

Sawbones Ep 017: Immortality

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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:

[Dracula voice] Hello, everybody, and welcome to *Sawbones: A Marital Tour of Misguided Medicine*. I am your host Justin McElroy.

Sydnee:

I'm Sydnee... McElroy...

Justin:

Welcome, Sydnee.

Sydnee:

I hate to even ask.

Justin:

Yes, go on.

Sydnee:

Um, okay, I'm going to. Here we go. Wh- Why, why are you talking like that, Justin?

Justin:

Syd- Sydnee, I have become vampir. I am now vampir. A child of the night.

Sydnee:

You're, you're a vampire now?

Justin:

I am vampir, please.

Sydnee:

[laughs]

Justin:

In the tongue of my people, vampir.

Sydnee:

[laughs] In the, in the tongue of, in vampire language?

Justin:

In vam-

Sydnee:

What language is that that vampires speak?

Justin:

Vam- It's actually vampore language, it's very g- vampore language, I am vampire. This is true, it's very confu- ... Our favorite basketball player is Bill Vlaimbeer, you're probably wondering. Uh, of ... I'm a vampir. I'm, I'm a vampir now. Vampire.

Sydnee:

Right. So vampires, their language is derived from the count on Sesame Street? Is that ...

Justin:

That is a racist stereotype. I am a true vampir, a nice guy at the park bit me. And he said I would have life eternal in the dark shadow of the moon of Dracula.

Sydnee:

Are you like, are you like Blade? Like, 'cause I saw you earlier today in the, like in the light.

Justin:

That was before the tr- before the transformation.

Sydnee:

Like, outside.

Justin:

Yes, I, those were ... I prefer not to think of those fragile days. Now that I am a child of the night, vampir.

Sydnee:

Are you gonna bite me?

Justin:

No, you are safe unless you want my gift of life eternal.

Sydnee:

Nah, I'm good.

Justin:

Do you know some other way of obtaining this eternal obsession?

Sydnee:

I do, and I'd be happy to share it with you under one condition. Oh, I'm sorry, one, one condition. Ah, ah, ah, ah.

Justin:

Anything, my dear. You must only ask it, and it shall be yours.

Sydnee:

Okay, you can't talk like that anymore. [laughs]

Justin:

That is the one thing I cannot do.

Sydnee:

You have to stop, legally, you have to stop.

Justin:

I will make a grave effort for you.

Sydnee:

It's a, it's a copyright infringement I think.

Justin:

It's Halloween, now, which is vampire Hanukkah. And so, I will grant this one gift to you, my flesh bride.

Sydnee:

Yeah, I think it's a Van Helsing copyright infringement to talk like that.
[laughs]

Justin:

This is perhaps, true. [normally] Sydnee, uh, tell me about immortality, apparently, uh, some of you are still going after it. You don't have to give to the vampir, child of the night. Uh, maybe you, you know some other ways that we've, we've tried for.

Sydnee:

Well, it- it's absolutely true, Justin. I think that, you know, this is, it's, it's not quite a medical topic. Maybe it is medical. But it's really the heart of medicine, right? Like, we came up with the idea of trying to make people better so that they wouldn't die, really. And so, it makes sense that there would be an underlying pursuit to just kinda stop that altogether.

Justin:

This is medicine's cheat code.

Sydnee:

Right, you're just skipping to the end.

Justin:

Right. You're putting on god mode and you're, you're uh, you're skipping all the diseases and stuff and just going straight for the, well for the obsolescence, I mean, let's call it what it is.

Sydnee:

And to be fair, I, I want to talk about immortality, but you have to kinda talk about like, anti-aging science, um, and that kind of thing as well because, I, you know, at the, at the same time as there are many people even today who are still seeking a way to allow humans to live forever, um, there's also the realization that as of yet, we haven't achieved that goal. [laughs]

Justin:

Right. We haven't gotten there yet, which is easily provable.

Sydnee:

As far as we know.

Justin:

Well, right. Or perhaps we did have the answer at one point, and it was lost in the annals of history. Another possibility.

Sydnee:

So, wait, wait, wait. We did have the answer and it was lost, but that would mean that like, there's somebody walking around who's been alive for like a really long time, and just didn't tell anybody.

Justin:

Yes, his name is Ross Perot.

Sydnee:

That was your Ross Perot joke? [laughs]

Justin:

Perot eternal.

Sydnee:

So that was, I think that was really good right for the target demographic that we're aiming for.

Justin:

Sure.

Sydnee:

That, that Ross Perot jokes are really gonna hit home with them.

Justin:

Yeah, I think that the time is ripe for-

Sydnee:

The 18 to 25-year-olds are all about Ross Perot.

Justin:

Is that fool still alive?

Sydnee:

I don't know.

Justin:

Yeah. Sue me, Ross Perot. Come for me, come at me, bro.

Sydnee:

You're not old enough to have voted for Ross Perot, right?

Justin:

No. No. I was not-

Sydnee:

Are you sure?

Justin:

I, as far as I know, I have not voted for Ross Perot. I have a shoddy record, from my younger years, but-

Sydnee:

I know, I, I know. I know how you are with third party candidates.

Justin:

[laughs] Sydnee, tell me about it. Immortality. I'm ready. The table is set.

Sydnee:

So, so let's talk about like, from the scientific standpoint, there is- there are sciences of, I don't want to say immortality, but like the idea of extending life indefinitely. So, for some longer period of time than we already live. There's life extension science, there's anti-aging science. Um, Gerontology, or biomedical gerontology, or experimental gerontology are really what we're talking about. Gerontology is kind of like the study of, of aging and all the things that come with aging.

And, and then we're, we're kind of veering into the realm of the unknown with like, experimental gerontology. Um, you know, the whole idea for this is based on that, there is, in a sense, immortality in nature.

Justin:

Really? Rock, well rocks. Rocks?

Sydnee:

Do ... Honey ...

Justin:

Yeah.

Sydnee:

Do you think rocks are alive?

Justin:

Uh, okay that was a misguided point. Why don't you say the thing you were gonna say, and maybe that'll be different than rocks.

Sydnee:

[laughs] I was gonna say the immortal jellyfish.

Justin:

Oh, right. Right.

Sydnee:

Did you know that there's an immortal jellyfish?

Justin:

Is it rock shaped?

Sydnee:

I guess jellyfish kinda look like rocks with legs.

Justin:

They're like gooshy rocks.

Sydnee:

Gushy, translucent rocks with legs.

Justin:

Basically, for short.

Sydnee:

Science show.

Justin:

Scientists say, scientists agree, jellyfish are gooshy rocks with legs. There's an immortal jellyfish?

Sydnee:

Turritopsis nutri- nutriculo. It, um, so I guess one of the, like, immature phases of a jellyfish maturity, I don't know, growth? Is a polyp stage. And this jellyfish can continually return back to the polyp stage and then become a jellyfish stage over and over and over again. A, uh, sensibly forever. I mean, of course it's not immune to like, disease or injury, but it doesn't age, just regenerates forever.

Justin:

Hm.

Sydnee:

There are also some planaria worms that can do this kind of thing. And um, hydra and bristle comb pines, so you've probably seen a pine tree.

Justin:

I have.

Sydnee:

Maybe you're familiar with that. These are creatures that, while again, susceptible to, I mean, if you cut down that tree it's not gonna live forever. But they don't age. Their cells don't age in the traditional way that we think about it. Think about ours.

Justin:

Hm.

Sydnee:

And on a larger sense, like, bacterial colonies would represent this as well, but then we're getting into multiple organisms, so not quite the same thing.

Justin:

So, how do we start chasing it, Syd?

Sydnee:

So, as far back as the ancient Greeks, that's where everything starts, right?

Justin:

They all, yeah. they start trying to figure things out.

Sydnee:

Those Greeks.

Justin:

They, they didn't really get much right. But they at least got the ball rolling.

Sydnee:

Yeah, they were thinking a lot. It must've been a pretty awesome place, 'cause they had a lot of time to sit and think about stuff.

Justin:

Mm-hmm [affirmative].

Sydnee:

So the philosopher Empedocles, um, came you know, we, we already had the idea that we were made of the four humors, right? Blood, phlegm, black bile, yellow bile. You remember that.

Justin:

Mm-hmm [affirmative].

Sydnee:

We've mentioned that before. Well, he kinda thought that these were based on the four elements. Earth, air, fire, water. And that we're all kind of made out of different balances of these four elements. So, like, for instance, examples I've found is that a flower has a little more wind. And an ox has a little more fire.

Justin:

Sure. Right. That doesn't sound made up, old timey d- dudes. Don't worry. Your secret's safe with me.

Sydnee:

You can see why you would think an ox has more fire. Right?

Justin:

Right, because he's so, is irritable.

Sydnee:

I, probably.

Justin:

He hates red.

Sydnee:

Hey.

Justin:

There you go. That's a bull. Yeah, well.

Sydnee:

That's not an ox.

Justin:

Bulls are oxes. Oxen?

Sydnee:

No, I'm pretty sure they're not.

Justin:

Ah, we'll never know.

Sydnee:

[laughs] No, somebody's gonna tell us.

Justin:

In lost history.

Sydnee:

Um, the aging process was thought to result from an imbalance of these four elements. So, the reason you needed to keep them in balance is that there are two opposing forces in the universe. I kinda like this idea. Love and strife.

Justin:

Hm.

Sydnee:

Keeping your elements, your humors in balance will keep you closer to the love side, and you live longer. Um, the close- the less balance between those four humors, the closer you are to strife, and then you die. You age, and you die. Um, which is interesting because if you think about it, they

were kinda hitting on entropy. You know? The idea that things fall apart, everything leads to disorder.

Justin:

Wow, old dudes you almost got one.

Sydnee:

Yeah, well a lot of the things, you don't give them enough credit. A lot of the things they're saying are kind of right, just for all the wrong reasons.

Justin:

Okay.

Sydnee:

It's like an ends just- ends justify the means, kind of thing.

Justin:

That didn't keep me out of traffic court, but I guess we can extend that to the, to the ancient Greeks. Why not?

Sydnee:

Except for the ox and the fire thing, I don't know-

Justin:

Yeah, that was a little much.

Sydnee:

Um, generally, as we look to like, the history of anti-aging and longevity medicine, and, and immortality, from like the 16th, to the 18th century, all efforts were made at like, preserving life in the older ages as long as possible. Right? So like, you would get to like, your 50s or your 60s or whatever. Older even. And then be able to stay there.

Justin:

Well, I, I think that's two prong, mainly because you don't believe that you'll die until that point. Up- up until then, you're pretty sure the death thing is gonna pass you by entirely.

Sydnee:

Well, that's true, I'm never gonna die.

Justin:

No, me neither. No, I'm gonna die. I'm 32, I've accepted it. You just wait. Give it a couple years. You'll find out-

Sydnee:

No, you're a vampir now.

Justin:

I am vampir, it's true.

Sydnee:

That which sustains may- no-

Justin:

Longer sustains me. Right.

Sydnee:

There you go. Yeah. So, they, uh, were, were ... They valued old age. They thought that your golden years were, um, an enviable period of life. Like, that was the time when you were smarter, and you'd experienced a lot. And they actually, um, saw like, your decrease in, uh, in sexual desire as a positive thing, because then you could like, focus on logic. [laughs]

Justin:

You could focus on pretending oxes have fire in them.

Sydnee:

[laughs] You can think a lot more, 'cause you don't want to do it.

Justin:

Sure. Okay.

Sydnee:

So, they, you know, that was the goal was, how can we get people to get-real old, and then stay real old for longer?

Justin:

[laughs] Preserving our most valuable resource, the olds.

Sydnee:

Which is, um, echoed in uh, Luigi Cornaro's book, *The Art of Living Long* written in 1550, basically said something that you can probably still apply

today. Just all things in moderation. If you do that, you could ostensibly live forever, or well at least until 98. That's how long he lived.

Justin:

That's a good run for that time.

Sydnee:

Yeah. It really is. It really is. And he, he actually, um, he came up with this theory when he was 35, and he was not in good health. He was, he was very ill. And he said, "You know what, there's gotta be a way to maintain your vital energy." That was kinda the, the concept was that, uh, you need this energy, this force to make you grow. You know, when you're a kid like, it's the energy that makes you get taller and bigger, and age. And that you need to hold on to that and the longer you can hold on to that and control it, the longer you live. When you lose it, you get old and you die.

Justin:

Well, that ... Okay. That makes sense.

Sydnee:

Well, it doesn't, but ...

Justin:

[laughs]

Sydnee:

I mean, it has nothing to do with why you, why you die. But he thought it did. And he thought that you could maintain it with diet, exercise, and just don't indulge in things. You know? Don't drink too much, don't eat too much. Um, get a decent amount of sleep, and I mean, things that we tell people today. And he lived until he was 98 doing that.

Justin:

Not bad. Not bad, Wigi.

Sydnee:

But a- but again, his focus was, you know, he was happy to be 98. He was happy to be 97, and 96. He had no desire to turn back the clock and feel like he was 35 again.

Justin:

Uh, yeah but it was, everything was boring 'cause he didn't do anything fun. Not that there was anything good to eat back then. They didn't have anything. They didn't have super donuts.

Sydnee:

I don't know. His name was Luigi. I believe that I read he lived in Italy. If, if I didn't read that I'm gonna say it's a fair guess.

Justin:

Yeah.

Sydnee:

There's some good stuff to eat there.

Justin:

I, I ... In the 1500s though? I'm not so sure. I think it was all just leaves.

Sydnee:

I think past- this is not the history of food, but I'm guessing pasta was around.

Justin:

We'll never know.

Sydnee:

Again, somebody's gonna tell us. [laughs] Um, the, this is in comparison to later efforts against, uh, aging in the 19th century and then beyond where it wasn't enough just to live forever.

Justin:

They wanted to get young. They wanted to get fit. They wanted to get like Bieber.

Sydnee:

Yes. That was the quest for Bieber is what this age is called. [laughs]

Justin:

That's prescient of them, if you think about it.

Sydnee:

The Bieber quest era, when it wa- again-

Justin:

"We keep saying this, uh, quest for Bieber, what does that, what does that mean? Why do we keep saying that to each other?"

Sydnee:

"I don't know, I thought, I thought you knew."

Justin:

"No, I had no idea. Darryl said, uh, we should call it the quest for Bieber, and I said, 'Sure, why not?'"

Sydnee:

"That's so weird, I heard it from Steve."

Justin:

"Okay, there's something up."

Sydnee:

Uh, so yeah, it wasn't enough just to live forever, we wanted to be young forever. And then we started trying to, um, turn back the clock. You know, how can we make ourselves, uh, not just still alive, but young? Uh, because this is the same time when we start to link the concept of aging and disease.

Justin:

Okay. Okay. So, we see a lot of our treasured old people getting like, al-Alzheimer's, for example.

Sydnee:

Sure.

Justin:

They wouldn't have known that, what that was called.

Sydnee:

Uh-huh [affirmative].

Justin:

Old people diseases. Rotting flesh, and that kind of thing.

Sydnee:

Right, well and I mean, you know, um, at the time we wouldn't have understood very well cancer. But cancer is certainly a disease we associate more with elderly people. I mean, it can certainly happen to younger people. But um, we knew enough to know that there was something happening to people as they get older that probably doesn't happen to you when you're 10. And so, you know, whatever makes us get old, also makes us get sick, maybe.

Justin:

Hm.

Sydnee:

And you know, I know this sounds like really obvious now, but it wasn't at the time. And so, the idea that, uh, you know, if we c- it wasn't just a loss of energy that was the problem. There are also changes in our body, uh, that make us age, and then that make disease inevitable. So, it's not long, you know, you can't just stay alive forever, because the aging process itself is what we've gotta fight. Does that make sense?

Justin:

Right. Right. If you get too, I mean, you're ... With each year that you manage to stay alive you're actually increasing your chances that something ... [laughs] I mean, it seems self-evident, but you're increasing your chances that something will kill you.

Sydnee:

Exactly. No, and- and that was not a known concept up to that point. You know, the idea was that there was no difference in your health when you were 98 or when you were, you know, 28. But then we realized we were wrong.

Justin:

That seems unlike- I mean, honestly seems obvious to me. I don't know. I, I'm in the 21st century. You know, everything's so easy now. I didn't have to figure this stuff out for myself.

Sydnee:

Well it does, and it really, it, as you read about this, a lot of people have talked about how, um, these efforts echo a changing attitude towards, um, the, those years of our, our golden years towards the elderly and towards becoming the elderly ourselves, um, it was- there was a long time where it was a, you know, it was a mark of your, uh, wisdom and your, uh life experience, and you know, to- to be elderly, people wanted to be around

you. They wanted to learn from you. They wanted to, to know what you knew. And then there was this shift where we suddenly didn't, you know, value our elderly population as much.

Justin:

Just because we started associating them with disease?

Sydnee:

Yeah, well a lot of it has to do with that. We thought, oh okay, when people get older, they can't think as well, and they can't, they're not as strong. They can't do as many things. So, they're not as useful. And we need to fight that. Um, and it wasn't, this is not purely, this was not worldwide, I should say. Yes, efforts to extend life have been, they span the world. But uh, this is a largely western perspective.

Justin:

Well, wouldn't it also make sense that we were, that we had, uh, we were slower on the uptake just because we didn't have as many, a wider range of subjects because people died- did ... So many people didn't make it to their elderly years, right? Does that make sense?

Sydnee:

Well, absolute- yeah. Yeah. And, and it makes sense that part of these, the uh, evolution of these ideas echoes the extended lifespan of people. You know? People are living longer and longer as we move closer to the current time.

Justin:

Mm-hmm [affirmative].

Sydnee:

And so we're seeing more of these diseases.

Justin:

That makes sense.

Sydnee:

Yeah. I- if you look at a time when the, you know, most likely cause of death was infection or trauma, you know, back before antibiotics, and safety precautions, and if we look at times of war, and exploration, then you wouldn't worry so much about getting old because, heck if you, if you lived long enough to get old, it was a good thing.

Justin:

Yeah.

Sydnee:

Um, but then as society becomes more industrialized, and people began to, you know, be more civilized, then it changes. So, people began to, um, come up with different methods of try- ... Oh. Uh-oh.

Justin:

What's wrong.

Sydnee:

I'm, hold on honey, I'm getting paged.

Justin:

Oh, uh, sure, go ahead. We'll-

Sydnee:

Oh. Okay, I gotta take this. Okay? I'll be right back.

Justin:

Yeah, we'll wait.

Erin:

Brian, my cohost, how would you describe *Throwing Shade*, the podcast that we do?

Brian:

Well, Erin, my cohost, I would say that we take lady issues, and gay issues and treat them with much less respect than they deserve, because let's be honest, we really don't have very much respect for each other.

Erin:

We don't respect anything. I don't, I'm not even wearing pants.

Brian:

No, I'm very ashamed of your body. And mine.

Justin:

Hey, ev- everything, everything okay?

Sydnee:

Yeah, yeah, it's, it's under control now. Um, one point of fact, I, I would uh, you know those, um, those plastic spoons that come with like, um, fast food meals?

Justin:

Mm-hmm [affirmative].

Sydnee:

I'd just stay away from those. Just don't use those if you get, just throw them away, or, better yet, leave them in the bag. Just don't touch them. Just for the next two or three weeks.

Justin:

So where were you?

Sydnee:

Uh, I was gonna tell you about the late 19th century French, um, doctor Charles-Edouard Brown-Sequard.

Justin:

Tell me.

Sydnee:

So, uh, in order to fight aging, and to increase, not just your lifespan, but your kind of vitality to, you know, return to a sense of youth, he advised that we crush animal testicles into some kind of powder, or you know, concoction and inject it into yourself, uh, based on the idea that, you know, as you get old your sexual desire declines, and so this could reverse it.

Justin:

Uh, how did he, how did he study, how did he learn about the- these things?

Sydnee:

Uh, he just injected them into himself.

Justin:

Perfect. Fantastic. Well, I mean, who else is gonna volunteer?

Sydnee:

I do like that spirit. That can-do-

Justin:

Sure. I like that.

Sydnee:

Yeah.

Justin:

That, it's a very sort of Bruce Banner, Dr. Jekyll thing. I'm into it.

Sydnee:

There was actually a product that, um, came out of this called spermine [laughs] I bet you can't guess what's in that.

Justin:

I'm gonna say semen.

Sydnee:

That's right. [laughs] So, it was a product made of calf's heart, calf's liver, semen, and then the surfaces of, of different organs. Like, I'm guessing animal testicles and stuff that were kept in alcohol. And they would like, take cells from that. And then you could inject it and it would return your vigor of youth.

Justin:

Okay.

Sydnee:

So, it didn't.

Justin:

Yeah, well no yes. I mean, it's calf semen.

Sydnee:

But the ... [laughs]

Justin:

I'm not scien-

Sydnee:

You don't know. It could have-

Justin:

I'm no scientist, Sydnee.

Sydnee:

It could have been semen from any animal, really.

Justin:

Okay, that's true.

Sydnee:

Uh, this, this kinda sparked this whole concept of, um, like the sexual organs, and um, sexual hormones as a way to reinstate youth. And so, uh, in 1917, Fra- Frank Lidstone started transplanting testicles into people. Probably animal testicles at the time. Including himself. Um, he claimed it fixed his gray hair.

Justin:

[laughs]

Sydnee:

So you would take the testicles of a younger person or animal and put them in yourself. Um, I think-

Justin:

A younger dead person?

Sydnee:

I say person, because in 1919, LL Stanley began transplanting, uh, he worked with a prison population.

Justin:

Oh god.

Sydnee:

And so, when young prisoners would die, he would take out their testicles and plant them in older prisoners.

Justin:

That's ter- not only are, do you have dead people balls, it's dead criminal balls.

Sydnee:

He, and he kinda, as far as I could tell from my reading, he really like, wreaked havit- havoc on this prison population. Like, they just kinda let him do whatever he wanted.

Justin:

"Doc, doc I'm not feeling so good."

"Well, son have you made peace with all those you did, did crime against?"

"Yeah, doc it's not that it's just, um ... Ooh, doc could you cremate me, like, definitely, definitely, definitely cremate me for sure? Absolutely, definitely cremate me?"

"You don't, uh, look that bad."

"No, I'm not gonna wait to die. Like, if you could just double make sure and go ahead and cremate me now, that would be super great. Thanks, so much doc."

Sydnee:

"I just don't want one of my balls to end up in Old Joe."

Justin:

"Just don't want my balls to be in Joe. That doesn't seem so bad for my final request."

Sydnee:

Now, obviously all the doctors at the time didn't have access to people that they could experiment on. So, uh, there were other doctors who were using like, baboon testicles and traveling the country and putting baboon testicles in people.

Justin:

Well, I bet they were, they were sure jealous of that guy that had that, that stash of young balls. [laughs]

Sydnee:

[laughs] Uh, I mentioned-

Justin:

Young criminal balls.

Sydnee:

[laughs] That's my favorite indie band.

Justin:

"That's a sweet gig. That's a squee- sweet gig you got there, man."

Sydnee:

Uh, there was, uh, John Brinkley, which we, we mentioned him in patent meds. I, I don't remember, he made some kind of wacky med. But he also, um, got in on this uh, testicle transplanting debacle. Uh, he went to, I thought this was great, to the Eclectic Medical University.

Justin:

It's really called that?

Sydnee:

Yep. The Eclectic Medical University in Kansas for three months.

Justin:

Seems legit.

Sydnee:

Three months. Then he opened a hospital and started doing goat testicle transplants. He made so much money, I mean, that was the thing, people were charging a lot of money for these transplants, that he ended up buying a radio station that he could use to like, challenge traditional medicine and, and preach his gospel of, well literally his gospel 'cause he was also kind of a, a religious, um ...

Justin:

Oh, well that's, that's-

Sydnee:

Fanatic. But-

Justin:

That's completely surprising to me.

Sydnee:

[laughs] Uh, in 1930 he was drummed out of practice, so he just moved to Mexico and kept doing the same thing.

Justin:

Great.

Sydnee:

Uh, there was also a procedure invented, um, Dr. Steineck called, uh, vasoligation, where you would take the vas deferens where all the, the semen comes out of the penis, and rerouted it back into the body.

Justin:

Nope. No thank you.

Sydnee:

So that you could keep your vigor.

Justin:

Now my pancreas is pregnant.

Sydnee:

[laughs]

Justin:

Now listen, I'm no scientist.

Sydnee:

That's not how that works. And they did similar things in women. Transplanting ovaries, uh, from younger women into older women. Um, doing injections of various hormones. And uh, and then even radiation [crosstalk 00:25:43]

Justin:

It is really interesting, isn't it, that the, that ... And interesting and not surprising, considering sort of what we've learned so far that the history of hunting for immortality is really the history, at least until the modern era of men hunting for immortality for men, right?

Sydnee:

Absolutely. Well, and a lot of it, I think, predictably, centers around trying to regain your sexual vigor.

Justin:

Although, you know, to be fair, if my husband had goat balls, I probably wouldn't want to live forever, either.

Sydnee:

[laughs] Please tell me you'll never get goat balls.

Justin:

That's my promise to you, Sydnee. It was in our vows, don't you remember?

Sydnee:

I don't, but I'm gonna watch the tape.

Justin:

Watch the tape. Review it. Review the tape.

Sydnee:

Uh, there are a lot of, as we move on through the 1900s, there were a lot of, um, ideas that a lot of them are just tossed around in theory. Um, nothing is done to try to explore them. And some of them you- you've seen probably in sci-fi, like, nanotechnology, um, cryogenics, which really isn't immortality because you're dead when you're cryogenically frozen, it's just that, hopefully we'll be, you know, when we figure out how to cure death, then we'll bring you back to life. Um, cybernetics. So, cylons-

Justin:

Sure. Cylons.

Sydnee:

That's what cybernetics is the study of cylons.

Justin:

Right.

Sydnee:

Right. That's definitely true. And then like, a mind to computer uploading. So, if you can't keep the body alive, at least we can put your mind in a computer and keep that alive forever.

Justin:

Yes. Do that with me.

Sydnee:

Well, if I figure it out.

Justin:

If you figure it out, let me know, 'cause I want to be in a computer.

Sydnee:

You mainly exist on the internet anyway, right?

Justin:

I'm basically just a computer already.

Sydnee:

[laughs] And of course the, you know, the other things that we really don't talk about, but um, can be echoed in like the religious pursuits like the philosopher's stone. Or uh-

Justin:

Oh, sweet.

Sydnee:

The fountain of youth.

Justin:

Oh, okay.

Sydnee:

You know.

Justin:

You don't mean the *Harry Potter* philosopher's stone.

Sydnee:

I don't mean the *Harry Potter* philosopher's stone.

Justin:

Ah, right.

Sydnee:

There were, there were certain sects of uh, yogies who seek, um, immortality through different practices. And Rastafarians actually-

Justin:

And Syd, I heard there are other types of yogis that seek picnic baskets, is that accurate?

Sydnee:

Only when they have Boo Boo. Uh, the, the Aghoris of India actually consume human flesh in pursuit of immortality.

Justin:

Hm, I'm not sure that's worth it.

Sydnee:

Now, they only consume dead human flesh, and people who in advance, agreed to be consumed, so that's good.

Justin:

I want to meet that guy. Uh, of all the ways I want my body to be remembered ...

Sydnee:

I definitely want you to eat it.

Justin:

"Bury me in a nice bechamel."

Sydnee:

[laughs] "And then your tummy."

Justin:

"And then your tummy."

Sydnee:

Throughout like, the early 1900s, the 20s and 30s there was a lot of concern for what are we gonna do with our elderly population, uh, as people are living longer, and this drove a lot more um, anti-aging research because the, again, the idea was like, "Well, we can't let people get old because then they can't work anymore, and we're not gonna be able to support them." And, and you still hear this by the way, echoed today, 'cause what is one of our biggest concerns, that all the baby boomers are gonna go on-

Justin:

Medi- uh yeah.

Sydnee:

Medicare.

Justin:

Medicare?

Sydnee:

And we're not gonna be able to afford it. This is the same thing they were talking about in the 20s and 30s. They actually made up statistics to say that 60% of people who were living in poor houses were elderly. That was never true.

Justin:

Hm.

Sydnee:

Totally made up. But it drove a lot of anti-aging research. We started understanding why aging takes place, why cells have a, like a fixed lifespan. And they die, you know, cells die eventually. They can only divide so many times then they die. And you can't keep them alive eternally. Um, we started coming up with diets and supplements that might fight that, so and I mean, you still see this today. Zinc, or selenium, or eating right or antioxidants. Herbal things.

Justin:

Anything. We're desperate.

Sydnee:

Anything. You know, and there are surgeries. You know, cosmetic surgeries, facelifts, Botox, you know, whatever, whatever we can do to keep people looking younger and feeling younger longer. In the 1990s this, uh, led to the establishment of the American Academy of Anti-age Medicine. Or A four, A4M. And they say Afrim, I believe is how they pronounce it. But the ideas is that they're gonna cure old age.

And that's kinda the, um, there are many people who would argue now that, um, our acceptance that we age and die is wrong, and that we should continue to fight it. Uh, the most recent efforts on that have been like, have been pushing like, human growth hormone as an anti-aging supplement and a way to live forever. Uh, the, there's not good evidence for this. I wouldn't do that. And uh, again they're using the same tactics as we've said before, that we can't support all these elderly, so we have to fix it.

Justin:

I'm like, I'm pretty sure that nothing will come of that. But I feel sort of glad that there is a segment of the population that has their minds on this. Even if it's not our best minds, our best and brightest.

Sydnee:

[laughs]

Justin:

I'm glad that there are some people thinking about it, 'cause if there's an answer, I mean, I would like to crack it. But ...

Sydnee:

Well, you're not alone in that perspective, because um, Aubrey De Grey is a name that you may have heard of.

Justin:

No.

Sydnee:

He set up the Strategies for Engineered Negligible Senescence, which is now the SENS research foundation. He- it's still working today. Um, their budget's pretty big. And uh, he's, basically the idea is they want, they think there are seven causes of aging, they have a proposed plan for each one of them. And they're going to cure aging and then essentially provide immortality. He believes that there is someone alive today who's gonna live to be 1000.

Justin:

Hm. That's crazy.

Sydnee:

Well, his ideas, when challenged, e- eventually the scientific community has said they merit at least looking into.

Justin:

Okay. Well, let's look into that.

Sydnee:

So we don't think he's found anything reasonable yet, but we think that he at least merits consideration.

Justin:

Maybe he knows the way to something reasonable.

Sydnee:

The only thing I will say is that I looked through his seven proposed plans, and I'm not gonna go through all the different causes of aging, 'cause they're very scientific and, and a lot of it has to do with just making medications and enzymes.

Justin:

Thank you for sparing me, dear. I appreciate it.

Sydnee:

[laughs] But one of the seven treatments that is essential to curing aging, is curing cancer.

Justin:

Okay. A little bit of a hurdle there.

Sydnee:

So that's kind of a big deal.

Justin:

Yeah. We have- we've had a few people thinking about that for a while.

Sydnee:

Yeah, I think that you could have maybe a whole foundation on that. Maybe there is one. Maybe there are many. Maybe look into that, Aubrey. Um, but I think my favorite anti-aging treatment, uh, you introduced me to, Justin.

Justin:

Ah, yeah. My guy.

Sydnee:

Alex Chu, the gentleman who has found the secret to living forever. Um, magnetic rings and foot braces are his main, uh, products.

Justin:

He makes them in his house.

Sydnee:

And you wear them. And you live forever. He also created gorgeous pill.

Justin:

No, what is gorgeous- I'm not as familiar with gorgeous pill.

Sydnee:

It's just a bunch of herbs in a pill that will make you live forever and be gorgeous. And there's also, um, the key, the chi, chi flush.

Justin:

Chi flush.

Sydnee:

There's also the chi flush, again it's like a packet of herb powder that you just dump in water and drink. Um, but he also, I think this is great. Alex Chu believes that the pinnacle of human excellence is Alicia Silverstone.

Justin:

[laughs]

Sydnee:

He wants to make us all as perfect as she is. And that he has also created a new race of superhumans with his products and he is a prophet.

Justin:

Alex Chu, ladies and gentlemen, take a bow Alex.

Sydnee:

So, wear those immortality rings. Take that gorgeous pill. Don't do those things. But they're out there.

Justin:

What are ... So, it's 2013, do we have anything concrete to go on? Do we know anything about living forever?

Sydnee:

No. Not about living forever. We definitely live longer than we used to. Um, there are a lot of reasons for that. We've decreased, I mean, you know, through modern medicine we've decreased, uh, infant mortality a great deal. And you know, young people dying of preventable diseases, and through antibiotics and the, our ways to manage trauma and accidents have changed things a lot. Um, certainly we're still looking. There's some kind of compound resver- resveratrol, which is under investigation that we derived from, again from like hydras, or worms or something that live really long.

Justin:

Mm-hmm [affirmative].

Sydnee:

But uh, no proof for that. Right now I would advise the same things that we have, that probably our, uh, our friend Luigi back in 1550 was saying, which is, a reasonable diet, exercise regularly, uh, taking vacation? Try to limit your stress. People love to say that.

Justin:

Mm-hmm [affirmative].

Sydnee:

Uh, I guess do things like buckle up and wear your sunscreen, and you know, don't do drugs. Um ...

Justin:

And if you're approached by a guy in the park with uh, what appear to be sharp teeth, go and take it, give it a shot. Give it a whirl.

Sydnee:

Yeah, if you want to live forever, honestly the best advice I have is try to figure out how to become a vampire. I think that's, I think that's just as likely as any of the other methods we have for immortality right now.

Justin:

Uh, thank you so much to everybody who has been sharing our show, tweeting about the show, uh, it, it uh, means, means the world to us. Uh, Jameson Brewster, Glad Rags, Mariah, Dave Fletcher, Whitney Josephine, Katie, Angela Golf, Evan Clark, DA Cheney, Mia B, uh, Ruth Laverne, uh, Zamantic, Dr. Lowell lead foot. Uh, Emily Gaska, Meg, Chopped up Johnson, Devin Woods, Sarah Rich. This is so much harder to do during Halloween 'cause people make their names spooky. So, I say things like chopped up Johnson, even though I'm sure that is not that person's name.

Sydnee:

We should make our names spooky.

Justin:

What's ... I don't have a good one. Uh, and uh, thank you to those of you, uh, reviewing the show on iTunes, gosh that helps us out a whole, whole bunch. Um, and it-

Sydnee:

I read all of them, and I really appreciate it, so-

Justin:

She really does.

Sydnee:

Please take the time to review us or let you know- let us know what you think.

Justin:

Um-

Sydnee:

Unless you think mean things, don't tell me.

Justin:

Don't tell us.

Sydnee:

Just don't tell me.

Justin:

And uh-

Sydnee:

Yeah.

Justin:

Make sure to check out some of the other shows on the Maximum Fun podcast network. We've got, uh, *Jordan Jesse Go*, *Judge John Hodgman*, *Wham Bam Pow*, *One Bad Mother-*

Sydnee:

My Brother My Brother and Me.

Justin:

Risk. So many others. Go to MaximumFun.org check them totally out. That's also where you'll find us next Friday for another episode of *Sawbones*. I'm Justin McElroy.

Sydnee:

I'm Sydnee McElroy.

Justin:

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

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