

## **Sawbones 480: Why Don't Americans Get De-Wormed?**

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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 music 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:** And I'm excited, Syd. It's another one of my favorite episodes, medical questions.

**Sydnee:** These are your favorite?

**Justin:** I love doing these, except for some times, I mean, there have been individual ones that I have I really love doing, but these are always a hoot. And I feel like I learn a lot too.

**Sydnee:** Aw.

**Justin:** And it's nice to be able to feel like you're connecting with our listeners a little bit. It's fun.

**Sydnee:** It is fun.

**Justin:** With social media basically collapsing all around us, it's nice to hear, read the emails, you know, hear from listeners.

**Sydnee:** Yeah. No, that's a great point that was couched in some sadness there, but that was a good...

**Justin:** There's nothing sad about social media col— It's good. It's good that it's all going away. I think that it's better. Let's just all shake hands and write letters, period. That's— For those of you that don't know, that's punctuation. I learned it in school before social media ruined everything.

**Sydnee:** I also...

**Justin:** I don't necessarily feel the way I'm saying it.

**Sydnee:** I was gonna say, you're just on a whole social media thing.

**Justin:** I'm just— Some of those platforms aren't usable anymore and I'm not missing them. That's all I'm saying.

**Sydnee:** I think it's a nuanced topic and not really the purview of this show.

**Justin:** No, it's not.

**Sydnee:** Not either of our areas of expertise, really.

**Justin:** It's my area of expertise.

**Sydnee:** Meh.

**Justin:** I'm on the internet all the time.

**Sydnee:** This is a weird question episode. I love our weird question episodes too. It's close, though, if we do a really gross one, I like those. I like really grody ones.

**Justin:** I'm gonna ask you some questions and then I just off the top of your head, just spit the first answer that comes to your mind.

**Sydnee:** Okay.

**Justin:** "Hello, I have a bunch of weird medical questions about blood and

organ donation. If I donate blood, am I giving away the immunity I gained from getting vaccines? Or does my body remember everything the vaccine taught it about fighting COVID?

"I feel like even if I was giving away some of my immunity, it would still be worth it because someone sick enough to need a blood transfusion would probably still need the help. It's pretty easy to find places to donate blood, but how would someone become an organ donor for an unknown stranger?"

"I've heard that after someone donates part of their liver, the portion that was donated grows back. Does that mean that someone could be a liver donor more than once?" Wow, that's a lot.

**Sydnee:** It is a lot. I guess we could have taken them one by one, but I thought that these were all... important things to address. One, yes, you do have circulating antibodies. So when you get a vaccine, your body makes antibodies against whatever antigen, whatever piece of a virus or bacteria has been introduced into your body.

And again, it is not the actual thing that can infect you and cause illness. It can't. It's just like a piece of it. Or like the remains of it somewhat living but not living and can't cause infection. Anyway, the point is, you make antibodies in response to that, antibody specific for this invader.

And yes, if, you know, if they're in there and you took blood straight out of somebody and put it straight into somebody else, and sometimes we can do things to eliminate things like antibodies. It depends on what you need from the blood, right?

**Justin:** 'Cause sometimes we clean the blood, right?

**Sydnee:** Mm-hmm. Sometimes we just give certain pieces of the blood, right?

**Justin:** Yeah, they use a centrifuge to separate the plasma from the junk.

**Sydnee:** From the junk, from the cells?

**Justin:** Sure.

**Sydnee:** From the actual cells in there.

**Justin:** Hey, I don't know.

**Sydnee:** No, but we can process blood to remove things like antibodies, certainly. But like in a situation, which I've been in before, where blood was taken out of my body and then put directly into another person, I mean, still warm, then yeah, the antibodies that are in my blood are going into the other person who's receiving that blood. That does happen.

**Justin:** Okay.

**Sydnee:** But you got lots of them, not all the antibodies, right? I think if you're trying to come up with a theoretical situation, and also, your body also has memory cells that will remember how to make those antibodies moving forward. So—

**Justin:** Does that— So— But it wouldn't, would that, so—

**Sydnee:** You're not gonna lessen your immunity by donating blood.

**Justin:** Would it temporarily help the other person and then stop helping? Or would it not be strong enough to move the needle?

**Sydnee:** It— I think you're—

**Justin:** This is all very theoretical.

**Sydnee:** Yeah, you're talking about what is the titer, meaning the amount of antibodies per whatever unit of blood. You know what I mean? I think it's a little bit theoretical.

Certainly, if there were enough in there, some, that would help some, but the important point, the take-home point is, you are not losing your immunity from a vaccine by donating blood. So please, if you're able to donate blood, it is a great important thing to do. In terms of organ donation,

a lot of people, especially, and I don't know if this is an outside of the US thing. In the US, when you get your driver's license.

**Justin:** Yeah, you sign up for the thing. It's like a checkbox.

**Sydnee:** You can check a box. Yeah. And then on your driver's license, it says if you're an organ donor. You can also go to [organdonor.gov](http://organdonor.gov) and click on your state and they'll tell you exactly the process and how to sign up and register online if you are an organ donor.

You can always change it at the DMV, you know, in your area. So it is a different process to become an organ donor. And in terms of donating your liver more than once. [laughs]

**Justin:** Very generous, can I just say.

**Sydnee:** There is— Your body cells can regenerate, for sure. We make more cells all the time, we're constantly— This is actually, we're going to talk about that in a later question that we've got, it pairs well.

Um, but you couldn't continue to give away, not enough that you can continue to give away pieces of your liver indefinitely. I would not recommend it. It is a wonderful thing if you can do it and certainly you can do it safely. It's an okay thing.

Like we have ways of taking just enough to help someone else, but not too much to harm you, but it still is risky. So I would never recommend double donating from one organ. That's probably too much.

**Justin:** Alright, alright. Here's another question. "Dear Sydnee and Justin, I was listening to one of the new podcast in my rotation when an ad came on with a person talking about, uh, with a supposed doctor saying that their cold sucked and they'd like some antibiotics.

"The doctor said the antibiotics wouldn't help and might make it worse, which feels incorrect, but I'm a plebeian without knowledge. The doctor then suggested they should try over-the-counter medicines like Mucinex, which was highly suspicious since the ad was paid for by Mucinex." [laughs]

"Regardless of any feelings about Mucinex, which I wouldn't mind hearing your opinions on, I'm wondering if antibiotics actually do make colds worse."

**Sydnee:** So...

**Justin:** That's from Kit.

**Sydnee:** I— Antibiotics don't necessarily make colds worse. It is true that if— And this is really, so a lot of the kind of ick that many of us might have right now this time of year, you know, cough, congestion, runny nose, sore throat, maybe some body aches, maybe some fevers and chills.

All that stuff taken together, most of the time it's a virus, and most of the time with the virus, although not always, as we have learned in recent years, most of the time with the virus, it is a self-limiting illness, you will get sicker for a few days and then you'll get better and then... that will be it.

**Justin:** Okay.

**Sydnee:** And some of them are longer, some of them are shorter. Certainly they can be more severe depending on your underlying health conditions. So I'm not saying viruses are never a big deal, but a lot of the times, supportive care is all we recommend, right?

Chicken soup, fluids, over-the-counter medicines like Mucinex are certainly, you know, can be helpful with the symptoms to help, you know, because it's no fun. Even if you're getting better, it still feels bad. So, I would question, um, if it's an ad for Mucinex. I don't know that I would ever take advice, medical advice from that anyway.

But as far as antibiotics making things worse, not typically. I mean, the bigger problem is that it's unnecessary. If you have a virus, an antibiotic by definition is working against a bacteria. So it's not gonna make any difference. Now there are some situations where even if we suspect it might be a virus, we might give an antibiotic like COPD.

Exacerbations, people who have a chronic lung disease and get flares of

that. Sometimes we do use antibiotics in certain situations. And there may be reasons why we'd be more likely to hedge our bets and give you an antibiotic just in case. Cause it's really time that tells us the difference. It's not so much the symptoms, it's how long they go on and if they get better on their own. 'Cause in the beginning they can look pretty similar.

**Justin:** Okay.

**Sydnee:** But in terms of it making anything worse, I mean, I think unless you have a reaction, like a rash, or it gives you some other thing, right? Like antibiotics can cause diarrhea even when they're working appropriately. So outside of those things, most of the time, antibiotics aren't gonna make things worse.

**Justin:** Ah, thank you. "Hi, Sydnee and Justin. As a listener to your podcast, I'm fascinated by pseudoscience, and this is reflected in my TikTok algorithm. One of the things that keeps popping up on my For You page is vagus nerve regulation to lower cortisol and improve the body's general stress response.

"Usually the regulation happens through some kind of stretching, but another common approach seems to be sitting completely still and just staring to the left and right without moving your head to stretch your eye muscles. Are the claims about regulating the vagus nerve based in science or does it just feel nice to move around and stretch occasionally?"

**Sydnee:** This is one of those where it's like, there's some truth underneath this and it's an emerging, like, it's an area where people are still researching and learning.

**Justin:** Yeah.

**Sydnee:** And so there are some elements of things that are scientific, but then I think maybe TikTok users have taken it into that pseudoscientific wellness, quote unquote, space where like, we don't really know if it works, but this seems pretty harmless.

And I think that's where a lot of that stuff starts to land. So your vagus

nerve, just so you know, like you really do have, that really is a real thing.

**Justin:** Yeah. It's what you need at the craps table to make sure that you don't fold your cards at the crap stable before you sign.

**Sydnee:** Oh, I see what you're on there. Uh-huh.

**Justin:** You need your Vegas nerve.

**Sydnee:** You need your Vegas nerve. It's got an A.

**Justin:** There's no cards in craps, I'm sorry.

**Sydnee:** Vegas with an A. So you've got these bundles of nerve fibers that run on both sides of your body from your brain stem all the way down your neck and they control lots of things. They're down into your torso and they touch a lot of internal organs.

They're part of the parasympathetic nervous system, which like if you think about your sympathetic nervous system as, like, your fight or flight sort of thing, your parasympathetic is like all the more relaxing things like digestion.

[laughs] But anyway, it's part of that. And so it has a lot to do with picking up information from these organs and transmitting it back and forth to the brain. Your vagus nerve is doing a lot of stuff that you have no control over. That's the important thing to know, right?

**Justin:** I hate that.

**Sydnee:** It's not like a nerve that you're sending a signal from your brain to your finger to like, you know, flip somebody off. It's a nerve that...

**Justin:** [laughs]

**Sydnee:** It's a nerve that's— [laughs] It's a nerve that's doing its own thing, right?



**Justin:** Right.

**Sydnee:** Okay, the idea, one, that it cannot have great tone, that is like a medically founded thing. There are times, okay, when they look at your heart rate, your heart rate should increase and decrease as you breathe in and out. And the more variability in that is actually a good sign of good vagal tone and it's associated with good cardiovascular health.

**Justin:** Okay.

**Sydnee:** Whereas if there's not a lot of variability there, it's associated with poor cardiovascular health. So we know there is something to that, right? There is something to vagal tone.

I think where you start to get into pseudoscience is some of the stuff that they're telling you to do. We don't really have any good evidence that those specific, like, the stretching and the moving your head and those sorts of things. There's no evidence right now that those necessarily are going to do something.

Certainly this is an area of research and we may at some point learn that, you know, your stress response and your cortisol, that all this does play in together in a way that you can personally affect, right? That's the big question. So yes, there's realness.

**Justin:** There's realness, but it feels like—

**Sydnee:** Is stretching going to change it long term to affect your health or just make you feel better in the moment? I don't think we know that yet.

**Justin:** I think if it makes you feel better in the moment, go for it, right?

**Sydnee:** Well, yeah.

**Justin:** I mean, but it does sound like there's a lot of other ways to manage your stress. If you're gonna put energy towards something, that seems like maybe not the best application.

**Sydnee:** Yeah, and I think that's where a lot of the doctors that I was reading a lot of opinions on this and they're saying, like, it's an emerging area of research. Certainly, there's a lot to study. If stretching makes you feel better, it's hard to discourage people from doing something that is typically as benign as stretching. You never wanna say anything's 100%.

**Justin:** "I was told recently that the US is one of the only countries where people don't get dewormed regularly and that in other places, it's just a standard part of healthcare, like an annual checkup.

"Should I be getting a de-wormer? Do I need a script? Or is there something OTC I can get? The person I heard from said this was backed up by people in the country she lives in, but also known for having questionable information and opinions about things." So, Syd, deworming.

**Sydnee:** Uh, so, I mean, I don't know that we always refer to it as deworming necessarily. I mean, it is accurate. It is totally accurate. Because we typically use the word deworming to talk about species other than human species. I don't know.

So, yes, there have been campaigns to do this. We have done this in different countries all over the world throughout history, um, as like a way to try and alleviate— We know that a high percentage of this population probably does carry this parasite. And so we'll just give everybody this dose of a medicine that would kill the parasite because it's not particularly risky, it's cheap, and this will eliminate, you know...

I mean, there are places where it's, you know, 60% or more. And so the thought was, this was helpful. So certainly, I've seen this done routinely on some of the medical trips I've been on abroad, where everybody's just kind of given this medication. And I would not advocate for just doing that haphazardly ever.

But health organizations, you know, across the globe have done this in areas where they know there's a big parasite burden. We don't currently do it in the US, although we did back in the early 1900s in the South because the American hookworm was a big problem.

So we did do routine, quote unquote, deworming in the American South at one point. And there was some evidence afterwards that maybe it improved, like, school performance and job performance and stuff like that because a lot of people were chronically ill, anemic, undernourished because of having a parasite.

**Justin:** Huh.

**Sydnee:** So we have some evidence that they're effective. There's conflicting evidence though. Cause there've been other places where they've done these mass deworming campaigns and afterwards it hasn't really changed the overall health, necessarily. So it is a little bit controversial should we be doing it everywhere. We did it after the World Wars, people returning.

**Justin:** Oh, from [crosstalk]—

**Sydnee:** Not always, but yeah, there were certain programs targeted to, like, de-worm people. So yes, this does happen some places, sometimes, specifically targeted by a health organization who knows that there is a problem there.

But no, you do not typically, I will speak generally, if you're living in the United States, we do not typically need to go seek routine deworming just as a, you know, precaution. If you're having stomach symptoms or any other symptoms that concern you, then please go get checked out.

**Justin:** Mm. Got it, okay, will do. Let's see here. "I feel too weird asking anyone I know about this, so here it goes." That's why we are here. That is what we strive for.

"For context, I'm assigned female at birth and don't have any medical conditions that cause facial hair growth. Since puberty, I've always had one or two chin hairs. but since I've entered my 20s, they have increased in both number and length to the point where they've become noticeable to others and even seem to be growing. What is the reason for this? Is it hormonal? Thanks to you both for a wonderful podcast. Take care, Jay."

**Sydnee:** Now again, speaking generally, because yes, there are specific reasons why you might have more hair growth, especially, like, facial hair growth, if you're a cis woman. There certainly are medical conditions that cause that, and as always, if you're concerned, you have symptoms, please talk to your own healthcare provider.

Generally speaking, I will say it is known that just shifts in hormones throughout your lifetime will cause changes in hair growth and can definitely cause more terminal hair growth, meaning like the thicker, darker hairs that people sometimes want removed from their face, right?

So definitely hormonal shifts are responsible. If there's anything that creates higher levels of androgens, that class of sex hormone, anything like that, we would start to see increased hair growth in that facial pattern.

It's big shifts at puberty, big shifts maybe around a pregnancy, big shifts in menopausal time, because these are all times where your hormone levels are shifting, but it is something that is incredibly common and is often normal, although again, I don't wanna say it's always normal, cause you know, there are some of us out here who have PCOS, polycystic ovarian syndrome, and that is also associated with increased facial hair growth. So.

**Justin:** "Hi, Sydnee and Justin." I'm in the parentheses in this one. I don't love how that feels.

**Sydnee:** Sorry about that.

**Justin:** That's all right. "Can people sneeze while sleeping? Can we cough while sleeping and not wake up? Love the pod. Thanks, Holland." Now I can say concretely about coughing. Yes, because we have heard our kids do it from their bedrooms. Right?

**Sydnee:** Uh, but are they asleep when that's happening? That's a the question.

**Justin:** Ooh, that's the question.

**Sydnee:** No.

**Justin:** No?

**Sydnee:** You are, a lot of times, if you sneeze or cough in your sleep...

**Justin:** So they're not asleep?

**Sydnee:** You are, well, you wake up just barely.

**Justin:** Enough to cough?

**Sydnee:** You enter into the lightest, you know, you basically wake— You're in the lightest stage of sleep or just barely awake, basically. In that kind of space, that liminal space, uh, you exist for a moment and cough or sneeze and then go back to sleep and probably...

**Justin:** Like me in trigonometry class. It's just like...

**Sydnee:** [laughs] And you probably have no memory of that when you wake up the next morning. Most people don't, but yeah, you're waking up. So which is why, especially like, coughing.

I mean, I don't think most of us outside of specific kind of anomalous situations aren't sneezing all night. But if you have something acutely or chronically that makes you cough at night, it's so disruptive because you're waking up a bunch of little times that you don't even know about, so you feel even worse the next day, right?

Because you're really tired, because you never got to go through all those sleep cycles that you needed to. But no, you cannot cough while you are actually asleep.

**Justin:** Ditto for sleeping, I'm assuming? Ditto for, sorry, sneezing.

**Sydnee:** Yes, you cannot cough or sneeze while you are asleep.

**Justin:** Uh, hey, let's take a quick break, and then I have more questions for you. Do you mind? Can you...?

**Sydnee:** Nah, we need to head to the billing department anyway.

**Justin:** Oh, okay, let's go.

[theme music plays]

[ad break]

**Justin:** Okay, we're back. More questions. "How do I tell my doctor I went back to a previous prescription using leftovers versus the one she changed me to? I know I went against medical advice to drugs I should have tossed and I'm dreading a lecture or being removed as a patient. For context, I'm transgender and switched my care to her roughly six months ago. I've been using estradiol..." Es-tra-dee-ol?

**Sydnee:** Es-tro-dial.

**Justin:** "... estradiol injections, but she switched me to patches to reduce the clotting risk. Three years before HRT, I had a pulmonary embolism, so this is a very valid concern. I hate patches, I hate them. So when the insurance ran out from losing my job, I switched back to the injections as I have months of supplies left over.

"There's so much easier, my levels were stable and in range. I'm accepting of the extra risk, but I have no idea how to explain this to my doctor. And it takes months and months to get into a new gender care clinic. Thank you, sorry for the long question. Stephanie." How can we help Stephanie here? What's up?

**Sydnee:** Um, I think that it's such a, the easy answer, and this is what I don't wanna be. I think a lot of times in healthcare, even when we know how problematic and broken our system is in this country, which is the system I can speak of, and how difficult it is for certain populations of patients to get appropriate, compassionate care and the trans community being one of the best examples of that limited access and all the barriers there are to care.

It's easy for me to say, "well, just be honest with your doctor and it'll be

okay." And I don't want to be ignorant to those concerns because there are a lot of times where I know you are honest with your doctor and that backfires and you do get, I would say patronized is the best that you... doctors fall into that like, "well, you should know better."

**Justin:** Right, right.

**Sydnee:** "You shouldn't..." and, you know, and treat you like a child. Um, I think that's why it's really important to find a provider that you can have that honest relationship with and that you can trust and that's really difficult when you're limited to how many there may be, especially in your area.

**Justin:** Sure.

**Sydnee:** I speak from experience in this area. There are not very many of us who provide that sort of gender affirming care. I always advocate telling your doctor the truth. I will say most of the time, just being able to take better care of you is important and if you have a provider who's already, you know, practicing gender affirming care, you would hope that they would be in that camp.

Anytime I know that a patient is not maybe doing what we had agreed on before, doing something different. The sooner I know that and I can help them troubleshoot whatever concerns come with that, the better care I can take of them.

And then I feel like our next visit isn't a waste because sometimes I worry that then they come in and I find out that what I thought we were doing isn't what we were doing. And now it's like Groundhog Day, we're having the same visit all over again. And I wanna know, because if it's not working, I wanna know and I wanna help you.

And I would hope your provider would feel the same. I would hope that honesty, and again, as long as you— You're an adult. If you understand the risks and benefits and you've made an informed decision about what's best for your healthcare with the advice of your physician, then you should be able to do that.

And I believe that especially the majority of us who practice gender affirming care would say the same thing. So I would encourage you to be honest. I do think you will get better care in the long run if you're able to be honest.

**Justin:** Uh, "is there any benefit to shaving/not shaving your armpit hair? I know hair is designed to keep you warm or keep things like your eyelashes and nose hair. But I wouldn't think of your armpits as being a spot that would lose heat like the top of your head does, so what exactly does it help with?"

"And beyond societal reasons are there any reasons for it, like, does it make you less smelly or does it do the opposite?" That's from Squeaky Clean Boy and Not Smelly At All, I Promise from Los Angeles.

**Sydnee:** U, I thought this was a really interesting question because I couldn't come up with anything... Off the top of my head, no, I don't know what any benefits would be to shaving honestly outside of I mean, and this is an example of...

**Justin:** Benefits of having the hair, not benefits of shaving. Benefits of shaving? Well, the benefit, I think what they're asking is, is there a benefit to the hair that the shaving gets rid of? Like, do we need the hair?

**Sydnee:** Uh, again, outside of keeping you warm, no, I don't know any reason you need the hair. I will say that there are risks and benefits to both. And the only risk to having hair, really, that I could find or think of is like...

**Justin:** The little freshness fairies that you get from the deodorant and they cleanse through it and you get the little...

**Sydnee:** I mean, if you don't have hair, you can't get lice.

**Justin:** Yeah?

**Sydnee:** Anywhere.

**Justin:** That's like such a wild thing to say this year.



**Sydnee:** Well, I was trying to think of a health benefit. If you don't have hair, like, specifically like, pubic hair, then you can't get genital lice.

**Justin:** And if a frog had wings, he wouldn't bump his butt when he hops. What are you talking about?

**Sydnee:** [laughs] I'm just saying, health benefit wise, that's about it. My point is, but on the flip side, like what's the advantage of keeping the hair? I think it's that in the hair removal process, you can get, you know, razor burn or folliculitis, minor skin infections, that kind of thing.

You can cut yourself, I don't know. You get dry skin. I know that, like, when I shave my legs less, they're not so dry and when I shave them more, they end up being drier. And I, you know, that probably means... We shouldn't, I don't know.

Evolutionarily, should I be shaving in the first place? I don't know of any real benefit to keeping the hair, but I don't know, I certainly don't know of any real benefit to getting rid of it either. I think it's really a societal, cultural, your own preference of beauty thing. Um...

**Justin:** I don't know if this makes sense.

**Sydnee:** I wouldn't put hygiene into it.

**Justin:** Yeah, I don't know if this makes sense, but it's never stopped me from saying something before. Do— There— You could maybe make an argument. I wonder if...

It's not an argument, it would be scientifically provable. But like, people who shave their faces, you often read when you're like, learning about shaving that you don't wanna exfoliate close to the same time as you shave. Like you don't wanna do both on the areas that you shave because you are exfoliating with the razor.

**Sydnee:** Right.

**Justin:** You are shaving a layer of dead skin cells and it's like, that is

exfoliation. I do wonder maybe if, like, by shaving your pits, you're removing dead skin cells that could trap moisture or odor by, like, exfoliating with a razor.

**Sydnee:** Yeah.

**Justin:** Maybe?

**Sydnee:** I mean, that's possible...

**Justin:** [overlapping] Probably nothing you wouldn't get by, like, exfoliating soap on your pits, right?

**Sydnee:** ... but like, I wash my— I was gonna say I wash my armpits, whether I shave that day or not, I wash my armpits.

**Justin:** Yeah.

**Sydnee:** So I think— I'm absolutely operating like the theoretical field. I have no idea. Well, and I mean, I think you could get in— I'll speak in generalities. I think generally shaving is purely a, I mean, it's what you're comfortable with, what you prefer.

It's a cultural thing, certainly. But I don't, off the top of my head, now, certainly if you have, there are a lot of cases where we'll tell patients not to shave, if they're more prone to infections, if they have more difficulty healing. We may discourage you from shaving in specific instances. Generally speaking, I think it's okay to shave or not.

**Justin:** Avery says, "I've always heard this thing about how you're a whole new person every seven years because your body replaces cells. Is that true? If it is true, then why aren't transplanter organs turned into native organs? Thank you."

**Sydnee:** I like that question because it was like a ship of Theseus kind of question.

**Justin:** It is like the ship of Theseus, yeah.

**Sydnee:** Yeah.

**Justin:** We're into semantics and philosophical territory at this point.

**Sydnee:** Yeah, no, I mean, okay, so your body cells do regenerate, generally speaking. It's not on a seven-year cycle.

**Justin:** Yeah.

**Sydnee:** All of your cells regenerate at different rates. Some of our cells die and we grow new cells really quickly. Fast growing cells like, um, everything that lines your mucous membranes, like from your mouth all the way down your GI tract.

Those are faster growing cells or hair cells, certainly. There are other parts of our body that regenerate much slower, like skeletal muscle, like those cells that make up our skeletal muscles.

**Justin:** Some parts that don't at all.

**Sydnee:** And there are parts that don't regenerate completely and so then you get scarred areas of tissue where it can't fully regrow, right? We worry about that with damage to the heart, like from a heart attack, and certainly from strokes or any other damage to the brain.

Now, we are learning every day that nerves can do things we didn't used to think they could do. We used to say things like, you know, brain, the nerves in your brain, that tissue, neurons, aren't going to regenerate at all.

Well, we're learning that they do regenerate in a way that we didn't quite understand. But it's different in every body tissue. So yes, you're new. It's all new at different rates. You're losing skin cells constantly, not every seven years. Every time you—

**Justin:** Hey, what about bones?

**Sydnee:** All the cells are... I mean, everything is regenerating or turning

over.

**Justin:** Teeth?

**Sydnee:** At some rate, yeah. Very slowly...

**Justin:** Even teeth?

**Sydnee:** ... in some situations and longer in other, but all of our body cells are always—

**Justin:** Teeth aren't cells though.

**Sydnee:** Not all of our body cells.

**Justin:** Teeth aren't cells, are they?

**Sydnee:** Cells make up everything, honey.

**Justin:** Okay, cool. Um...

**Sydnee:** Well, no. Well, some are mineral complexes and there are cells.

**Justin:** Okay.

**Sydnee:** Okay, there are cells all through your body.

**Justin:** Right.

**Sydnee:** But then there are also like...

**Justin:** I'm just saying if I get a cavity...

**Sydnee:** ... other non-cellular molecules.

**Justin:** ... I can't wait it out.

**Sydnee:** No, you can't. [laughs]

**Justin:** It's not gonna go back.

**Sydnee:** No, the tooth will erode away, I guess, eventually, would be my guess.

**Justin:** What I'm getting at is that...

**Sydnee:** I'm not a dentist, don't ask me about teeth.

**Justin:** Same bones, different blood. That's what I'm saying.

**Sydnee:** Your body is regenerating slowly at different rates, but an organ...

**Justin:** Except for the skeleton, which is inside and powering the whole thing, and it is stalwart and stays with you, no matter what.

**Sydnee:** Why is an organ not becoming you, though?

**Justin:** What?

**Sydnee:** The organ won't become like the other tissues in your body, like the other native tissues.

**Justin:** Yeah, nobody can be me, Sydnee. I'm original.

**Sydnee:** Well, do you know why?

**Justin:** 'Cause I'm an original.

**Sydnee:** 'Cause what's it reproducing from?

**Justin:** The, oh, the—

**Sydnee:** The donor cells.

**Justin:** The donor cells.

**Sydnee:** The cells from the donor.

**Justin:** That's why—

**Sydnee:** So the organ will always be genetically the donor organ.

**Justin:** We've had some friends that have had to do— One friend who had to have an organ replacement and he's gonna be on therapy for his whole life because of that right because it's always gonna be a foreign organ.

**Sydnee:** Mm-hmm. So that you don't reject it.

**Justin:** A forgan.

**Sydnee:** Yeah.

**Justin:** Okay, wow, we got to move. Okay. Listen, this is one I really need to know and I ask you to get ready. 12 questions, but I don't know that we're gonna have time to do all 12 questions.

Okay. "Hi, Dr. Sydnee and Justin. I have a weird medical question: is gut health really a thing? I see a lot of stuff marketed for it and it reminds me of things that are marketed to detoxify, which we know is a scam, and in attempts to research tend to just give me ads."

That is a current problem I know that you have struggled with. "Thank you for your service in destroying your algorithms for us. Love the show, Allison."

**Sydnee:** Um, oh. Gut health is such a tough concept because is it possible to, well, certainly. Can we eat in ways that make it harder for us to maintain good gut health? Meaning like, we poop regularly and we don't, you know, we don't get constipated, we're not having diarrhea. We're not vomiting, we're able to digest food at a typical rate.

Like, I mean, when we hear gut health, that's what I'm thinking, right? Is it, can you eat in ways that will make that harder? Yeah. Like you don't get enough fiber for instance. Um, so definitely—

**Justin:** And there is gut health in the sense that, like, if you have an antibiotic, it can wipe out your gut flora, right?

**Sydnee:** For sure, for sure. And so there are definitely— And, like, when you travel and you become, you come into contact with different microbes that are native to different parts of the world and then you can develop something like travelers' diarrhea.

That has to do with like, different gut health, different gut flora, the bacteria that live in our guts and different... depending on where we live and what we eat and who we live with and all that stuff.

Anyway. I think there is the function of the GI tract, which is a real thing that can be affected by a number of nutritional and activity-based things. Because a lot of this gets tied into, like, exercise stuff too. If you're not getting up and moving enough, you'll get constipated.

**Justin:** Yeah.

**Sydnee:** One of the ways that we fight constipation is by regular movement, body movement.

**Justin:** If you want regular movements.

**Sydnee:** Have regular movements.

**Justin:** Have megarular movements.

**Sydnee:** So like, yes, all these things impact that. But then I think there's this other idea of gut health that gets into that. again, that pseudoscientific wellness space, where they're... mainly they're selling you supplements, which is, again, red flags.

If somebody's telling you to do or not to do something for your health so they can sell a product to you, what's their motivation? Yeah, why? You have to question that. And then when people start to just generally suggest you to eliminate different food groups for your gut health, I think gluten is a

great example of this. Dairy gets this too.

Just eliminate it and your gut health will improve. These are pseudoscientific claims. Nobody can just make that blanket statement that eliminating something will make you feel better without actually doing any sort of evaluation to see if that is a problem for you.

So, gut health is a real thing. And certainly if your gut isn't functioning well, diarrhea, constipation, can't eat, nauseous all the time, vomiting, any of those things, please go get checked out to have your gut health evaluated. But if everything's working fine, then that would tell me your gut health is probably doing okay.

**Justin:** Yeah.

**Sydnee:** Generally.

**Justin:** Yeah. Okay, just real quick, cause you, you know what?

**Sydnee:** Yeah.

**Justin:** You put these in, let's just get them.

**Sydnee:** I can be quick.

**Justin:** "I have been getting targeted ads for leggings that burn calories." That's from Van. Sydnee, is that anything?

**Sydnee:** No, target— Leggings can't burn calories. What they claim, and what I think they're trying to get away with, they have really tight areas. They have almost like resistant bands. I looked up these leggings. There's a bunch of different brands, by the way. And they're like... the resistance bands are like built into the leggings, and so they squeeze certain areas super tightly.

**Justin:** Just to make the everyday life just harder.

**Sydnee:** Well, they're real occlusive. They'll make you sweat more there



probably. And so you'll have some more insensible water loss when you exercise or when you walk, like you'll lose more fluids through your skin. So if any change on the scale is happening, I would say it's because you're... dehydrated—

Like it's the same as, like, sweating out a bunch. You didn't really lose weight if you lost it through fluid. If they do anything, it's that, but that's not what, they're not burning calories. That's not true.

**Justin:** Here's a good question from V. "If I can catch the flu and other viruses by drinking from somebody else's glass, why can't I just take my vaccine as a pill?"

**Sydnee:** I thought this was a really great question to introduce the idea that it would be great if we had more pill vaccines, oral vaccines, right? Wouldn't that be great?

**Justin:** Chyeah. Especially as a parent of two kids that are absolute maniacs when it comes to getting shots. Like, different people. Like I don't recognize them when they're getting shots. They are unhinged.

**Sydnee:** No, this last round where they got their COVID boosters and their flu shots...

**Justin:** They did really good actually.

**Sydnee:** ...which all of us got our COVID boosters and our flu shots.

**Justin:** Reminder folks. Yes. You're behind the times of shooting.

**Sydnee:** I just called it a booster three times. You can't let me do it. It's not a booster. It's the most recent COVID vaccine. It's not a booster, it's different.

**Justin:** Oh, really?

**Sydnee:** The newest COVID vaccine.

**Justin:** I thought it was a booster.

**Sydnee:** No, it was not a booster. But a lot of people, it doesn't really matter. The point is, get the new COVID vaccine, get the flu shot. It's a good idea. Anyway, aside from that, why don't we have more oral vaccines?

They're harder to make. That's a good question. It would be easier. It's easier to inject some of these substances in the way that we inject them into the muscle. and deliver them slowly to trigger that immune response. Cause that's what you're doing, right?

You're taking a piece of something and then making your immune system learn how to fight it. It's a lot easier to do that if you just inject it into someone.

**Justin:** Cause your stomach and your acid is hardwired to like, "oh, look at this, this doesn't belong here. Let us get rid of that. Like we'll take care of this for you, no problem."

**Sydnee:** You have a ton of defenses, exactly, built into your GI tract so that once you put that in your stomach, one, our GI tract's job is in part to break things down. So it's gonna start trying to destroy everything you just put in there.

And two, you have a lot of infection barriers in your GI tract because we eat and drink that way. And so it needs to be a, the security system needs to be better in your GI tract because that's a good way for invaders to get in.

**Justin:** Mm-hmm.

**Sydnee:** So it would be— It's harder to make a vaccine that both will trigger an immune response, will get through those mucosal barriers in order to make your immune response happen, but also won't get eliminated by the immune function of your gut, by the digestive function of your gut, all that stuff.

**Justin:** Is nasal easier? Because if...

**Sydnee:** Mm-hmm, nasal is easier too.

**Justin:** [crosstalk] ... I guess.

**Sydnee:** Nasal is easier too. Well, you're getting it absorbed directly through those membranes into the bloodstream and you don't have all of the other properties you do in the GI tract. But... But it's harder, it's just a harder delivery method.

I think that would be, I know, I found papers on that as an area of exploration. When can we do this more effectively? How do we combat all that? Because it would be easier. We know we would get better compliance, more people would take the vaccines if they were oral.

I mean, there are some examples, by the way. There are some oral vaccines out there. The typhoid vaccine that I took in the past was an oral vaccine. So we can do it, it's just a lot harder to make that vaccine. And it's important to remember, that's because, even though you can get infected with viruses through the mouth, as our listener pointed out, the job of a virus is to infect you, I guess, if a virus has a job.

That's what it's trying to do. The job of a vaccine is not to infect you. If the vaccines could make you sick, the way a lot of people think, like, the flu shot can give you the flu, it cannot, it cannot.

If it could, if that's what you were trying to do, it would probably be a lot easier just to squirt it in your mouth. But we're not trying to give you the flu. We're trying to protect you from getting the flu in the future, so.

**Justin:** Um, hey folks, thank you so much for listening. Thanks to the Taxpayers for using their song, Medicines, as the intro and outro of our program. Hey, listen, right now, I need you to head on over to [bit.ly/Candlenights2023](https://bit.ly/Candlenights2023).

That's where you can spend just five, just five bucks and be able to watch Candlenights, our virtual spectacular December 16th. And that's gonna be at nine PM EST.

We're gonna have special guests, it's gonna have songs, it's gonna have fun, it's gonna have everything and all of the donations, all the money that we raise from this goes to Harmony House, which is— I don't know, Syd, can you help me out?

**Sydnee:** Harmony House is a local day shelter for people experiencing homelessness here in Huntington where I provide volunteer medical care. It's the hub of our coordination, of our continuum of care for people experiencing homelessness in this area.

It's where we provide housing services, food, clothes, hygiene, access to a warm place to be, showers, all those things, and supportive services for a variety of other conditions.

**Justin:** They've come to really rely on this fundraiser annually, and we are so appreciative to everybody that always kicks in. If you can give more than five bucks, that is so appreciated and we really appreciate it.  
[Bit.ly/Candlenights2023](https://bit.ly/Candlenights2023).

You don't just have to watch it when it's live. It will go live at 9 p.m., but it'll be on demand for, like, two weeks afterwards, so you can continue to enjoy it. Thanks to Taxpayers for the use of their song, Medicines, as the intro and outro of our program.

I don't remember if I said that already, but that's twice for them. Good on them. And that's gonna do it for us for this week. Until next time, my name's Justin McElroy.

**Sydnee:** I'm Sydnee McElroy.

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

[theme music plays]

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