

Sawbones 574: Medicine in Movies

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

["Medicines" by The Taxpayers plays]

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

Sydnee: And I'm Sydnee McElroy.

Justin: Co-host and lead researcher.

Sydnee: And this is Olive McElroy.

Justin: And this is Olive McElroy. She's not in the audio product.

Sydnee: No, but she is on my lap, and she keeps trying to lick the microphone.

Justin: We won't let her, though, because we're professionals. And cat—

Sydnee: But she's a professional kitty.

Justin: She's a professional kitty, but we're professional podcasters. Syd, I wanted to mix things up this week. I don't know why I started thinking about this a lot, but I started thinking about fake medicines in—well, I started thinking about fake medicines in SNL, because there was an SNL skit—I don't even remember what one it was, but it was about...

Sydnee: Oh, it was about the fake psoriasis med.

Justin: Oh, yeah, yeah, yeah, the fake psoriasis.

Sydnee: That was a funny one.

Justin: We were thinking about fake medicines in SNL, and that's probably one that we'll do eventually at some point, I think, because it's really funny. But I wanted to talk about some fictional medications in movies. And this is—I really wanted to focus on movies where the plot kind of hinged on, or it was an important facet, different medications. Not illnesses, not any sort of like—but specifically with medications. Just because I think that when we think about how medicines are sort of like represented in movies, I think that it can sometimes be—or anything, you know, it can tell us something about what the culture is thinking about medicine right then.

Sydnee: Mm-hm.

Justin: And also, I think it is funny when writers try to come up with medicines, and then to hear you react to that is entertaining to me, because I like to hear you bully people that aren't me.

Sydnee: Well, I just don't unders—I'm right here, and I could consult for you on whatever your project is that has to do with medicine. Like I would—

Justin: Sydnee is ready to consult for you!

Sydnee: I mean, if you called me and asked me a question, I'd answer it for free.

Justin: Yeah, but should... can we talk about that off air? Because I'd love to...

Sydnee: You don't want me to— Well, I'm just saying like I would, just for the integrity of the medical information that you're dispensing.

Justin: First up, Sydnee, is Serum 114—some of these names, by the way, are my best guesses, because some of them are just referred to as like "the drug" or whatever. But Clockwork Orange, 1971.

Sydnee: Ah, okay.

Justin: It is a—the heart of the technique—at the heart of Clockwork Orange is this idea that you can use conditioning to create an aversion to violence and other like impure thoughts. And this is a highly... an emetic, basically. A very strong emetic that it induces these like nausea and terrible symptoms when they are being shown terrible images.

Sydnee: Hm?

Justin: With the hope that they will reprogram and like connect. That's what like is sort of like at the center of Clockwork Orange.

Sydnee: Well, I don't know what... I mean, Serum 114, I'm not sure exactly what substance—

Justin: It is a high-potency intravenous emetic.

Sydnee: Certainly there is—they are drawing on references from real life. I mean, historical precedent for exactly what they're doing with that. We... unfortunately, and I think we've talked about this on the show, we used to treat people in psychiatric facilities who had proclivities that society didn't approve of.

Specifically, at that time, you know, LGBTQ individuals may be subject to something very similar. So, if you were a gay man, they may show you pictures of naked men while, you know, shocking you or giving you something that would make you violently ill, in order to associate those sorts of symptoms with looking at another naked man, and then cure your gayness. Obviously, this is all terrible and torture, and we don't do this anymore. But there's definitely precedent for that.

Justin: Mm-hm. Now, here's another one that there may be precedent for, I'd like to tell you about Ephemeral, Syd. This was developed as a sedative for use during pregnancy, not unlike Thalidomide. And it acted as a mutagen during neural development. And the one thing about it is that it did fundamentally alter the makeup of the unborn child, creating scanners. Yes, this is the plot of the movie Scanners. [chuckles] A biologically enhanced

nervous system, capable of like communicating telepathically because of this—it's basically like, what if Thalidomide gave your baby Scanner powers.

Sydnee: Yeah, I think that—[chuckles]

Justin: And they use—they continue to use this drug to like mute their—in adult stages, they continue to use the drug to like lessen their powers or dampen them, as I understand it. I have not seen Scanners. I've seen almost all of these movies, except for Scanners, so I'll have to check that out.

Sydnee: I think that there is—and I don't know timing-wise when this movie came out...

Justin: Mm-hm.

Sydnee: Relevant to specifically Thalidomide, because the concern about things that you take into your body while you may be pregnant having an impact on the developing fetus, this is obviously, you know, a going concern as soon as we realize that that could happen, that things could cross the placenta. You know, I think Thalidomide is probably the most well-known and sort of in the popular consciousness, you know, became—we all became the most aware of that possibility.

And so, it makes sense to me that that would be in the mind of people who would—you know? But I think that there is this sort of ongoing like interest, fascination, fear. And then I think a lot of it is... I don't know, I think... I think specifically when it comes to like horror that's based in like future things, awful things that humans could do, it often gets tied into like pregnancy and the way that we make—like that we create humans, you know, and engineer them. I don't know, I feel like that's a common trope in like sci-fi and horror and... you know what I mean?

Justin: I was going to try to make this next one sound normal, but I don't think I can pull it off. Do you know about the spice?

Sydnee: The spice?

Justin: Sydnee, the spice is created by the living and dying of sandworms, on the desert planet of Arrakis. And the spice is the center of Dune.

Sydnee: Oh, oh, this is a Dune thing.

Justin: So, the spice is a... it makes you live much longer, right? You live for a much longer time. But it also makes you like super smart, it gives you like ex—almost like ESP levels of... brain abilities. But it is incredibly addictive to an extent where withdrawal is fatal every time. So, there's wars over the spice. There is a side effect called the—it is a—well, there's a goofy name for it, but there—it turns your eyes blue. If you've seen people in the movies who the eyes are blue in the trailers—

Sydnee: Mm-hm.

Justin: That's because they're on—they're on the spice. And then also, that's caused by too much spice.

Sydnee: What if you just have blue eyes?

Justin: So right, so it's like, it's magic blue, more of a magical blue. If you saw it—

Sydnee: Oh?

Justin: You can tell the difference—

Sydnee: Oh, okay.

Justin: Between the eyes.

Sydnee: Okay. Man, I feel like that—like there—that's what all the like longevity, wellness—

Justin: We're all looking for the spice.

Sydnee: Manosphere.

Justin: Yeah.

Sydnee: Sort of influencers—

Justin: 100%, babe.

Sydnee: That's what—is it—is it all inspired by Dune? Is that—

Justin: God, babe, if spy—spice is nootropics, you're 100% right. That's such a good call.

Sydnee: Well, because—

Justin: Dune is basically a desert planet of people fighting over nootropics.

Sydnee: That's like, that's my nightmare. See, I've never read or seen any iteration of Dune. I have no—anything I know about Dune—

Justin: God, even the Fremen suits—

Sydnee: Is stuff you've told me about Dune—

Justin: So—

Sydnee: And now you have made me never want to engage with Dune—

Justin: Oh, you're 100% gonna engage with Dune. Like, you're gonna love Dune. Wait, now we have to watch Dune, but—

Sydnee: But see, you made me think I never should, because of the way you just described it.

Justin: Now that I'm thinking about it though, like there's another—there's these—there's people in Dune named Fremen and they were—they're like—they live in this desert planet. And they've adapted these suits that let them like keep all of their moisture, because moisture is the most valuable thing here, right? Because there's no—so they wear these special suits that keep

all their moisture in their body. And that actually reads very mansphere to me too, now that I think about it. [chuckles]

Sydnee: I does!

Justin: "You're losing two to three drops of hydration every single day!" That's the spice.

Sydnee: Ugh...

Justin: This is a... Nuke is a drug in Robocop 2. Now, this is not a medicine, this is a—I've always gotten a kick out of like super narcotics.

Sydnee: Yeah.

Justin: [laughs] You know what I mean? Like in movies. Like any drug that you take that like, yeah, man—the first—everyone's addicted to it. The first time you take it, it makes you insane and your brain explodes. It's the greatest drug. [chuckles] Let's see, it is delivered by a needleless cuff injector, into the—right into the artery, with near instant absorption into the brain—

Sydnee: Wait, but how is it needleless and it goes into the artery?

Justin: It just like—there's like a cuff. It's a cuff injector. And you—there's different variants, they have a blue velvet and red ramrod. And it is basically like a super drug that leads to a violent, manic crash. And you have to get—have it right back. That's from Robocop 2, is Nuke.

Sydnee: I spend, because of the kind of medicine I practice, I spend a lot of time talking to people who use drugs on a regular basis. And I've learned a lot about drugs, and I have to know a lot about drugs because of the work I do, it helps me take better care of people. All that being said, I think that sometimes when in like movies and stuff, when people are making up drugs, it's like no one involved in that has ever done drugs or knows about drugs, or is familiar in any way with drugs. Do you know what I mean?

Justin: Just like have never done it.

Sydnee: Yeah! Or like do you know—

Justin: Which is like Hollywood, so you know for sure, for sure they've done drugs. [chuckles]

Sydnee: Right? Like I thought, I mean, do they only know about cocaine?

Justin: Maybe, I guess?

Sydnee: I don't know. But I feel like there's this lack of understanding of like the drugs that people do and why they're addictive, and why they're hard to quit. I don't know, I just, it—that really speaks to me of like, you don't know anything about drugs, do you? If you made that up.

Justin: One that's kind of on the other end of the spectrum is Provasic, or Provahsic, I'm not sure, but it is—that's from *The Fugitive*. And the—Provasic is at the center of *The Fugitive* scandal. So, *The Fugitive*—

Sydnee: Well, and *The Fugitive* is just like a—that's not sci-fi, that's just like a movie.

Justin: Yeah, do you—can you tell the—you know the plot of *The Fugitive*, right?

Sydnee: I've never seen it, but I think that... a woman gets killed and her husband is pinned with the—like accused of the murder, but it wasn't him, it was a one-armed man?

Justin: Yes, it was—

Sydnee: And he's like looking for the one-armed man to prove that it was—

Justin: Yes.

Sydnee: Is that the plot—

Justin: Yes, the—

Sydnee: More or less?

Justin: The center of the issue was Provasic. And basically, this was a liver medicine that was marketed to people, but it should not have been approved for sale. It was very—it was actually dangerous and should not have been approved. I'm trying to find the exact—

Sydnee: Well, but what is that—who does—how?

Justin: Hold on one second. So, it was supposed—Provasic, or RDU-90, was supposed to treat coronary artery disease, but it caused severe liver toxicity. The creator, Charles Nichols, falsified the clinical trial data to hide it and get FDA approval, but he killed the people that knew about it, which included Harrison Ford's wife.

Sydnee: Right.

Justin: Who was then stuck with the crime. He was pinned with the crime. So basically, this was a—the whole movie hinged on how likely it would be—how financially beneficial it would be for someone to create this blockbuster drug, and then get it like approved by the FDA. I don't know what the long-term plan of Dr. Charles Nichols was, because it does seem like once Provasic was approved, that we would discover pretty quickly that this is a problem, this liver toxicity issue. [chuckles]

Sydnee: Well, yes, but it would take a while, because you would have to... I mean, it would take a while. If it got out into the—a lot of people were taking it, especially if it was one of those drugs that, I don't know, there's some that just hit the market and immediately everybody's on them. We're also talking about a time where like there were pharma—

There were samples in every closet, and there weren't so many restrictions on what reps could do, you know, in terms of like, I don't know, buying you fancy meals and, you know, box seats to sporting events and stuff like that. Anyway, the point is, it could have gotten out there really fast, and you could make a lot of money off it really quickly before people realized how

dangerous it was. And then if you have the right—if you have a good lawyer—

Justin: You're rich enough! [chuckles]

Sydnee: Well—

Justin: At that point you're super rich, right?

Sydnee: And if you've got a good lawyer and you have the studies that nobody knows are falsified, you probably could get away with it. I mean, it's evil and horrible, but you probably could.

Justin: Mm-hm.

Sydnee: Now, I will say, I do think like it is harder than what you just described. Like you—I'm not saying nobody could ever do that. And certainly, there have been a lot of studies that have been published through the years that we then later go, uh-oh, there was fake stuff in there.

Justin: Uh-oh.

Sydnee: That has happened. But to get to FDA approval? It would be hard. It would—I mean, the system is not so broken that this would be easy to do.

Justin: Technically it involved—the fraud part involved the manipulation of liver biopsies from phase three clinical trials. So, they really like thought through it—the pathologist falsified reports.

Sydnee: You could, I mean, you could... it just—

Justin: They falsified it.

Sydnee: You could, yeah.

Justin: But they killed the people that could have pinned it on them, basically. But they didn't count on Dr. Richard Kimball being so resourceful.

Sydnee: I feel—I feel like the deaths, all of those deaths, collective—collect—I feel like that would have been... Or like somebody would have looked at that and said, "Huh... this is weird. All these people worked on this same drug. Why do you think they're all dead?" I feel like that would have been a red flag.

Justin: I want to tell you about one of my favorites, Gleemonex.

Sydnee: But before you do that—

Justin: Oh?

Sydnee: We gotta go to the Billing Department.

Justin: Let's go!

[theme music plays]

[ad read]

[break]

Justin: Okay, Gleemonex, this is one of my favorites. This is from a movie called Kids in the Hall. Kids in the Hall is a Canadian sketch show that was also produced by Lorne Michaels, but it was like an indie sort of just five Canadian dudes doing sketch comedy. There's a lot of—it's like very... a lot of cult classic. It was sort of the I Think You Should Leave of its time.

I think that's fair to say. But they did one movie— they've done a couple movies, but they—I think they did another. But they did a movie called Brain Candy, Kids in the Hall: Brain Candy. And the center of it was a drug called Gleemonex. And the idea of Gleemonex is that you would take it and it would isolate the—your happiest memory. And then it would keep you stuck in your happiest memory.

So, once you took Gleemonex, you're in your happiest memory, but you live there. And it basically created a, what is called a flake out. So, long-term, people would become like super ineffective and basically become like brain

dead zombies, because they are stuck in their happiest day, until they became permanently non-responsive. This is a sketch comedy movie, but like this is the plot of it, is—centers on Gleemonex. [chuckles]

Sydnee: I don't know, I mean, I feel like the—that I—it reminds me a little bit of... Red Dwarf, when they get stuck in their virtual reality like heavens, basically.

Justin: It's a comment—I mean, I think the idea of escapism becoming toxic is something you see a lot in popular culture. I think it's interesting, this idea though, that it's like escaping into pharmaceuticals. Like that certainly seems to belie a certain distrust there, right? Of like medicating a way that I think is certainly—this is 1996, so I think definitely would have been at the peak of a sort of like push back against medicating anxiety, depression, that kind of thing.

Sydnee: They're definitely, I mean, I think—

Justin: This was 30 years ago.

Sydnee: Especially, yeah, mid to late '90s, you see this backlash against specifically like—I feel like Prozac was the headline of that, just because it was the oldest and most prominent. But like all the SSRIs, all the antidepressants, that instead of dealing with problems, we were medicating them away, I do not agree with that. But I feel like that was—that was definitely the height of that.

Justin: Mm-hm.

Sydnee: And there was a lot of unpopular depictions of any kind of medication like that in movies, TV. I mean, it was really, I don't know, that was a—it was a very—it was a very Gen X moment, like, "Don't take medicine for things, just deal with your problems!" Like, that is dealing with your problems, you're taking medicine. [titters]

Justin: This is a fun one, Adrenochrome. Is that a term you've ever heard, Syd? Adrenochrome? It's a real thing, but not real in the sense that we're using it.

Sydnee: Isn't that— isn't that part of the right-wing conspiracy?

Justin: Ooh, I mean, maybe.

Sydnee: [chuckles]

Justin: That may be part of it, but Adrenochrome is featured in *Fear and Loathing in Las Vegas*, a very bizarre book and film and everything, if you've never checked it out. But adrenochrome is a—in the—in the story, it's presented as a super-potent psychedelic. In actuality, it's a oxidized form of adrenaline that doesn't actually—

Sydnee: Right.

Justin: Trip you out or have any sort of like effects like that. But in the movie, you have to harvest this from living people. And it's like a super-concentrated adrenaline that you—that you can take, like once you've like reduced it. And obviously it's—that's fake, but...

Sydnee: I swear, I feel like that was part of the whole conspiracy theory of like democrats who were trafficking kids to harvest their Adrenochrome.

Justin: Maybe.

Sydnee: I swear that was like Pizzagate, and all that nonsense?

Justin: [chuckles] Maybe. I mean, maybe. It wouldn't surprise me.

Sydnee: I feel like that was named in there somewhere. Maybe I'm making that up?

Justin: No, I don't know. I mean—I mean, obviously people go for adrenaline. Is there some—and that's like a—the idea of adrenaline junkies is a huge thing. Is there a form of adrenaline you can just jam into your veins and get the same effect?

Sydnee: Yes, but I don't think people do that. Like, I am not aware of that being a... a drug of abuse. [chuckles]

Justin: Yeah.

Sydnee: Like, we don't—I mean, there's like EpiPens, there's epinephrine, but do you—I don't hear about anybody abusing EpiPens for that. I don't—I mean, if that's happening, this is not something I'm aware of. And I feel like I'll—I feel like I would be aware of it. [chuckles]

Justin: You know one that isn't technically medication, Syd, but is... because it's not real, is the blue pill and the red pill.

Sydnee: From The Matrix.

Justin: Yeah. Those are very—I think you want to talk about, again, medicine being coded, but maybe meaning something different. Like, that—1999. If you have not seen The Matrix, a man has been trapped inside a sort of digital world, and he's given a chance at freedom if he takes the red pill.

Sydnee: We're all trapped in the digital world.

Justin: We're all trapped in the digital world. But he's offered a chance of freedom if he takes the red pill. Or he can take the blue pill and forget that any of it ever happened. I don't know—I mean, obviously there is some metaphor in there about like waking up and seeing the real world around you, or going back to sleep. I think the—using medicine as like a metaphor there is really interesting--

Because like I can't imagine the Wachowskis in this era, like in 2026, would necessarily have any issues with like people taking medications for, you know, their—for mental health. And I can't imagine that was even implied. Maybe it was—or wasn't implied in this case. But definitely as the years have gone on, this has taken on the red pill and blue thing—pill has taken on like such a lot of gross political baggage as well. [chuckles]

Sydnee: Oh, yeah, well—

Justin: Maybe not Adrenochrome levels, but still. [chuckles]

Sydnee: No, but it has become, I mean, a pervasive force in popular culture, that whole concept, red pill, blue pill, and then black pill. And yeah, everything that's been derived from it.

Justin: The blue pill actually was a digital—was a program that would reset you in The Matrix to a moment before you had noticed anything was out of whack. So it was like technically not medication, it was technically programming. Whoa!

Sydnee: Whoa.

Justin: Whoa!

Sydnee: AI. [chuckles]

Justin: What? AI? [chuckles] I don't think it's AI.

Sydnee: [chuckles]

Justin: Do you—the—along a similar—Prozium is from Equilibrium. Do you know what—Equilibrium is sick. This is like 2002, we're all like in the sci-fi era.

Sydnee: No?

Justin: But this is like peak. Hold on, this is, again, an automated ejector. This is a chemical inhibitor that targets the amygdala and your other emotional centers. And it creates emotional flatlining. It keeps you emotionally flat, even, no emotions. And it is illegal to not be on it. So like, everyone has to be on it, because emotions were getting in the way.

Sydnee: [chuckles]

Justin: And so, if you get off your... you can get—what, you're laughing already? You're laughing already, Sydnee!

Sydnee: It's just pretty heavy handed there, like...

Justin: If you—

Sydnee: "In the future, emotions are illegal."

Justin: Yeah! Yeah, honey! It's Equilibrium.

Sydnee: Take your—

Justin: It kicks ass!

Sydnee: "Take your Prozium, and have no emotions. This is the future."

Justin: Can you see—Taye Diggs and Christian Bale are sword fighting in this, honey. What are you talking about?

Sydnee: Is this a future liberals want?

Justin: No.

Sydnee: Or who wants this future?

Justin: Look, John Preston—Christian Bale stars as John Preston, a law enforcement officer in a future society where emotions are outlawed and suppressed by a drug called Prozium, to prevent war. And they have Gun Kata, which is a mix of guns and kung fu. But the important thing is that you have to be on drugs—you have to be on Prozium to prevent war.

Sydnee: I think—

Justin: The sword fighting is sick! I don't know if Prozium is all that, but like the sword fighting in Equilibrium is sick. I used to—

Sydnee: It's so—

Justin: Rent it to people when I worked at Blockbuster.

Sydnee: Okay, I mean, again—

Justin: [laughs]

Sydnee: When I said like I feel like Prozac got the worst, you know, sort of like treatment in popular culture, I think that's obviously supposed to be a reference, right? Prozium?

Justin: I mean, maybe. I don't know? I'm not a political guy.

Sydnee: And I think—I think that it's—I mean, it is—there has been and is still, I think it's better now, but this sort of distaste, culturally, for managing mental health conditions the way we manage all other medical conditions. As if there's something bad about taking medicine for an illness that you have.

Justin: Do you feel a similar—do you feel similarly about *Eternal Sunshine of the Spotless Mind*? Because that is a movie that is—I think it's definitely more well done than *Equilibrium*, from an emotional perspective, not from a sword fighting perspective.

But I wonder about that one. If you don't know, *Eternal Sunshine of the Spotless Mind* is basically about—a drug is invented that will erase your bad memories and let you live as though they didn't happen. And the—it's basically, the dangers when it's stop—it doesn't work perfectly.

And so things start bleeding through, and that's what the movie is about. But I don't know, I never took it as a commentary on medication and dulling yourself, as much as I took it as like a... the importance of like dealing with the actual difficult things that happen in your life. But I don't know, I could be swayed either way.

Sydnee: Yeah, no, I don't think—I don't think it was so much—I agree with that. Because I think that's a—I mean, the idea that, what if you could make this bad thing that happened to you disappear from your mind? And you'd forget it forever.

But you'd forget all of the memories that go with it, right? Like if somebody you love died, I could make you forget that, but also, you have to forget that

that person existed, right? Or else that doesn't work. And I can make you forget all that. I don't—I feel like that's like a mythological trope, like a folklore thing.

I think that predates the idea of it being attached to medicine. Medicine is just useful, you know, in a modern context, but... I think that's a very old story. You have to accept the sadness in order to be able to keep the happiness.

Justin: Mm-hm. I gotta talk about—I'm running out of time, there's so many medicines that I want to talk about. Some of these demand their own episodes. Resident Evil has enough of a medical lineage that I would love to talk through it. Gattaca too is another one that I think could be a full episode. But I do want to talk about a few more. Somnacin is delivered—I want to show you the picture of it because it's great, you'll love it. It's delivered—

Sydnee: Does it make you sleepy?

Justin: It is this. It is the briefcase from Inception, right?

Sydnee: Oh! Oh.

Justin: So, this is called the—this is a name, I didn't know the—the Portable Automated Somnacin Intravenous Device, or PASIV—[chuckles] Thank you—thank you—who says Chris Nolan doesn't have a sense of humor? PASIV, that's great, Chris. Good job. Somnacin is delivered to you, it basically like keeps you—this is what you use to stay asleep and to like control your sleeping while you're in the dream state of inception. So, there's like—it is a—I'm letting Sydnee read like, there's medical—of course, because it's a Christopher Nolan movie, there have been a bunch of dorks—

Sydnee: "A central button—"

Justin: Outlining exactly how it works. [chuckles]

Sydnee: "Called the infusion trigger that can activate all IV lines at once—" What do you mean activate the IV line—

Justin: This is—this is on Fandom! Cut them some slack! Okay? This is someone on Fandom talking about what they remember from Inception, okay?

Sydnee: Well, no, I just mean the way the thing works. Like, so it's just an—it's like an IV?

Justin: No, it's a PASIV—

Sydnee: It's an IV.

Justin: P-A-S-I-V. It's like you're not even looking at it. It's PASIV.

Sydnee: Well, it's like an IV in a suitcase. You just like—there's the pump, and you—

Justin: If you get stuck in it with a heavy dose, the body gets separated. Your mind is separated from your body's circadian rhythm.

Sydnee: That's not—this is not a thing.

Justin: Oh, really, Sydd? Well, maybe you'd like to tell me about something else that isn't a thing? NZT-48. You know, we only use 10 % of our brains.

Sydnee: [titters]

Justin: So, what if there was a pill, Sydnee, that could increase the rate of synaptic firing and neurotransmitter production across the entire cerebral cortex?!

Sydnee: I'm glad that you're talking about the Limitless pill, because—

Justin: Yes, Sydnee, I'm talking about the Limitless pill, from the hit film Limitless!

Sydnee: We have—we've gotten—

Justin: 2011. Talk about—talk about medicine reflecting the times.

Sydnee: We have gotten a handful of emails over time at Sawbones asking if we could help explain what we're talking about when we say Limitless pill. Because what I realize is, not everyone has seen this film. Including me! I've never seen this movie, I—maybe you have? I don't know why I know about it?

Justin: Why would I see it? No.

Sydnee: I don't know, I mean—

Justin: Oh, god! No.

Sydnee: I know—I know the basic premise, I think—I think. But I've never seen it, and I realized like some of our listeners are like, "Man, they sure reference this Limitless pill thing a lot. And I don't know, is it something they made up?" So, I'm glad that you're addressing this, so that we can say no, it's from a movie, that we never saw, but we do—we do talk about a lot. Apparently.

Justin: Apparently.

Sydnee: It's not true that we only use 10 of our brain.

Justin: Are you sure about that? Because it does... feel...

Sydnee: Untrue? No, why would that be? Why would that—just think from a structural standpoint, why would that be?

Justin: I wanted to talk about ALZ-112. It is at the center of Planet of the Apes. It's a really interesting, at least I think it, from a development perspective, like a medicine development perspective, it's interesting. The idea is that—speaking very broadly, because this is a very big franchise with a lot of movies.

But the broad idea in this modern iteration is that we were working—scientists were working on a treatment for Alzheimer's, called ALZ-112. And

it worked, but it only worked in chimps like long-term, right? And I guess, if I remember correctly, and I'm—because I've seen these quite some time ago, it's been a long-running franchise. But basically, it would wear off, the effects weren't potent enough.

And the idea was developed that if you made it contagious, like more contagious, that it could like spread, like a pathogen, right? So, this is what a—so, they basically like aerosolized the thing, but it couldn't tell the difference between humans and chimps. So, humans died from it, and chimps became super smart.

Sydnee: Hm...

Justin: And that's what happened in the Planet of the Apes. Because it couldn't tell the difference.

Sydnee: That's really interesting, and again, I wonder—I mean, that's—I mean, it's an old movie—

Justin: Well, this—so, this—so, Planet of the Apes is actually two different franchises.

Sydnee: Oh?

Justin: There's the '60s franchise, that was a bunch of movies. And then—

Sydnee: And that one isn't tied to this retrovirus?

Justin: There's three different Planet of the Apes. So, there's the original series, and then there's the Tim Burton one-off, right? And then there is a—the franchise that has started again. The Tim Burton one-off is not connected, I don't think, to the others.

Sydnee: But is the—is this—this viral thing, is it part of the original?

Justin: I don't know that they went into the original—the origins of the—this is based on the—

Sydnee: Is that—

Justin: The most recent movies. I don't know if they went into the—in the original series.

Sydnee: Well, because it makes you wonder. So, we... and not as long ago as the original Planet of the Apes, but certainly by these later iterations, we were—

Justin: The later—the—I should mention also, these movies are much more about the rise of the Planet of the Apes. The original movies were about like, it's all monkeys, they're all super smart. The ship has sailed.

Sydnee: Right. No, I just, I think it's interesting because it always makes me wonder, you see these sort of like Popular Science like little stories that kind of float into mainstream media, you know into newspapers and things. I hear about 'em because that's the stuff people who aren't necessarily working in science or health care will read, and then ask me like, "Hey, did you see this? This is weird. What's this all about?"

And it makes me wonder if there wasn't some sort of story. We did at some point realize that viruses could be used as good delivery mechanisms for other treatments, medications, things like gene therapy that we were experimenting with. That a virus would be a good way, if you take out the parts that make it dangerous and infectious, but use the machinery of the virus, the way that it's able to replicate itself—

Justin: Mm-hm.

Sydnee: To like insert itself into our genetic code and then make copies of itself, that could be a useful therapy for some conditions. And so, we do experiment with that, we do use viruses in that way. That is something that we have been working on for a long time. And I could see that kind of like sort of Popular Science interest story floating into mainstream media, somebody reading it and thinking, "Man, that would be a really good plot device or explanation for."

Justin: Mm-hm.

Sydnee: "Let's go back and retrofit this onto Planet of the Apes." I mean, I could see that happening—

Justin: I mean, that's the same thing as—

Sydnee: Because that is the—

Justin: Limitless, right?

Sydnee: Yeah.

Justin: A lot of these movies are always like some movie writer half listening to somebody's story about science like, "Oh, that's good! 10% of your brain, you don't say."

Sydnee: Yeah.

Justin: The last one I want to mention real quick is Compound V, because it is at the center, very much at the center of Amazon Prime series The Boys. Which I know that you don't watch, but it is about a drug that is developed by a company called Vaught. And the idea is that if you administer this drug to kids when they're in the infant stage--

There'll be some sort of like DNA redistribution, and they will end up with some sort of superhuman traits, they will manifest superhuman abilities. But it's extremely unstable, it's like very unpredictable. Some people like reject it outright. But it is still like, it's very sought after, this Compound V is like a huge deal. But it's also like obviously extremely dangerous to everybody who uses it in the adult stages.

But that's what—that's kind of at the center of the show, is like, you know, these kids that were given these abilities like without any sort of choice in the matter, and how that like affects things. But like this idea of a super serum I think is a very old—I mean, even going back to like the super soldier serum from Captain America, it's a very old idea.

Sydnee: Well, and I think—I think that that always, for me, it's like that intersection that we have between government and the big like pharmaceutical companies and corporations, where we have that fear, you know? What if they make something and it would be advantageous, especially I think militarily is where a lot of that—

Justin: Yeah, yeah.

Sydnee: Right? Ties in. And so, that complex is going to take children and turn them into something else, for the benefit of the—of the government, of the country, and to make us superior to other nations. I think that's like all baked in there. And probably cross-cultural, right? That can't just be an American fear. I imagine that exists in a lot of places.

Justin: Yeah, I think so. There's a lot more to cover, but I think that's a pretty good survey of some of the ones from my lifetime. If you have some favorites, you can email us, sawbones@maximumfun.org. If you have any suggestions for episodes, stuff you'd like to see us cover, that would be great. Oh, thanks to The Taxpayers! For the use of their song "Medicines" as the intro and outro of our program. And thanks to you for listening. That's going to do it for us for this week. Until next time, my name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

["Medicines" by The Taxpayers plays]

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