowledge.

Sydnee:

Get to floss. First of all, in 1728, Pierre Fauchard- who was also known as the Father of Modern Dentistry, so... you can trust him- wrote *The Surgical Dentist*.

He actually told people not to brush and instead recommended cleaning your teeth with a toothpick, or a sponge soaked in water and brandy. Which does sound like more fun.

Justin:

Yeah, absolutely. Better than brushing your teeth! I'd brush my teeth every day.

Sydnee:

But you do see a highlighted importance of cleaning between your teeth at this point.

Justin:

Sure, right.

Sydnee:

You know? A toothpick will do that for you. Did you know that Paul Revere was a dentist?

Justin:

Yes, I did know that, actually.

Sydnee:

Well... now you've ruined that.

Justin:

I think they mentioned it in Fallout 4, so...

Sydnee:

Oh, obviously.

Justin:

Yeah.

Sydnee:

That's a video game?

Justin:

And it's set in Boston, so...

Sydnee:

Okay.

Justin:

We saw the church where he did the Last Ride. He didn't ride through the church would have been very rude.

Sydnee:

[laughs]

Justin:

But I know the church was involved somehow.

Sydnee:

[laughs] The church where he probably did some dentistry, is that what you're saying?

Justin:

Where he did the, "One if by land, two if by sea."

Sydnee:

Yes. We—

Justin:

All that good stuff.

Sydnee:

Yeah, we did see that, honey.

Justin:

Remember that?

Sydnee:

Good story.

Justin:

Yeah, it was not great. It was not one of my best anecdotes.

Sydnee:

[laughs]

Justin:

But...

Sydnee:

"We saw the church where he did some stuff, Paul Revere, Boston."

Justin:

Yeah, we saw *Cheers*, real *Cheers*.

Sydnee:

Okay, back to teeth and not Bos- We love Boston, but that's not what the show is about right now.

Paul Revere was actually the first one to use dental forensics. Did you know that?

Justin:

Mm-hmm. No, I didn't know that.

Sydnee:

Okay. And—

Justin:

That one—

Sydnee:

Mm-hmm.

Justin:

That one—

Sydnee:

[Mocking Justin] “Mm-hmm. Yes? Mm-hmm. I know all the—”

Justin:

Yeah... Wha...?

Sydnee:

[sarcastic] Tell me all about Paul Revere, please Justin, and the church where he did the Last Ride thing that you said.

Justin:

Um... I think... uh... didn't he do “Louie, Louie”? Was that Paul Revere and the Raiders? Was it them?

Sydnee:

Anyway, he identified a fallen friend on the battlefield by seeing a bridge that he knew he made for him in his mouth. He was able to use that bridge to identify that this is who this is.

Justin:

Oh, that's interesting.

Sydnee:

That was the first time that we recorded using dental forensics.

Justin:

Huh.

Sydnee:

Which is interesting. Because we commonly know that that's a thing we can do now, identify people after death by their teeth.

Justin:

Right.

Sydnee:

Floss. Let's talk about floss.

Justin:

Finally.

Sydnee:

Floss is introduced in 1819. It's not that long ago really—

Justin:

Not in the grand scheme—

Sydnee:

...in the *Sawbones* scale of...

Justin:

Yeah.

Sydnee:

...of time. By Levi Spear Parmly. Initially what he advised, what floss was, was a waxed silk thread to clean between your teeth. That's a fancy piece of floss.

Justin:

Yeah. Expensive too, I bet.

Sydnee:

Yeah, waxed silk. After this was introduced, the *American Journal of Dental Science* advised flossing two to three times a day.

Justin:

Um...

Sydnee:

That's a lot of flossing.

Justin:

That seems excessive, one. It seems like they were trying to juice old Levi Spear Parmly's pocketbook a little bit. Like maybe he lobbied them for that.

Sydnee:

And I... that seems like very prohibitive too. I think a lot of this too, you could not have just obtained easily on your own.

You may have had to actually purchase from a dental provider. Someone who would actually take care of your teeth.

Justin:

Yeah. It seems like- I mean...

Sydnee:

Because this is a very specialized product, waxed silk.

Justin:

Seems like something you could just make, right? You dip the silk in wax, you're done.

Sydnee:

[sarcastic] Yeah, just go get some silk and then some wax and melt it and...

Justin:

Uh... yeah, I guess. I mean, silk's harder.

Sydnee:

And make a lot of it.

Justin:

Everybody could do the candle thing.

Sydnee:

`Cause like... you don't want to share it.

Justin:

No, that's true. Well...

Sydnee:

Although, back then they probably would have shared it.

Justin:

[Elderly old-timey voice] "We can only afford one piece of floss, we've been using it since June, for all of us."

Sydnee:

[laughs] Ugh. That would not be advised by anyone in any health profession, I have to... Well at least not now, back then they wouldn't have known better probably.

Justin:

Right.

Sydnee:

And floss at this point kind of becomes part of routine dental-care. Like it just starts to be recommended. People knew to brush, they knew to use toothpaste, and also by the way, there's floss.

Justin:

Mm-hmm.

Sydnee:

And we now see, like in the late 1800s, the evolution of dentistry with, in 1875, the first dental college with a university is started.

In 1882, we figure out that tooth decay is a result of microbes, so we start to understand the process a little bit more.

In 1880s we see toothpaste, more as we know it, is finally invented. Up until then toothpaste was usually like a liquid or a powder, and it had things like chalk, and soap, and charcoal in it.

In the 1880s we see, like, toothpaste in a tube.

Justin:

Mm. Convenient.

Sydnee:

That's when that's finally introduced. And then as we go into the 1900s—

Justin:

Boy, I have to feel... You gotta feel for whoever invented that, because without specialized tools to do so, the first person to try to put toothpaste in a tube must have looked like quite the buffoon, I would imagine.

Sydnee:

[laughs]

Justin:

[As First Person to Put Toothpaste in a Tube] "I'll be at dinner... I said I would be at dinner when I'm done."

Sydnee:

[laughs]

Justin:

[As Family of First Person to Put Toothpaste in a Tube] "You've been at it for three hours!"

[As First Person to Put Toothpaste in a Tube] "I said I'm inventing!"

Sydnee:

[laughs] But, I mean, you know, he changed the world.

Justin:

Yeah. I guess.

Sydnee:

So, all worth it.

Justin:

Yeah.

Sydnee:

So I guess don't give him such a hard time is what I'm saying.

Justin:

Yeah, that's true. I will take it easy on him.

Sydnee:

Do you think that he would lament the way we use toothpaste in a tube now?

Justin:

Um... It depends on how you're talk—

Sydnee:

Because we don't squeeze from the bottom, the way you are supposed to.

Justin:

I... You know what? I don't squeeze from the bottom, until... I think you don't really need to do that until things get dire.

Sydnee:

Oh, okay.

Justin:

When things get dire, then I'll try that because I find it very satisfying. But I hate squeezing from the bottom initially.

Sydnee:

I bet it wouldn't get so dire if you squeezed from the bottom from the beginning.

Justin:

Mm... I mean, maybe. That's arguable.

Sydnee:

Anyway, in the 1900s we see dentists actually getting more involved with the prevention of tooth decay.

You know, up until then dentistry was a lot more about, like, they made recommendations about things like cleaning your teeth, but it was really much more about fixing the problems after they occurred, right?

Justin:

Well, sure.

Sydnee:

What do we—

Justin:

There's no... There's no money in prevention.

Sydnee:

[laughs] I... as a family practice doctor, I take great exception to that.
[laughs]

Justin:

That's fine. But you know how dentists are, though.

Sydnee:

Also—

Justin:

All they care about is money.

Sydnee:

[laughs] Exactly.

Also, to be fair, you're right, there is no money in what I do, but it's a noble cause.

Justin:

[sarcastic] That's fine, but, like, not dentists. Dentists are only in it for the money.

Sydnee:

Right, all that... all that sweet...

Justin:

All that tooth money.

Sydnee:

[sarcastic] All that sweet tooth money from the tooth fairy.

Justin:

You think that—

Sydnee:

It's a racket, right? They're in it together.

Justin:

You think- Yeah, they're a team. They're working collaboratively.

Sydnee:

The tooth fairies work for... There are multiple tooth fairies, they work for the dentists.

Justin:

Mm-hmm. The mayor—

Sydnee:

You can employ—

Justin:

The King Dentist, the Chief Dentist, the tooth fairies work for him.

Sydnee:

[laughs] You can employ tooth fairies... It depends. You can have more tooth fairies depending on how much area you cover, like how much power you have.

Justin:

Yeah, that's a hundred percent—

Sydnee:

If you conquer other dentists—

Justin:

[sarcastic] This is all true.

Sydnee:

...rival dentists. [laughs]

Justin:

It's like Risk. It's like Risk... meets nonsense.

Sydnee:

[laughing] You get more tooth fairies at your disposal.

Justin:

Right, you—

Sydnee:

To collect teeth for you that you sell for money? I'm confused as to where the money comes from.

Justin:

You conquer Kamchatka and then you get three new tooth fairies for every round.

Sydnee:

[laughs] Anyway. In the 1900s, dentists said, "You know what? Instead of just yanking out bad teeth and trying to figure out how to fix cavities, why don't we try to start getting people to take better care of their teeth?

"So that they don't get tooth decay in the beginning."

Justin:

Mm-hmm.

Sydnee:

1938 is a big move forward for the toothbrush. Dr. West's Miracle Toothbrush is the first one sold with nylon bristles, that replaced the boar bristles that were still often being used. So that makes them a lot easier to obtain.

Justin:

Absolutely.

Sydnee:

That really spread the use of the toothbrush, because then everybody could buy one, all of the sudden. It was a lot easier to make, a lot easier to buy.

And also, you didn't have to put... pig hairs in your mouth.

Justin:

True.

Sydnee:

Soldiers returning from World War II did a huge... did a huge good for dental hygiene in this country.

Justin:

How so?

Sydnee:

They had really good hygiene overseas, they just... That was part of the military, part of their practice was good dental hygiene.

Justin:

Yeah, you don't want to be brought down by that kind of thing when you're out there.

Sydnee:

And then they may not have had those habits before they went, but when they came back they brought them back with them, and that spread better dental hygiene throughout the country.

Justin:

Also helps that the military are making everything standard issue... Making sure everybody has the stuff they needed to do that.

Sydnee:

Exactly, give everybody a toothbrush.

Justin:

Sure.

Sydnee:

And this is also... World War II is also related to the spread of floss.

So up until this point, we see that, you know, waxed silk is still the mainstay of floss. Well, during World War II there were silk shortages.

Justin:

Mm-hmm.

Sydnee:

So, we had to kind- I mean, this seemed like a silly way to use silk, right? To clean between your teeth. Well—

Justin:

For sure.

Sydnee:

... Dr. Charles Bass decided we need something different, we've got these nylon toothbrushes, what about some nylon floss?

Justin:

Okay.

Sydnee:

So then we see nylon floss comes out and that becomes the new standard.

And at this point everybody has access to floss. It's a lot cheaper, it's a lot easier to buy. It's in all the stores and you can go buy, you know, yards and yards of floss at your disposal.

They're like yards and yards, right? There's like a lot of floss in a thing...

Justin:

It seems like a lot of floss in there. I've never thrown away a container to my knowledge. [laughs]

Sydnee:

[laughs]

Justin:

I just use it or... sort of get tired of floss or I'll find floss and think like, "I don't remember buying this." And then you gotta throw it away. Can't put that in your mouth.

Sydnee:

So you think, "Oh this seems too old"? I just have trouble with, like, lengths. Feet, yards, there's a lot of it.

Justin:

Yeah.

Sydnee:

In the 1960s electric toothbrushes hit the market, which Justin is a big fan of.

Justin:

Yeah.

Sydnee:

He's getting our daughter hooked on electric toothbrushes.

Justin:

I was very proud of myself, the current toothbrush we have will pair to your phone via Bluetooth and keep track of your brushing habits.

And that sounds like tailor-made for me. I actually have not used the functionality yet. I felt very proud of myself.

Sydnee:

I'm proud of you too, 'cause that's just a step too far I think.

Justin:

Yeah.

Sydnee:

It's just... I mean—

Justin:

Plus I didn't need the guilt.

Sydnee:

You need the bristles and the handle, people. Bristles and the handle.

Justin:

I'm already feeling bad about Couch to 5k and MyFitnessPal.

Sydnee:

[laughs]

Justin:

I don't need like... tooth... a toothbrushing app giving me crap too.

Sydnee:

[laughs] One step forward for dental hygienists that I just had to mention was that in 1971 they were allowed to wear pants so that they could sit down while they were working.

Justin:

Wow, what a big... plus.

Sydnee:

Which seems like... shame on us for not just making that the standard from the beginning.

Justin:

Yeah.

Sydnee:

Just as... I mean, to be fair this went along with the same... I mean it had to do with like, dress codes for genders at the time.

A lot of women were dental hygienists and they were expected to wear skirts.

Justin:

That's ludicrous.

Sydnee:

I- Yes, it is all ludicrous. So... So thank goodness in 1971 we got a little less ludicrous.

In 2003 the toothbrush was voted the Number One Invention Americans Can't Live Without.

Justin:

So why- Okay, I—

Sydnee:

Unless you're Justin.

Justin:

Congratulations to the toothbrush. So why is it that people were saying, like, "I don't need to floss now?"

Sydnee:

Okay. So, up until recently your recommendations for dental hygiene, you know, a dentist would tell you that you need to brush and floss your teeth regularly, right?

Justin:

Right.

Sydnee:

Like, we hear that all the time. That dates back to elementary school, they're telling you to brush and floss your teeth regularly.

Justin:

We hear that on the candy review video that Charlie likes to watch on YouTube.

Sydnee:

That's true.

Justin:

The Babyteeth4 videos always end with, "And brush and floss your teeth regularly."

Sydnee:

Exactly.

This year flossing was very quietly dropped from the recommendations from the dietary guidelines for Americans that are published every five years, that have always, historically included the recommendation to... you know, brush and floss your teeth regularly.

Justin:

Right.

Sydnee:

There was no fanfare initially, they didn't announce that they were going to, there was no suggestion that this was going to happen. It wasn't highlighted. It was just... absent.

Justin:

Yeah, this feels like they're trying to pull something.

Sydnee:

And its absence has obviously made a lot of noise. This was based on the fact that the evidence for flossing is actually very limited.

Justin:

Hm.

Sydnee:

So what they do when they're trying to figure out if something is actually beneficial, they can take a lot of different studies of it and do something called a meta-analysis.

Meaning they were going to take all of these studies and put them together and kind of come up with a consensus from them. Okay?

Justin:

Mm-hmm.

Sydnee:

That makes sense?

Justin:

Okay.

Sydnee:

So they took a bunch of different studies on flossing... and they couldn't find evidence, based on putting all these studies together, that flossing conclusively prevents tooth decay.

They did initially, a few years ago they did a meta-analysis, and suggested that maybe it decreases inflammation of the gums somewhat.

Justin:

Mm-hmm.

Sydnee:

But it was very difficult to tell if that was any different from just toothbrushing alone.

Justin:

Mm-hmm.

Sydnee:

And that, by the way, that was the meta-analysis they did this year. The most recent set were 25 studies that compared brushing to brushing and flossing.

And the data was weak at best. So...

Justin:

Wow.

Sydnee:

The guidelines from, the dietary guidelines for America, the basis for those has to be evidence.

They have to have evidence that says, "These things we're telling you to do, we have done the studies and they prove that they're good."

Justin:

Right.

Sydnee:

So what they basically said was, "Listen, we don't have the evidence, we can't keep making this recommendation."

That doesn't mean that it's not possible that flossing does help, it just means that so far—

Justin:

We need... We need a—

Sydnee:

... we haven't proven it.

Justin:

...closer look.

Sydnee:

Now, the American Dental Association and the American Academy of Periodontology, for specialists in gum disease and implants have both said,

"Listen, there're plenty of studies out there that maybe they weren't in this meta-analysis, but they do show that flossing prevents the buildup of plaque.

"It prevents gum inflammation, it prevents gingivitis, and yes it does prevent tooth decay."

So, like I said, the American Dental Association took great exception to this and said, "No, no, no, this is not... This is not right. There is enough evidence out there."

But, as of now, the big conclusion is that we cannot tell you that flossing can really prevent tooth decay."

Justin:

So what should I do?

Sydnee:

I would say keep brushing and flossing. 'Cause the thing is... it's not gonna hurt, and someday we may do enough studies. We may do the big, strong study that will show that flossing does help.

And even if doesn't... I mean, it's gross to have food between your teeth.
[laughs]

Justin:

Yeah, that's a good point. But, like, even if they did... I don't know the way science works, but it seems to me that if they haven't found any conclusive proof that it helps, even if it does help, that it can't be that much, right?

Sydnee:

Well... yes.

Justin:

Yeah? All right.

Sydnee:

Here's what I would do with this information. If you are someone who flosses, don't stop.

Justin:

Don't stop.

Sydnee:

Don't stop. If you are someone who occasionally flosses, I would just keep occasionally flossing, when you remember to.

Justin:

[laughing] Yeah, it's worked for you so far.

Sydnee:

If you're someone who adamantly doesn't floss and was never going to floss and just needed something to argue with your friends that you were right and they were wrong... there you go.

Justin:

Folks, thank you so much for listening to our show, we hope you've had fun.

We got a lot more for you at SawbonesShow.com or search for us on iTunes, leave us a review, a rating and recommend this show to some other folks.

That's the only way that we sort of have to spread the word about it. So we're so appreciative of whenever you get a chance to do that.

We have a P.O. box, it's P.O. Box 54, Huntington, West Virginia, 25706.

I want to say a few quick thank yous to some stuff that folks have sent. Thanks to Corey for the Civil War book, thanks to Andy for the romance novel, Sarah for her Caduceus book.

That's a beautiful piece. Sarah runs a shop called Measure Twice, Fold Once, and she has carved... I guess folded?

Sydnee:

Like cut—

Justin:

Or folded and cut—

Sydnee:

... and folded.

Justin:

... a design into the spine.

Sydnee:

Yeah, a Caduceus into the book. Like—

Justin:

Not in the spine, the other—

Sydnee:

No, not the spine, like the pages. The edge of the pages.

Justin:

And she hasn't actually damaged the text. So it's not like disrespectful but—

Sydnee:

No, it's gorgeous though. And it's a nice centerpiece on our bookshelf.

Justin:

Seek it out. Bryan sent us a book he wrote. We got a wonderful letter from Peter Finch, so thank you for that. A card from John. We got postcards from Kevin, Meghan and Nick.

Alyssa sent us some beautiful Pokémon drawings and Allison sent us some adagio teas. So thank you to everybody who did that and we sure appreciate it.

Thanks to everybody who was at MaxFunCon East who was so nice to us.

And to the young lady who had sent us the book that mentioned it to me. Thank you again for sending that. And thanks to everybody.

This has been a lot of fun. And we love you very much. Sorry we missed last week. That was a...

Sydnee:

We will try our best-

Justin:

Yeah.

Sydnee:

...not to do it again.

Justin:

So, hang in there with us. But until next week, 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]

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