Sawbones 238: Applied Kinesiology

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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 cohost, Justin McElroy!

Sydnee: And I'm Sydnee McElroy.

Justin: [hoarse] Syd, this is so weird!

Sydnee: I know. I don't like this.

Justin: This is so strange. This is the first episode—is this the first episode *ever* that we've done like this? It is, right?

Sydnee: Yes. This is the first one ever that we have not been… sitting either next to each other or directly across from each other while recording. At least not, like—like, we are *virtually* directly across from each other?

Justin: Through the web, yeah.

Sydnee: Through the—we're Skyping.

Justin: I'm at the McElroy studios, Cincinnati location, here at Travis's office. Uh, we're on our book tour for *The Adventure Zone* graphic novel. Get it today at theadventurezonecomic.com! First week sales are so important, folks. Please get out and buy 14 to 16… copies for yourself. Um—

Sydnee: I plugged it on my other podcast, too.

Justin: Thank you so much. Uh, Travis has a framed photo of himself. Just himself. I'm—I'm looking at it right now. This is amazing. Uh—

Sydnee: The—of—of *course* Travis does. [laughs]

Justin: No other family, just—just Travis. Anyway, uh—

Sydnee: [through laughter] Of course Travis does.

Justin: —so, we are trying something a little, uh… untraditional for *Sawbones*. I wanted to try my hand at… at researching one, and Sydnee said, basically, "Here. Take my light work," she basically said. "This is a—a grounder, I think."

Sydnee: Mm-hmm.

Justin: "That even you, Justin McElroy, will be able to field."

Sydnee: Yes. I was trusting that you would be able to—like, that you've learned enough about what's real and what's probably not in medicine that you would—that you would be able to figure this one out.

Justin: Yeah.

Sydnee: On your own.

Justin: Now, she says—she says that. She also has told me about the things she has independently looked up about this topic, because I think she didn't *100%* trust cha boy? But that's fine.

Sydnee: Well, I think it's always important—it's not enough just to say, "Hey, doesn't this sound like it's totally made up? Well, then it probably is."

No, we gotta prove that it's totally made up, and so that's—that's kind of where I come in. [laughs quietly]

Justin: You actually don't have to prove that it's totally made up. You only—'cause you can't prove a negative, right? It's the absence of proof… it's not proof that it is totally made up.

Sydnee: Okay. Okay, that's fair. But I think that when I say, "And also they did a peer-reviewed research, like, study on it, and it showed that it was made up," that's a little more… you know.

Justin: That's fine. That's fine.

Sydnee: There are a lot of—Justin, we have talked about this on the show before. There are a lot of things that are true about the human body and the way that it works that sound made up, but they are 100% true.

Justin: Uh, we—

Sydnee: I reference the inner ear again. [laughs]

Justin: We are going to, uh, talk today about applied kinesthesiology.

Sydnee: Yes.

Justin: Now, I want to—I want to differentiate—'cause this is very important. Applied kinesthesiology sounds super real. [laughs] Because kinesthesiology is a weird thing. First off, that word is spelled K-I-N-E-S-I-O-L-O-G-Y. Where is the—

Sydnee: And it's not—

Justin: —"th"?

Sydnee: —it's not kinesiology?

Justin: What?

Sydnee: It's *not* kinesiology?

Justin: Or—maybe it is! Ei—either way—

Sydnee: [laughs]

Justin: —kinesth—kines… kinesiology? Is that how you pronounce it? It's a wild word, is what I'm saying. This is a wild word.

Sydnee: Yeah.

Justin: I'm not gonna—I'm not gonna get onto YouTube while we're talking and google the word and—and hear the, uh, pronunciation of it. You just need to accept my… my, uh, um… [pauses] uh, hypothe—

Sydnee: You're doing it, aren't you? You're doing it! [laughs]

Justin: Okay, it's kinesiology. You were right. I was mispronouncing it. [pauses] This is a terrible start. But, okay. It's kinesiology.

Sydnee: This is a—you're—you're off to a bad start. [laughs]

Justin: But still. Kinesiology is a real field. That's the study of, um, how the human body moves. Like, motor performance and stuff, and they use that in, like, biochemistry and biomechanics and—kinesthesiology, it's the study of how the body works.

Sydnee: Yes.

Justin: *Applied* kinesiology… is not that.

Sydnee: No.

Justin: *Applied* kinesiology is… alternative medicine. Oh, there are so many great, uh, uh, um… synonyms? No. Um… euphemisms! I found for made up medicine while doing this. Uh, alternative. In—integra—uh, supportive? Is that one?

Sydnee: Mm-hmm.

Justin: Uh—

Sydnee: Complementary and alternative medicine is generally what—

Justin: Complementary. That's great. Um—

Sydnee: —what we refer to it as.

Justin: Uh, so anyway, it—applied kinesthesiology was created by this chiropractor named George Goodheart, which is a very good start if—

Sydnee: [snorts quietly]

Justin: —that sounds legitimate. [wheezes] Like, your name's Goodheart. It's very good.

Sydnee: He had a good heart!

Justin: He had a good heart. Or at least a last name that indicated—

Sydnee: Uh-huh.

Justin: —that he had a good heart. Now, he was, um, kind of an unorthodox cat. *Time* did a, uh—a profile of him in 2000 that described him as—and I'm quoting here—"A meat-eating Republican who wears a coat and tie everywhere, including the breakfast table." Uh, good—

Sydnee: What does that… what does that have to do with his science?

Justin: I don't *know*.

Sydnee: [laughs]

Justin: You know, I think it was, like, to contrast him with other, like, New Age, alternative healthcare—

Sydnee: Ah.

Justin: —practitioners. [holding back laughter] Like, he's not the kind of guy you'd expect to make things up.

Sydnee: So this is Ron Swanson.

Justin: Exactly. Ron Swanson, if he was really into, like, chakras.

Sydnee: Okay. [laughs]

Justin: But—but not chakras. That's not what we're talking about. Um, he was kind of an unconventional cat. He was a bomber pilot in World War II, won a bronze star for inventing this, um, new kind of bomb release mechanism that apparently was much more precise than the one before it.

Sydnee: Okay?

Justin: And then became a chiropractor, um—again, unconventional. Wasn't a fan of fluoride.

Sydnee: [laughs quietly]

Justin: So he made it up in 1964, and I do mean made it up. [wheeze-laughs] Pretty deliberately. He created applied kinesiology in 1964, and he started roping in, uh, a bunch of other chiropractors and showing them how to do it, and trying to, like, um… it—you know, institutionalize it, build—build best practices for it, uh, whatever.

So, what is… this practice? Applied kinesiology.

Sydnee: Yeah, what do you do?

Justin: Kinesiology? Am I saying that right now?

Sydnee: Kinesiology.

Justin: I think I am. Kinesiology.

Sydnee: Yeah, what do you do?

Justin: Okay. So it—I wanna sp—I wanna specifically talk about a—a *flavor* of applied kinesiology? Um, but it—and we're gonna get to that, but it's important that you understand first the—the big picture idea. The idea is that muscle weakness… can indicate… disease or disorder in other parts of the body that are not directly connected to the, um—the thing that you are testing for, right?

Sydnee: Mm-hmm.

Justin: So let me give you an example, right? You test your, um… you know how, Syd, you can measure, um, thyroid function by testing someone's, uh, Achilles tendon? I read that. You can tap someone's Achilles tendon to measure thyroid function, to see how fast the tibial muscle jerks?

Sydnee: Uh—okay?

Justin: Okay?

Sydnee: Wh—what?

Justin: This is not applied kinesiology. This is an actual idea that is real.

Sydnee: Y—yeah.

Justin: Okay, but I'm saying that—

Sydnee: I mean, that's not how we test people for hypothyroidism.

Justin: Okay, but… the—fine! But in 2000, when this *Time* article was written that I was referencing this data from, that is something that you could do, right? It's, like, a real thing you could do.

Sydnee: I—I guess, with… ye—I—I mean, it is—no one does that!

Justin: Okay, but you *could* do it, Sydnee! So just—

Sydnee: There's nobody out there who's testing Achilles tendons to look for hypothyroidism! They're just testing your—your TSH, or your free T4.

Justin: But that was a real test.

Sydnee: You can—okay. I'll—mm. This is rough. Okay. I don't—I don't—reduced reflexes in the case of hypo—let's just posit that this is accurate.

Justin: Okay.

Sydnee: That there is—there might be a scientist who decides to… check on these things. Go for it.

Justin: That might be something you could test, right?

Sydnee: Okay.

Justin: So what this—what—what applied kinesiology sort of… posits, is that that idea could… expand beyond just that to basically everything in the body. Um, the—the—again, in this *Time* piece that was written about him in 2000, it said "he prods and palpates patients head to toe, searching for tiny tears where muscle attach to bone. These tears feel, he says, 'like a BB under a strip of raw bacon,'"

which is d—deliciously evocative language, George. "When directional pressure is applied, the BB's flatten and slack muscles snap back, their strength restored."

And that—and this is the important part. "That, says Goodheart, may help strengthen a weakened organ."

So he believed that muscles and organs… are linked by… [pauses] so, the term that I'm about to use depends on what sort of field of medicine you're talking about. Um, it's a system of invisible… pathways that your body is linked by.

Sydnee: Mm-hmm.

Justin: Now, in some—in some—

Sydnee: This already—this already sounds *really* legitimate. A system of invisible pathways.

Justin: In—in some cultures, they might call this, uh, uh, chi, or meridians. It's the—it's the same sort of basic idea that acupuncturists would use, that there are parts of your body that are… interconnected, right?

So that is—the idea with kinesiology, applied kinesiology, is that by detecting this weakness in the body, you can detect… a problem with… like, a system of your body that is not—that is not working particularly well.

Sydnee: Mm-hmm.

Justin: Does that make sense?

Sydnee: I mean… I understand—

Justin: Does it make sense?

Sydnee: —I understand what you're saying. The words make sense.

Justin: So, um—

Sydnee: I'm still stu—I'm sorry, I really don't think your Achilles tendon would be… I mean, unless you're in, like, a—like, a hy—like, a hypothyroidism-induced *coma…* like, a myxedema *coma*? But, I mean, still, your reflexes work! I'm still having trouble with that concept. [laughs quietly]

Justin: Okay, but—I can tell you're very much hung up on that.

Sydnee: Let's talk about this invisible system that you're referencing.

Justin: Okay?

Sydnee: So—so you're talking about some things like meridians, which we don't necessarily recognize as part of Western medicine. Did I put that nicely? [laughs quietly]

Justin: It—so—yes. But I read, when I was googling this—

Sydnee: Oh, uh-huh?

Justin: —that maybe… maybe we do, because of the discovery of primo v—a primo vascular system.

Sydnee: Right.

Justin: Is that—did I say that right?

Sydnee: So—

Justin: Yeah, I saw a cat at Auburn studied it, and a North Korean guy studied it, so that's two. That's pretty much a consensus.

Sydnee: Okay. So, I—I had not heard of the primo vascular system, so I will—I'll lift the curtain. Justin asked me while he was researching this, "Have you heard of this?" "No. I'm gonna have to look into this."

Because, like you said, there was a researcher at Auburn who was trying to, like, prove these results from this, um, North Korean researcher from the 60's. And so I started reading.

First of all, you need to know that this theory that was created in the 1960's by a Dr. Bong-han Kim in 1962, uh, the—he basically just said he saw these little blood vessels… that weren't—no one else had seen before.

Justin: Okay?

Sydnee: These tiny little, like—like you said, they're almost invisible. They're not invisible, but they—'cause he claimed to have seen them. Uh, he—he talked about, like, these—these vessels that existed that he called, like, Bonghan… Bongian—Bonghan ducts. And that there were nodes along them, and there—like, he called them "corpuscles." And that there was a liquid in them that contained a bunch of DNA that he called, like, Bonghan liquor.

So, like, he named all this stuff for himself. He said that he observed all of this. He said that this proved—this was what meridians were. This is how everything's connected. This is why acupuncture works, etc. etc.

He published a series of what are called research reports. These are not peer-reviewed studies. [pauses] These are—

Justin: [simultaneously] What are they?

Sydnee: —these are, "I saw this stuff. Here is me typing out all the stuff that I saw, and here's some—maybe some pictures of what I saw, and here it is."

And then he stopped and kind of vanished, and that was the end of it. So—

Justin: [laughs]

Sydnee: —and it's important to know that, because—

Justin: "Anyway, that's my science, folks! That's time for me. I'm out."

Sydnee: "I'm—I'm scienced out." It's important to note that these were a series of research reports based on "I saw this stuff, so it must be real."

And when you start to dig into—like, once people started to try to reproduce his results—first of all, people were having a great difficulty actually reproducing any of this. [pauses] Uh, I think this scientist at Auburn is the first person to kind of come close to sort of reproducing what he found.

So that's a problem. That's why we peer-review stuff, 'cause if it's not reproducible… is it right, or did you make a mistake, or did you make it up, or what?

Secondly, there's a lot of conflicting information in this vascular system that supposedly is so small the we can only see by—by electron microscopy, but on the other hand, can be dyed blue with certain dyes, and on the other hand these vessels are so tiny that you can't do tests of them, but then they refer to them as being, like, "low resistance vessels," which—so you did testing on them, if you know that.

A lot of the information about them is very conflicting, and it's hard to follow, and I think that just throwing a dye at a tissue and seeing little blue lines on it is not enough for *me*, as a scientist, to say "Oh, there's a whole other vascular system that exists in the human body that no one in history has ever been able to find."

I have a lot of problems with this.

Justin: Okay. So—

Sydnee: When stuff gets this—

Justin: —that's been Sydnee's Bummer Corner—

Sydnee: [laughs quietly]

Justin: —where she… just can't—just can't let go. Can't let people have their fun.

Sydnee: Well, if you're gonna create a new vascular system in the human body—like, if you're gonna claim that that exists, you better have some solid proof! And I have read a lot of these papers on it to try to figure out what the heck it is. And a lot of people who are doing studies on it are starting with the assumption that it's real and it exists, and then trying to theorize on it based on that, and I don't think anyone has ever definitively proven that it's real or… just something that—I mean, I don't know! There are lots of little structures!

I have dissected… a human body in my—

Justin: Here we go.

Sydnee: —in my history.

Justin: She brings this into every argument we have ever had.

Sydnee: [laughs quietly] And it's—like, there—there's a lot of stuff in there that when you—when you start dissecting tissues, if you started just throwin' random dyes around, you could find a lot of stuff and go, "What is that? I don't know!"

And, I mean, it—it can be very confusing. I don't blame researchers for getting confused sometimes and thinking maybe they discovered something new when it's just, like… a—a different… you know. Pathway that a certain vessel or nervous structure or something follows.

Justin: So that's the official word from Sydnee. Very exciting research. A little too early to make a lot of hard, fast decisions, but she's keeping an open mind and she's excited to see what the future holds.

Anyway, now *you*, Sydnee, have to follow *me*, Justin McElroy, to… the billing department.

Sydnee: Let's go!

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[theme music plays]

Justin: Go ahead!

Sydnee: Oh, I have to do it first?

Justin: You think *my* job is so ea—like, you have to do… *my* job, too. Now you'll see how hard it is for *me* to read the ads.

Sydnee: Uh—well, Justin, our first ad this week is Blue Apron!

Justin: Mm!

Sydnee: We love Blue Apron. Yo'uve been missing Blue Apron. I have been Blue Apron-ing without you while you're away.

Justin: [betrayed] No!

Sydnee: Yes. I shared our—

Justin: Before I left Sydnee made a chicken bolognese for me that was absolutely delicious.

Sydnee: And, uh, last night I incorporated—dad wanted to make burgers, and I said, "You know what? I have a burger Blue Apron that we can use as a starting point, so everybody can have this delicious slaw that I made homemade alongside our burgers."

Justin: Ooh!

Sydnee: "And then use the burger spice for all of our burgers." It was delicious. Uh, we love Blue Apron because we're busy, and it's hard to come up with new ideas for meals every night, and then to get to the store and buy everything for it.

And Blue Apron saves you all of that trouble by sending you delicious meals straight to your home, everything to need to prepare them, uh, all the ingredients. They're all high quality ingredients, they're wonderful. And the directions are really easy to follow, and you can get all kinds of, like, chef-designed recipes.

Like right now, Chrissy Teigan is sending us a lot of recipes. [pauses] So.

Justin: Thanks, Chrissy.

Sydnee: Thanks, Chrissy. Those are—[laughs quietly]

Justin: [laughs quietly]

Sydnee: And they're fun, and they're easy, and they're quick, and then you have a delicious dinner at home that you made yourself, and try something that maybe you haven't ever tried before! And share it with your family.

Uh, so, if you want to check out this week's menu and get your first three meals free at blueapron.com/sawbones, that's blueapron.com/sawbones, and you get your three meals free! So check that out now. Blue Apron: a better way to cook.

Justin: That was great, Syd!

Sydnee: Thanks, honey. Do you want to—

Justin: [simultaneously] Now it's time for—

Sydnee: —take the next one, or do you want me to do it?

Justin: Uh, sure, I'll do it. Boll and Branch is our other sponsor. Listen, folks. We're never gonna agree on everything. Sydnee and I don't agree about the primo vascular system. But what we *can* agree on is that sleep is really important, and we all need a little bit more. Boll and Branch—

Sydnee: Mm-hmm. Please tell our baby that.

Justin: [sighs] Yeah, really. Boll and Branch makes all their products, from bedding to blankets, from pure, 100% organic cotton. They start out super soft and get even softer every time. We love sleeping on them, and there's a ton of five star reviews, and Forbes, Wall Street Journal, Fast Company—they're all talking about Boll and Branch!

And, uh, shipping is free, and you can try them out for 30 nights. If you don't love them—and you will love them—you can send them back for a refund.

To get you started right now, our listeners can get $50 off your first set of sheets at bollandbranch.com, promo code "sawbones." So, check these out. Go to bollandbranch.com today for $50 off your first set of sheets. That's boll—B-O-L-L— andbranch.com, promo code "sawbones."

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Justin: Okay, so now we're gonna talk about nutrition response therapy, which is actually what got me interesting in applied kinesiology.

Sydnee: Is this—is this, like, one facet of it?

Justin: It's like a flavor of it. It—

Sydnee: Okay.

Justin: —it—I don't know if someone who was doing nutrition response therapy would say "Oh, this is applied kinesiology." It is. It's a—it's a specific varietal of it.

Sydnee: Okay.

Justin: [laughs] Of—of applied kinesiology.

Sydnee: Alright.

Justin: Okay, so it was created by a Dr. Freddie Ulan [Lan pronounced like "lawn"] in, uh—Ulan [Lan as in "land"], maybe? Perhaps Ulan—it's U-L-A-N—

Sydnee: Mm-hmm.

Justin: —in 1991. Because he almost *died*. That's right, it was serious. Uh, he was having all sorts of health problems, he said—and I want to read this—this quote from the website about, uh… Dr. Ulan.

"I couldn't find a satisfactory answer, and almost died as a result. Internal weaknesses, toxicities—" oops! That's a bad—such a bad start, doc.

Sydnee: Mm-hmm.

Justin: "—and imbalances, traceable to a steady diet of adulterated food were *literally killing me*. No wonder my adjustments didn't hold, and my pains and multiple body dysfunctions became resistant to my colleagues' most excellent efforts. In the end, it was up to me, with the help of my wife Dana, to bring myself to life.

I set about to complete my education in nutrition and diagnostic methods that were available in 1991, including applied kinesiology in its many variations, but found so many deficiencies that it seemed like I would choke to death on vitamins if I didn't bring my pill count under control.

This drove me to develop our current methods of dosing. My adjustments started holding again, and with the reduced and corrected subluxations my health started to return."

Sydnee: Uh-huh.

Justin: That's an interesting bit of wiggle room. Uh, that he talks about. The—the adjustments holding. And that's a really interesting thing that you see sometimes with chiropractors, especially, I would say, ones that are, like, less reputable. The idea that an adjustments, your chiropractic adjustment doesn't

"hold," quote, unquote, is a nice bit of wiggle room for, like, why something doesn't work. Like, "This chiro—"

Sydnee: Sure.

Justin: "—this chiropractic practice *should* be working. That's so weird. There must be something else wrong that this—this chiropractic procedure is not holding."

Sydnee: Right, and I think—I think that that—I think that's a good—like, whenever I hear that I always think, "Well, that's something for—for the medicine that I believe in." 'Cause I don't—I'm not so bold as to think we get everything right with Western, modern medicine. But if somebody comes back in and the medication I give them—they say, like, "Well, it hasn't improved my mood like you said it would." Or, uh, "My blood pressure is still high." I'm not telling you that. It's tested. It's still high.

I don't say "Huh. There's something else going—" I—I am willing to say, "Maybe this treatment method failed, and maybe we need to take a step back and try another treatment method."

I think you always have to be willing to say that; and if you're not, my red flags go up.

Justin: Uh, so what is… nutrition response testing? Okay, so nutrition response testing is—I am going to walk you through a session real quick, because otherwise I don't think it'll make sense to you. And, uh, you can actually find plenty of videos of people doing this—this, uh, baffling procedure on YouTube.

Uh, they all do it with a straight face, which is pretty impressive to me. Uh, so—okay. Sydnee, I'm gonna pretend that you're lying down on, like, a, um… you know, a doctor bed.

Sydnee: [laughs quietly]

Justin: I don't know what you call it. A testing—

Sydnee: [holding back laughter] An e—examination table?

Justin: There we go! Uh, okay. The first thing we need to figure out, Sydnee—

Sydnee: [through laughter] Doctor bed?!

Justin: Shut up…

Sydnee: How creeped out would you if you went to your doctor and they were like, "Okay. Now, sir, please lay down on this doctor bed." [laughs]

Justin: Okay, fine! The first thing that you're gonna figure out is—the first thing *I'm* going to figure out, as your nutrition response tester, is can you be tested?

Sydnee: Okay.

Justin: So I'm gonna have you press up with your arm, and I'm gonna press back down, and we're gonna see if you can hold a lock. This idea of a lock is really important. It's your ability to press back against me and resist my pressure, match my pressure, basically. That is a lock, if you can match my pressure. If I can push your arm down, that means you don't have a lock, and that is… sometimes bad, and sometimes good. So the first thing I'm gonna do—

Sydnee: [snorts]

Justin: —is just see if you can match my pressure.

Sydnee: Okay?

Justin: If you *can* lock, that means that you can be tested via this method. Next! What—

Sydnee: I would—I would not be able to, because I have very poor upper body strength.

Justin: Uf—okay, fair enough. Next, I'm gonna see if you can be treated…

Sydnee: Oh!

Justin: … uh, so I'm gonna press on your umbilicus?

Sydnee: Uh-huh.

Justin: On your tummy, and if—

Sydnee: That's my belly button. My umbilicus. It's the belly button.

Justin: —if it *doesn't* lock, then you can be fixed. Okay?

Sydnee: [laughs] Wha—so—wait. Hold on. If my tummy doesn't lock?

Justin: No. If your—I'm gonna press the—any time I'm talking about a lock, I'm talking about you pushing up with your arm and me pushing back on your arm—

Sydnee: Ohhh, okay.

Justin: —yeah, sorry.

Sydnee: I was gonna say, 'cause I had a baby not too long ago. My tummy's pretty squishy. [laughs]

Justin: What I'm saying is that… I'm gonna be interfacing with your umbilicus a lot—

Sydnee: [amused] Uh-huh?

Justin: —and then you're gonna lock based on that, or not lock.

Sydnee: Okay.

Justin: The next thing I'm gonna do—and this is where it just… *goes* for it—is I'm gonna test for switching. And that means I'm gonna have you touch your pinky and thumb.

Sydnee: Uh-huh.

Justin: Okay? And then I'm going to have you press down, okay? And if you can maintain a lock, that means there's *no* switching. But if—

Sydnee: That means you don't have carpal tunnel syndrome.

Justin: [holding back laughter] –now—it—what is switching? Well—

Sydnee: [laughs]

Justin: —switching means that everything… or a lot of things will work in reverse to you. So, like, maybe you're somebody who drinks a lot of caffeine and it just makes you very tired. That's—

Sydnee: [laughs loudly]

Justin: —an actual example one of these cats uses. And—so, like, you have switching. So, basically what switching means—and this is very complex—is that anything that I *would* do for you normally, after your nutrition response testing, I would do [wheezes] [through laughter] the reverse of it!

Sydnee: Uh-huh.

Justin: It—it—it is so Calvinball. Okay, so the neck—

Sydnee: How—when this is being explained from, like, a practitioner to people who want to also practice it, like when you're training trainers, as soon as you hear something like that how are you not like, "Oh… so are we—this is—[whispers] this is fake, right? Like, we're—we're just doing this to fool people."

Justin: But, like, how does anybody in the system?!

Sydnee: Okay. Alright. I know!

Justin: Like, how is somebody *doing* that?!

Sydnee: I don't know!

Justin: I was reading an article about it and somebody was like, "I promised myself I'd keep an open mind about nutrition response testing." [loudly] *Why?!* Don't! Stop! Anyway—

Sydnee: Yes.

Justin: Uh, the next thing is "Find the problem." So I'm gonna press on areas, and keep testing for lock. I'm gonna test—test for a lock as I press on different areas of your body. They call it a body scan, right? And if you can resist, if you can lock, that means that there's not a problem. But if I touch a part of your body and you can't maintain a lock, then there's an issue there.

Then, this is the one that's, like… that is so baffling to me. You're gonna—uh, you—you put the person into—using another one of the, like, little method—I think you touch your middle and your thumb together—

Sydnee: Mm-hmm, mm-hmm.

Justin: —that puts you into priority mode. So they test the areas that there were weakness, while they put your body in priority mode—

Sydnee: [laughs]

Justin: —with your thumb and your middle finger touching—

Sydnee: [through laughter] Sorry.

Justin: —and that—and then if you can maintain a lock with that, that helps them to figure out if what the problem is the actual priority. So then they're going to test this part of, uh—uh—of the body that they've discovered is the priority that is actually the issue, and they're gonna test it… [exhales shakily] by… using test kits, that contain, and I'm quoting here, "homeopathic frequencies of different items."

They look like VHS cases with a bunch of vials taped to them.

Sydnee: [laughs quietly]

Justin: There's two different VHS cases, each of which have two different sides that they can test you with, and they contain the homeopathic frequencies of stuff like—there's one side of one of the VHS cases that is foods. There's another side that immune challenges. One of the sides of the VHS cases is chemicals.

And so they put that on you and they're like, "Okay." If you can—if you have weakness with one of those sides pressed against you, then they're like, "Okay, heavy metals. That's your problem. Let's, like—let's narrow it down. Let's figure out the exact—" and I know what you're thinking: "Where on Earth, uh, are—are people getting these test kits from?"

Well, good news is you can buy 'em from Dr. Ulan for $565.

Sydnee: Mm-hmm. Mm-hmm. Mm-hmm.

Justin: No *problem*.

Sydnee: Sure!

Justin: No problem. So then you—

Sydnee: That's so nice of him.

Justin: So nice. So then you would, um, put the—you'd get the vial of the stuff that's supposed to fix it? And you—[laughs] you basically would… put it on them, on their umbilicus again, and test lock; and if you can get a good lock, then that is the medicine that you need. And then you take out a certain amount of that medicine and put it in their hand [holding back laughter] to figure out the dosage.

So you, like, put one pill in, test for a lock. Put two pills in, test for a lock.

Sydnee: So why—I'm—I—okay. Why do—

Justin: Yeah?

Sydnee: —let's—[laughs quietly] let's suppose, for a second, that you actually have some sort of—that any of this makes sense. Why—what is their rationale, people who believe in this, what is their honest-to-goodness rationale for why putting a substance on your body that you supposedly are deficient in… will—will—why—why placing it on you would help fix that deficiency. Why—why—

Justin: It's… you—for this to work, for—for—for this to work, um, you have to accept the idea that there is *energy*. Um—

Sydnee: So it's the energy of the substance that will fix you, not the substance itself?

Justin: No. It—the energy of the substance is being used in the diagnosis, right?

Sydnee: But why would it—but, like, if you put the correct substance on their solar plexus or whatever, it will f—it will make them lock.

Justin: Right. But that's not a—

Sydnee: And so you've kind of fixed it.

Justin: Yeah, but they can't hold pills to their tummy all the time. And also what you're talking about is a diagnostic method. So, like, the—the problem could be with your… uh, pancreas or something.

Sydnee: Uh-huh.

Justin: And—and, you know, you could tell that obviously because, I don't know, their… left ear produce—it didn't produce a lock, or something like that.

Sydnee: Ahhh, I see.

Justin: So it's like, "Oh, your problem is the pancreas, so take this medicine." [pauses] You get—you get it?

Sydnee: I mean it—yes. It still doesn't make sense, but I understand the sense they're trying to make it make.

Justin: [laughs] Um—

Sydnee: I just—if I—if I find somebody is deficient in Vitamin D, [holding back laughter] which I find by having them have a blood level of Vitamin D drawn—and then if it's too low, I give them a pill and say, "This is Vitamin D. You should swallow it."

Justin: Syd—

Sydnee: "And it will go inside you. And then—"

Justin: Syd—

Sydnee: "—[holding back laughter] you will have more Vitamin D."

Justin: Okay, okay. Well—alright. Part of this is not necessarily—treatment is sometimes. But a lot of times what you're looking for is allergies. [pauses] Does that make se—

Sydnee: [simultaneously] Okay.

Justin: And—real and imagined. Like, allergies to—"Oh, you have—there's, like, toxicity in your water. Do you dr—" I saw one of these videos—

Sydnee: Oh, no…

Justin: —I wanted to leap through the friggin' screen. The guy's like, "Have you been drinking tap water?"

He's like, "Yeah, until a couple years ago. I—I stopped."

Like, "Well, there's your problem."

Like, honestly dude? Fall down a well like baby Jessica. I am—

Sydnee: [snorts quietly]

Justin: —like, I have zero patience. Like, so you're gonna bring down tap water too? Like, *seriously*. *Seriously*.

Sydnee: Yeah. That's a—that's a very dangerous message to send to people, because, um, all those plastic bottles from bottled water we already know are—are a problem. A lot of people can't afford to be constantly buying, um, bottled water.

Justin: We can't—we can't get back onto water.

Sydnee: Sorry. And—

Justin: I know, I know. I'd love to go all in on tap water right now. I cannot—

Sydnee: I know. The majority of—let's just say, the majority of places, your tap water is safe. And when it's not, we usually know about it. Not that the government does anything about it, but we know about it.

Justin: And a lot of it is even more—okay. So, if you search for nutrition response testing, the very first video in the results, at least for me, featured a practitioner helping her patient to *get off of* his hypertension and diabetes medication.

Sydnee: [groans]

Justin: So a lot of times you're testing for—"Oh, you—you're having a reaction to your medication. Let me figure out a way to help get you off of it." So it's like—

Sydnee: Oh… I don't like that.

Justin: —yeah, no kidding, Syd! So it's very legitimate. And here's a thing that's gonna mess y'a—y'all up. Not necessarily—applied kinesthesiology is bunk there's no… there's nothing to support it. Um, it is—

Sydnee: Right. And—and to—to back that up, I looked up some studies on this.

Justin: Yeah.

Sydnee: Just to—just… I mean, I had no reason to think it was real, but it always helps when somebody's done the—done the footwork and figured it out. They did a study where they, um—and, I mean, it wasn't a huge study. This was only—you know, it was less than 20 people. But, um—like, practitioners. But they had check the same patients, and what they were looking for was if two different people who practiced this tested the same patient, would they get the same results?

Uh, if they… actually said they had some sort of deficiency, let's test them and see if they have it. Were they right? If we replace the deficiency they say they have, either with the real substance or placebo, does it make a difference? And can they accurately judge muscle strength? So let's actually test the strength of these muscles versus what they say is weak and strong.

And basically what they found was all of it was fake, all of it was made up, you have—random guessing is as effective as nutritional response therapy.

Justin: Uh, now here's the thing that's gonna mess you up about applied kinesiology. Uh, it is used by… uh, in—in—in North America, it's used by 37% of chiropractors. [pauses] So—or—utilized, or at the very least sort of, like, supported. Um, but in the studies that I found, utilized by, like, a third of chiropractors. Um—

Sydnee: That's very—that's very concerning. I didn't know chiropractors. were doing this, and we've never gotten in to chiropractic medicine, and… in part, it's one of those things where, like… there are a lot of things that have bad roots, and so if you start to get into the roots of chiropractic medicine, it sounds really fishy. But then that doesn't necessarily mean that all chiropractors who are practicing today are doing these fishy things, are doing these totally dangerous, non-evidence-based things.

Um… [sighs] but obviously this is—if your chiropractor's doing this, I wouldn't go to them. I would leave them.

Justin: That's why I wanted to, like, mention this, is, like, it—maybe you've had a chiropractor do this. [holding back laughter] Uh, they are… maybe not the best fit for somebody that actually wants things to be better.

Sydnee: Yeah, because how can you trust anything else they're doing if they're doing this?

Justin: So the question—the—the last thing I wanted to touch on it why—why? 'Cause, like, for some people this—you watch the videos and stuff and it's like, "Well, why are they able to do this sometimes, and not able to do it other times?"

Like, it seems that way, right? Um, one test that you'll see that's very interesting is, uh—and this is more of the kind of test that you would see, like, an actual scam—like, a huckster try to do, right?

You can have someone put their arms out and press on the top of their arm and knock them off balance, and you put the—you know, something at their umbilicus that's supposed to improve their, uh, uh, strength. And in—in one—I—in one of the things I read, they—they, uh, used vials all the time, and this person's problem was work. They worked at Boeing, and they said they couldn't have a vial of Boeing, so they just had the person think about Boeing, think about their job, and then they were able to knock them off balance.

And a lot of it can be done by pressing people—pushing people different ways. Like, trying to knock them off balance versus a way you can push their arm down that—that is just going to make them more stable. It's, like—it's complete, just… bogus.

Sydnee: And that's—that's so frustrating, because if you—so you take away, like, the—obviously it's dangerous to tell people to stop taking their anti hypertension medications or their diabetes medications. Obviously that's dangerous. I mean, I think we—we all know why. Strokes, heart attacks, um—

Justin: Yeah.

Sydnee: —losing your eyesight, your feet, kidney function—lots of reasons why this is dangerous. But if somebody is having—if—if your problem—let's say your problem really is your job. Let's say that you feel bad because your job is so—like, it makes you so miserable, you are so stressed out, it's creating depression, it's creating anxiety, because there is a thing in your life that is *harming* you to a physical extent, which can happen!

Relationships can do that. Situations, work environments, all kinds of things can do that to our bodies, and that's truly why you're feeling bad. Then there is a way to confront that and discuss that with, like, a—with a therapist, with a psychologist, with a counselor, with your family, with your friends, with the people at your work. There are ways to tackle that and confront that and decide if this is really a healthy thing in your life or not, and you don't need fake science for that.

Justin: The—the other—that's—you're exactly right, Syd. Um, but I do want to mention, for some people—the true believers, this still works, even if they're not doing a fake way of pushing your arm to make you fall off balance.

This still works, and the—the reason why is actually the same reason that Ouija boards work. It's called the ideomotor phenomenon, and basically, uh—the short version is that a part of your brain—I believe the left parietal lobe? Um, can cause your muscles to move without your conscious brain realizing that it's doing it, so you—you—the same way that you can put your hands on a Ouija board and it can seem that it's moving, when in actuality, uh, it's your subconscious mind, proved by if you put a blindfold on, then the spirits or what-have-you lose the ability, somehow, to communicate through you through the Ouija board.

In the same way, the—the—your response to whatever the test is, you may not think consciously that you're doing it, but you are the one that is deciding whether or not your arm will move or not.

Sydnee: High school Sydnee is so disappointed that you just debunked Ouija boards.

Justin: Sorry. Uh, the—there's a well known skeptic named Ray Hyman who wrote about how he and another skeptic—they did this test on applied kinesiology. And I wanna wrap this year.

So this group of chiropractors claimed that they could, uh, tell when a patient had glucose, which they figured was a *bad* sugar, and fructose. Fructose, a *good* sugar, by putting—

Sydnee: Interesting. Okay.

Justin: —by putting a drop of the dissolved sugar on a patient's tongue, and then they tested the muscle strength, right? So you had… this is still applied kinesiology. It's the same idea. But they claim that they could tell by testing the muscle strength whether or not the patient had had good sugar or bad sugar.

Sydnee: Okay.

Justin: So fruit sugar or glucose. Uh, and they—they—they could tell which is which, by testing the muscle response. They *could* tell the difference between the good sugar and the bad sugar… as long as they knew which was—as long as the chiropractors knew which was the good sugar and which was the bad sugar.

When they did not know that, uh, when they were put under double blind conditions—

Sydnee: Ideal research conditions.

Justin: —they failed. Ideal research conditions. It didn't work. And this skeptic writing this piece that I was reading, uh—he said that when the chiropractors came to him, to Ray Hyman, and said—and this is a quote—"You see, this is why we never do double blind testing anymore. It never works."

Sydnee: [laughs]

Justin: And he says in there that he thought initially that he was joking. But what this guy is saying, that he believed in this so hard that it had to be the testing that was—that was wrong, because he believed in applied kinesiology so hard.

So, uh, that is—that is all I have to say about that and nutrition response testing. Uh, be… just be careful out there! Be careful out there.

Sydnee: Yeah. Don't—don't waste your money on this. This means nothing and if your chiropractor is doing this, I would, um, consider going elsewhere.

Justin: Yeah. Your chiropractor is—is perhaps… uhh… not the best fit. [snorts] Uh, so that is going to do it for us this week, thanks—

Sydnee: Good job, Justin!

Justin: Thanks, Syd! I did my best.

Sydnee: You researched—this was a completely fake thing, but you did well! You researched it well.

Justin: Oh—

Sydnee: You found that study. You didn't even mention it. The study I found in the *Journal of the Academy of Nutrition and Dietetics*?

Justin: Yeah?

Sydnee: The one that I cited?

[baby laughing in background]

Justin: Oh, yeah. I found it too?

Sydnee: You already—you had it in your notes! You found the study!

Justin: Uh—oh, oh, oh! Um, doc—I forgot the most important part of Sydnee's job on *Sawbones*. Uh, Dr. Goodheart died in 2008.

Sydnee: [laughs quietly]

Justin: I—you always have to say that the person died, otherwise it's a question so.

Sydnee: [holding back laughter] Sorry.

Justin: I just wanted to mention that he did die in 2008.

Sydnee: Geez, Justin.

Justin: You know, also, another trivia about Goodheart? Uh, he was the first official chiropractor of the US Olympic team! Uh, folks, that is going to do it for us. Thanks to… everybody. Thanks to everybody, uh, for listening and for being so kind to us, and reviewing the show on iTunes, and preording our book! Bit.ly/thesawbonesbook. Go preorder it now. Please, it really helps. And, uh, that's gonna do it for us, folks. So 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!

[theme music plays]

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