

Sawbones 39: Magnets

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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.

[theme music plays]

Justin:

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

Sydnee:

And I'm Sydnee McElroy.

Justin:

Sydnee I want to take the opportunity of this week's episode to congratulate you on finally getting your driver's license.

Sydnee:

Well, thank you Justin. It's not... I mean, it's not finally like the first time though, to be fair.

Justin:

Is such a proud moment for any husband—

Sydnee:

Well, no.

Justin:

When his wife finally can take to the road. Experience the freedom of the wind in your hair.

Sydnee:

I mean, I had a license. I did... I got it when I was 16. I just, I just let it expire.

Justin:

Hard. You let it ... You didn't let it expire. You watched it die for a year.

Sydnee:

I— I did, I didn't even know it had expired until it was like eight months over—

Justin:

America.

Sydnee:

Eight months gone.

Justin:

Surrounding nations, Earth. This is not a goof. Sydnee did really let her license expire so hard that she had to return to the DMV for a, frankly inspiring three-hour... You know we shouldn't have like a meetup. Hey, wanna meet your old pal Justin and Sydnee? Come to the Huntington DMV. Forever.

Sydnee:

We were at the Huntington DMV all morning, Monday morning, this morning because I had to take both the written examination as well as the practical test. And I studied for them.

Justin:

You did. And you did a great.

Sydnee:

That stuff is kinda tricky.

Justin:

It is, they change the laws every— every now and then.

Sydnee:

They do. You wanna know how far away from a stop sign you can park? You just ask me.

Justin:

I will. But you had to because you're, I'm going to LA for E3 pretty soon and you have to be able to get around.

Sydnee:

I know, I wasn't going to walk everywhere.

Justin:

Yeah.

Sydnee:

Come on. I'm gonna be so pregnant by then you're gonna leave me to walk. So in his own defense, to save him from the guilt, Justin forced me to go get my license renewed.

Justin:

Yeah.

Sydnee:

While you're gone you can't forget to bring me back a magnet.

Justin:

Yes, I will. We, pretty much every place we've gone unless there's like such a small population they don't have magnet production abilities we retrieved a magnet and placed it upon our refrigerator.

Sydnee:

And not the most original—

Justin:

No not really.

Sydnee:

... of tourist treasures but and you know you say—

Justin:

But they're ubiquitous sometimes.

Sydnee:

They are ubiquitous but you said even places where they don't make magnets we, do you remember we did get one in Honduras and tried to make it into a magnet.

Justin:

Yes we did try to fashion it—

Sydnee:

We never made it into a magnet but that was the plan.

Justin:

We said that. "Yeah, we'll make this into a magnet, no problem."

Sydnee:

We bought a little wooden thing and we're like yeah, we'll just glue a magnet to the back of it and stick it to the fridge.

Justin:

Sound like something we'd do.

Sydnee:

We'll never do that.

Justin:

No. We have a— a fridge that's just littered with magnets. I'm worried it's gonna be... We're gonna put your driver's license up there once your official one arrive.

Sydnee:

Thanks. I know once my federal ID arrives I'll put the paper one—

Justin:

Putting a lot of pressure on our, on our forthcoming child, it's like well got fridge full of magnets. How, how about it what you got?

Sydnee:

Draw something.

Justin:

Draw something.

Sydnee:

Get an A on something.

Justin:

Get an A on something.

Sydnee:

I need a smiley face. I need a gold star. I need something to put up there.

Justin:

Great job sticker, anything.

Sydnee:

Come on kid.

Justin:

Because otherwise they are utterly purposeless.

Sydnee:

Well, I mean not completely.

Justin:

Well, what? Like how so?

Sydnee:

Well there are other things you can do with magnets.

Justin:

Give me... name one thing.

Sydnee:

Well, okay. Maybe that you can't do with magnets but maybe that people thought you could do with magnets.

Justin:

Okay, I'm into it.

Sydnee:

Like cure disease, maybe.

Justin:

Oh boy. You're gonna turn this into an episode. I thought we were just having a pleasant conversation about magnets.

Sydnee:

Because that's what people love to hear on the internet. They like to listen—

Justin:

Talk about bureaucracy, [laughs] travel plans. It's got everything.

Sydnee:

And the magnets on our fridge. Do you want me to just go downstairs and start describing them one by one?

Justin:

D— did somebody suggest this? I feel like someone suggested this.

Sydnee:

Somebody did, Ross suggested this.

Justin:

Thank you, Ross.

Sydnee:

Thanks Ross.

Justin:

You're a great person.

Sydnee:

So, I want to tell you about magnets but I want to start with... as I was reading about magnets as medicine, I came across a couple places where they listed like the legends of where did magnets come from? I don't really think these are, I don't know, maybe these are considered legends. So one is that there was a Greek shepherd named Magnus.

Justin:

Mm-hmm.

Sydnee:

And that he noticed th— there's a certain stone that has magnetic properties called a lodestone. This was actually a lodestone or a guiding stone, is what was in a compass originally used by a sailor to navigate. So he noticed that his iron staff was attracted, it was like, pulled towards the Lodestone. Or perhaps the iron nails in his sandals were. Seems like a big difference for the myth.

Justin:

Yeah.

Sydnee:

One of the two, though, made him come up with magnetism. The alternative theory that I found is that there's an area in Greece called Magnesia, where there are a lot of volcanic rocks that have magnetic properties.

Justin:

Is there a milk of magnesia?

Sydnee:

Yes, that's magnesium though.

Justin:

Okay. Oh well.

Sydnee:

So, but you're right. I wonder if they come from a similar...

Justin:

What's wrong with their cows? I think is the big question. Seems pretty rough there for the cow population.

Sydnee:

[laughs] That's a whole other issue. That's not really milk. If you, are you ever drinking that as milk?

Justin:

No.

Sydnee:

Hold on.

Justin:

No.

Sydnee:

Don't drink that as milk. Are you putting that on your cereal?

Justin:

Never.

Sydnee:

Don't dunk your Oreos in milk of magnesia.

Justin:

Never again.

Sydnee:

That's a whole issue. So either way, somehow, we came up with the word magnet, maybe it was a Greek and his sandals. Maybe it was... Either way it's Greek. So we'll leave it there. But as long as we've understood that there were magnets, we've tried to use them to help us, cause they seemed magical, I guess. I guess this was the idea. Magnets had this kind of weird, magical ability to pull things towards them.

Justin:

It is the close— I mean, like, if you don't know, if you were to ask yourself, magnets, how do they work? And you don't know the answer to that question, it would seem, I grant you, magical. Because it's one of the few things where like, I mean, gravity. Okay, I guess that draws one thing towards another thing, but like kind of the most boring way possible. If you didn't know anything about mag— I think that does seem like the closest we have like, observably magical force.

Sydnee:

It isn't that what Insane Clown Posse was fascinated by?

Justin:

Yeah, that's what I was saying earlier. When I said, "Magnets, how do they work?"

Sydnee:

Then I thought that was an inadvertent?

Justin:

No, it was it was advertent. Just perhaps not advertent enough for my beloved wife and co-host. [laughs] But next time, I'll put some makeup on before to just really nail it down.

Sydnee:

[laughs] It's been a rough day. I've been at the DMV all day. This fascination is grow— has been cross-cultural. The Greeks, the Chinese, the Egyptians, all tried to use magnets, usually the same naturally-occurring lodestone form of magnet for something. Aristotle tried it for pain, just kind of put these magnets on you...

Justin:

Maybe...

Sydnee:

Maybe?

Justin:

Maybe your disease is metal?

Sydnee:

The Chinese mentioned it in their pharmacopeias for many different ailments. A lot of this was based on the idea that if magnets pull on metal, maybe they pull on disease?

Justin:

Also we don't know what drugs.

Sydnee:

We don't know what germs are... We don't know what disease really is.

Justin:

For all they knew, diseases were made of metal.

Sydnee:

That well—

Justin:

Maybe they're predicting nanobots. Someday, when all disease is caused by nanobots are wiping out the planet, you will be happy for magnetized medicine because that is the only thing that will be able to stop them.

Sydnee:

Because it'll rip them from your body forcefully through every pore of your skin. That's probably not a good way to do it.

Justin:

Uh, the, you mentioned the Chinese... it's funny you should say that because I— this is one of my very few additions we talked in the Eternal Life episode about Alex Chiu, the guy who made the eternal life rings.

Sydnee:

Yes.

Justin:

And those were based on those, those have... those were neodymium magnets in rings. That's what he was using. So he said he was basing it off of Chinese medicine so that it was, it was off of these practices that he created his eternal life rings and foot braces.

Sydnee:

So really sound medical basis here.

Justin:

Old at least.

Sydnee:

Really old medical grounding.

Justin:

I don't know why you refused to respect your elders in the same way that Alex Chiu does.

Sydnee:

Well, I'm mentioning them.

Justin:

That's true. You're giving them a passing—

Sydnee:

Giving them credit for this bad idea.

Justin:

Passing nod in our podcast.

Sydnee:

So they, they tried to attract disease out of the body and they thought it probably had something to do with fluids in the body and forces in the body

and might... Why not respond to magnets? We don't know what else they would respond to. Cleopatra was into this.

Justin:

Oh yeah?

Sydnee:

She wore a magnet on her forehead. Some say to bed, others say just all the time. One way or another she wore it on her forehead to maintain her beauty and her skin, was the thought.

Justin:

I bet she made that look work though. I bet by the end—

Sydnee:

We know she did, it's Cleopatra.

Justin:

By the end of the year everybody was wearing magnets. Couldn't even find one.

Sydnee:

Which I wonder what the magnets really looked like at the time because we're talking about pieces of rock.

Justin:

I just think they found, right? They probably didn't know how to make magnets.

Sydnee:

No, I'm not—I mean, it's not like something that says like, "Everything's great and Oklahoma" or whatever. [laughs]

Justin:

I'm fairly sure, I'm fairly sure. Moreover, how did she get it to stick to her head? What, they have glue too? Man, this is a great country, I'm surprised they didn't even—

Sydnee:

Some sort of band?

Justin:

Perhaps. A sweatband? An "Everything's great in Oklahoma" sweatband? [laughs] "Everything's great in Oklahoma" magnet. Sorry, was it "Everything's great in Oklahoma"?

Sydnee:

Everything is great in Oklahoma.

Justin:

Just to clarify, they did not go with OK. They said everything's *great* in Oklahoma is what the magnet said, if you were to read the magnet that you came up with. How long was this day? Where you at the DMV longer than me, like before I got there? [laughs]

Sydnee:

Look, I don't design magnets. I never claimed to be a magnet expert. [laughs] I don't know, Oklahoma are you looking for a state motto? Maybe try it out.

Justin:

Maybe try everything's great in Oklahoma. [laughs]

Sydnee:

Do you know— Do you know what's better than OK? Great.

Justin:

Great is, yeah. Finally they're going for the gusto. [laughs]

Sydnee:

Some people said she wore it to help her sleep. And then there's this great theory that I read based on that that oh, perhaps it stimulated the pineal gland to release, one of Justin's favorite substances, melatonin?

Justin:

Yeah. I take that every night.

Sydnee:

I do not know of any research that says magnets will force you to release more melatonin, or that melatonin is magnetic in any way. But that was one theory. It was also in the same time period the Romans were advising it for gout. Magnets for eye diseases. The French were using it for headaches soon thereafter. But one of our favorite medical figures throughout history.

Justin:

My boy, Pliny?

Sydnee:

Pliny. He had something to say about it. Pliny said, "You know what?"

Justin:

Pliny the Elder.

Sydnee:

Pliny the Elder. Yeah, not the younger. Don't get it twisted. I don't know what Pliny the Younger did, but it wasn't as impressive. But you can read about that.

Justin:

I'm sure it's on the internet.

Sydnee:

Yeah. So, Pliny the Elder said, "You know, maybe we could actually instead of just holding magnets against our bodies and hoping that they're doing something internally. What if we pulverize some of these magnets?" And again, we're just kind of talking about stone. "And then put it all over any burns we have?"

Justin:

Uh, I don't, I mean. Sure, you could try it, Pliny. I don't know what you're going for.

Sydnee:

I don't know. There's no evidence that pulverized magnets are good treatment for burn. Don't do that.

Justin:

Yeah.

Sydnee:

Don't use that on burns. But that was Pliny's idea. It was at least original.

Justin:

Yeah.

Sydnee:

But when we're talking about the history of magnets in the 16th century, it was a Swiss physician Paracelsus, who really kind of made magnets popular, and with, in a lasting sense that keeps it around today.

Justin:

Okay.

Sydnee:

So he brought it back into style using it for, I mean, all kinds of different diseases. Everything that had been used for before, mainly pain complaints. Again, just by putting, you know pieces of lodestone up against your body in different places that hurt. Also, you could crush it up and put it in some water and then drink it.

Justin:

Oh, that seems like that could be really unhealthy.

Sydnee:

That does seem like a really bad idea. And that was the treatment for poisoning. Which seems like it would poison you.

Justin:

More. Yeah, what with the magnet dust and everything.

Sydnee:

Right? You'd get more poisoned from it. You could also use that to cure baldness.

Justin:

Like Wooly Willy? Just drag it up there?

Sydnee:

That's what I thought, maybe you could hold a magnet over your head and wait for the hair to come up.

Justin:

Sure. Yeah.

Sydnee:

Or muscle spasms. That would hopefully be a topical application and not something you would drink.

Justin:

Yeah, I think the less magnets we can drink, the better.

Sydnee:

He threw in there two ulcerations, diseases of the bowl and uterus, in internal as well as external disease. Which pretty much covers all disease I think, diseases either internal or external. I don't know of a third option.

Justin:

No. Spiritual?

Sydnee:

Spiritual disease. The in-between disease, the middle, middle disease, I don't know. That's it. So the way he thought that they worked is that they were quite— we're kinda moving into like the humors now.

Justin:

Sure.

Sydnee:

Well, I mean, we've been in the hu— I should say this, by this point, we are well into humor theory. But instead of the idea that it just pulled disease out of the body, we thought magnets could kind of push fluids around to balance out the humors. So one popular use that Paracelsus advised was for hysteria.

Justin:

Which we've established in previous episodes is not necessarily a thing.

Sydnee:

No.

Justin:

That exists and is real.

Sydnee:

No, it wasn't a thing. It was a name used. And there's a whole episode we did on this. But just to remind you, hysteria was a term we use for women behaving in any way that men didn't think they should behave.

Justin:

It was to keep your woman in line, basically.

Sydnee:

Yes.

Justin:

When your woman got out of line.

Sydnee:

When you're what now?

Justin:

When you're wormin, your wurman. Women got out of line.

Sydnee:

Are you okay over there?

Justin:

Wom— hysteria diagnosis.

Sydnee:

Why don't you drink some magnets, and straighten that out over there.

Justin:

Okay.

Sydnee:

So, the reasoning behind hysteria was that your uterus is moving all over the place and just driving you crazy.

Justin:

Get back here, uterus!

Sydnee:

So you could use a magnet both above and below the uterus like one up around your head and one kinda between your legs and use them to position the uterus back, back where it needed to be.

Justin:

Like many popular fair games.

Sydnee:

[laughs] That's what I thought. It seemed like that or maybe like a challenge on double dare, like a physical challenge. [laughs] I have a giant body and there's a uterus floating around and one kid's on the top of the magnet and the other kid's on the bottom and they're trying to pull the uterus into place.

Justin:

If our kids can get the uterus back into place, they're gonna go home with a Sony Walkman.

Sydnee:

[laughs] Aw, I was hoping for the Casio keyboard.

Justin:

And a Casio keyboard also.

Sydnee:

All right! Can I get PK knights?

Justin:

And PK knights and a trip to space camp.

Sydnee:

This is the best episode ever. They're never gonna make it though.

Justin:

They won't, they're gonna get stuck on that junk tryna find the uterus in that giant waffle.

Sydnee:

They're never gonna make it up that slide. That's the problem. So you could use it for hysteria. You could also use it, let's say somebody has epilepsy, they thought it had to do with too much fluid of some sort in the brain. So you could use it to kinda push fluid out of the brain. Again, I guess this isn't a particularly dangerous treatment. If you consider some of the other stuff that was going on at the time.

Justin:

We could do worse and we have and we will.

Sydnee:

We have done much worse. Because you're just holding magnets above the head like, "Get out of there fluid, fix the seizures." The court physicians for Elizabeth the first and later on Charles the second both used magnets on their royal clients, as well as wrote texts recommending them for the general public.

Justin:

Super fashionable.

Sydnee:

So they use them for pain and for sleep, for inflammation, also for bleeding.

Justin:

Again, I'm not sure that that would work.

Sydnee:

I wonder at the time though, if you, if you pulverize something and kinda make it into a powder if it's some kinda stone, and then you've got an open wound that's bleeding and you just put it in there. You're gonna absorb some of that. I mean, maybe they were stopping bleeding. I mean, part of it could have just been pressure.

Justin:

Yeah.

Sydnee:

Put all this stone here and then wrap this bandage around it, hold it into place.

Justin:

Yeah. If your control group is just a guy bleeding, like certainly, certainly gonna be better than that dude.

Sydnee:

Anybody who didn't die from any kind of wound was pretty much a success story back then. It's like you lived, we win, magnets!

Justin:

Magnets. That was it the whole time we figured it out. Close the books on medicine.

Sydnee:

There was a German physician later who advised that you mix it with milk. Any kind of magnetic like dust that you can make into a fluid, put it in some water, dissolve it or just dilute it, mix it with milk and drink it for oedema, so swelling, which I think I'd rather just be swollen personally.

Justin:

It seems like we don't get particularly creative with magnets. It's sort of like, crush it up, eat it, rub it on you. We think they're magic. Maybe they are or we don't. Just like, do something with magnets.

Sydnee:

We really had no idea other than that, they seemed really cool. And so we really wanted them to have something to do with medicine.

Justin:

Right. That makes perfect sense.

Sydnee:

There were two physicians, Stokes and Bell who were pretty famous for a variety of— Bell's Palsy, for instance, Cheyne-Stokes respirations. You don't know these references. There are people out there who get them though.

Justin:

Yeah.

Sydnee:

Anyway.

Justin:

Cong— congrats you too.

Sydnee:

They've got stuff named after 'em. They're famous.

Justin:

Got it.

Sydnee:

So they treated... I like this because they treated one patient's shoulder pain. this is in their literature, with a 20-pound magnet and they thought that that cured it. I just love the idea of two like really famous, brilliant

physicians standing there with a 20-pound magnet on some guy's shoulder just like hold still—

Justin:

Wait.

Sydnee:

This'll work.

Justin:

"You're gonna feel so much better."

"I do feel better now that you've taken the magnet off, because it weighed 20 pounds."

Sydnee:

Hold still. Around the same time, we've already done an entire episode on him, so I'll just throw in there one of the most popular proponents of magnetism was Mesmer.

Justin:

Oh Mesmer, creator of the thinnest excuse for dirty, dirty orgy who ever lived.

Sydnee:

A lot of his theories with, he tried magnets just using them on people. And then he also put people in magnetized baths, and we talked about that. But this, this made it a lot more popular. And in the U.S. in the 1880s and 1890s, of course, this was the patent medicine era. So we're talking about all kinds of product opportunities with magnets. So as magnets spread across to the U.S. we were basically putting them into any kinds of jewelry or clothing, anything you could wear, hats, shirts, pants, dresses, underwear anywhere, you could put a magnet, put it in there and sell it to people. There was one magnetic outfit that was sold at the time in Colliers that had 700 magnets sewn into it in various places.

Justin:

I saw Lady Gaga wearing that at the VMAs.

Sydnee:

Lady Gaga would totally wear that.

Justin:

Would totally wear that outfit made of magnets.

Sydnee:

There was also in 1890, Daniel David Palmer opened Palmer's School of Magnetic Therapy in Iowa.

Justin:

It's a short, it's a short program, where he walks to the front of class and says, "I dunno, put a magnet on it."

Sydnee:

Everybody goes, oh, okay.

Justin:

That'd be \$300. Here's your diploma.

Sydnee:

If you've ever heard the name, Daniel David Palmer, it's because he later went on to invent chiropractic medicine. Abandon the magnets, he started with a magnetic school. And then he built a chiropractic school onto it and then eventually said, "You know what, I don't know that this magnet thing is working so well. Maybe I should stick with the thing that works."

Justin:

I wanna get out of the magnet game.

Sydnee:

I'm going to stick with chiropractic medicine. So that's the inventor of chiropractic medicine, which is kind of neat. In the 1940s, so we're moving way into the future, magnet therapy became very popular in Japan. And that that is really where a lot of the research that was done and a lot of what is popular today, kind of started. They started using it in conjunction with acupuncture and then on its own, putting magnets in knee pads, shoulder pads for various pain complaints. That's where we started to see all the magnetic bracelets and necklaces that you've probably, you can find online. I found ads for them the entire time I was trying to research this topic. Every page had an ad for a magnetic bracelet. I'm going to be getting those forever now, aren't I?

Justin:

Yeah. Yeah. A lot of emails.

Sydnee:

I should've researched it on your computer.

Justin:

[laughs] So how did, how did we use them Syd?

Sydnee:

Well, I'd love to tell you about that, Justin. But unfortunately, you're going to have to visit our billing department again first, because you owe us a pretty hefty sum.

Justin:

Wow, that education really adds up. All right, let's head over to the billing department real quick.

[theme music plays]

[ad break]

Justin: Alright, that's it. I've paid my dues. Sydnee how, how do magnets work? I guess, how do we use magnets? More accurately.

Sydnee:

Yeah. Let's try that. So you wanna know how we use magnets? Well, there's—

Justin:

Cause nobody actually knows how magnets work. PS, we can all have a hearty chuckle at our friends in the Insane Clown Posse. If I were to sit you down and say, "Hey, how do magnets work? Actually spell it out for me." 95% of you would say well, you know, metal in the North Pole. And I have a little imaginary picture of a lightning bolt I've seen in diagrams.

Sydnee:

I think there are people with degrees in physics who know how magnets works.

Justin:

I'm saying there are people, I'm saying that by and large, we don't. We were too hard on them.

Sydnee:

I'm saying that when I was in college in undergraduate studies. And I took those classes I understood how magnets work. But I'm a biology major. And I'm a doctor. And so I've conveniently forgotten.

Justin:

Okay, smarty pants. Tell me, tell me.

Sydnee:

So I'll tell you about fake magnet medicine.

Justin:

Tell me.

Sydnee:

So there are static magnets. And that is what you're largely seen. If somebody is trying to sell you like, a magnet bracelet, or a mattress lined with magnets, that's out there. You can buy those.

Justin:

Sure.

Sydnee:

A mattress lined with magnets. What they're talking about are static magnets. So basically, what they're saying is, you're gonna put this magnet on a part of your body or your— they're going to embed it in like a band or something like a little encapsulated magnet that you'll wear or that you'll lay on or that you lay on you. And it's going to apply some sort of force to your body to improve what they usually say is blood flow and circulation, that's usually what you'll read is they're trying to improve blood flow to that part of the body.

Now to give you a like an idea of how strong these magnets are, that we're trying, these are the things that are commercially sold. So the strength of a magnet can range anywhere from 200 to 10,000 Gauss is the unit that you measure the magnets in and 10,000 Gauss equals a Tesla. The point is for good reference, all those magnets on our fridge, so your usual fridge magnet, is about 200 Gauss.

Justin:

Okay.

Sydnee:

That's about how strong that magnet is. So now you have a gauge. The magnets that you use in all these commercial products in medicine, are somewhere between 400 and 800 Gauss usually.

Justin:

So like four fridge magnets.

Sydnee:

Yes.

Justin:

Two to four fridge magnets.

Sydnee:

Two to four fridge— fridge magnets of strength. [laughs]

Justin:

All right.

Sydnee:

As you can imagine, that doesn't—

Justin:

Seems like people could use that as a measurement instead of all this Gauss nonsense.

Sydnee:

Fridge magnets? How many "Everything's great in Oklahoma" magnets do you have to use to cure your headache? So some of the magnets are unipolar. Which can be confusing, I don't actually mean they only have one pole. I mean they have one pole at one end and one pole at the other. So a North and a South end.

Justin:

Okay.

Sydnee:

Which seemed like should be bipolar to me, but it's not.

Justin:

It's not.

Sydnee:

Bipolar magnets are like a sheet of magnet that have alternating North and South poles all across them. So the current is weaker because they're next to each other.

Justin:

Okay.

Sydnee:

You get that.

Justin:

Got it.

Sydnee:

These are done at home, these are commercially sold. And again, the, the theory is that they're going to attract the blood flow based on the iron and your hemoglobin and your blood and you're going to pull blood towards things. But as—

Justin:

Okay, so it doesn't, I mean, does it?

Sydnee:

Well, when you stand close to the fridge— [laughs]

Justin:

I feel.

Sydnee:

Do you feel the pull of your blood, moving in that direction?

Justin:

I mean I feel better, but usually because I'm about to get something out of the fridge to consume it.

Sydnee:

Well imagine how many magnets are on our fridge, if you like got close enough and this made sense, it should like suck the blood to like the front of your body like to your hand as you reach for the fridge, your hand should become engorged with blood.

Justin:

I do get excited right before I open the fridge, but I think it's just I get jitters. What am I gonna get? I don't know, I have three kinds of cheese cakes in here.

Sydnee:

We do.

Justin:

We do have three cakes.

Sydnee:

We gotta hurry. I gonna get to that cheesecake.

Justin:

Yeah. Pregnancy has its benefits though.

Sydnee:

There's also, there's also more complicated magnets that they use moving magnetic fields and something called pulsed electromagnetic therapy, which is sort of related to this, but actually kind of real in some settings. So I'm not going to get into that.

Justin:

Okay.

Sydnee:

But there's related therapies, such as that, th— transcranial magnetic stimulation that use magnets similarly, but not exactly the same. So most of what you're buying over the counter or online, are the static magnets. And there is... so the evidence for this is that they do not work in any way.

Justin:

The evidence is that there is not evidence.

Sydnee:

The evidence is there, there is not evidence. They're not strong enough to attract iron in your blood. There's no effect on blood flow and circulation whatsoever. There's been subjective evidence of pain relief. So people have, they've done small studies and said, "Yeah, I think I might feel better with this magnet on." But the problem is a lot of the studies are very small.

They're not well randomized. So there are differences between the study groups that could account for their differences in results.

Sydnee:

They're also not well blinded, which means that, so you know, if you give somebody a placebo pill, and you give the other group the real pill, most of the time, they can't tell which one they're taking. Right?

Justin:

Right. Cause it's just a pill.

Sydnee:

Yeah, it's just a pill. Well, most people can figure out if a magnet is real or not. [laughs]

Justin:

Oh, that's true.

Sydnee:

If you send them home with a magnetic bracelet, they could probably piece together if it's really magnetic bracelet.

Justin:

Yeah, that's, yeah, very good point.

Sydnee:

Which really throws off the results. So are any of these really blinded studies?

Justin:

That's it. That's a good point.

Sydnee:

Yeah, a magnet's hard to fake. So there's not really good evidence. Like I like I mentioned, there are these things, pulsed electromagnetic fields that can help in the healing of fractures. Transcranial magnetic stimulation is now approved by the FDA for depression and migraines. Although that's still controversial. The important thing you need to know about this stuff is that if there's somebody online who's trying to sell you something to create an electromagnetic field, don't buy it. None of this stuff is for home use, it's not strong enough. It's fake.

Justin:

On Shark Tank trying to get a deal?

Sydnee:

Yes. Exactly, like the guy on Shark Tank. That stuff's not real. I'm not saying that there aren't uses for this in the medical field. And I'm not saying that there isn't research that's ongoing, that shows some possibilities. But the stuff you're buying on the internet is not real.

Justin:

Don't do that. I mean it's real. And then it's physical and tangible. But like, it's not going to help you.

Sydnee:

No if you're buying something that says pulsed electromagnetic field something and that they have evidence that it works to heal fractures, yes, but not what they're selling you online.

Justin:

I mean, it's not gonna hurt you, right?

Sydnee:

No, that's the thing about magnets is that do they hurt you? Probably no. I mean, how do they hurt you? That you waste your money. If you're using them in place of other treatments, they do hurt you. And that's one thing the American Cancer Society would like to remind you. There are people out there who will tell you that it cures cancer. Bad, bad people. And it does not. It does not cure cancer. There's no proven benefit. They're probably harmless unless you're using them in place of real cancer treatment.

Justin:

Right.

Sydnee:

There is one funny thing I found, a magnetic water wand.

Justin:

How does that work?

Sydnee:

So, it's a stainless steel wand with a ball on one end. And then you just kind of stir it around in your cold water for 10 minutes. And then you drink the water.

Justin:

Okay.

Sydnee:

It fixes your allergies. [laughs]

Justin:

Does it?

Sydnee:

No.

Justin:

No it does— Okay, it doesn't. I mean obviously doesn't but...

Sydnee:

But people who are fans of it like to point out that it is stainless steel which is gorgeous.

Justin:

[laughs]

Sydnee:

Fully stainless steel, which also accounts for the fact it was like 14 pounds or so.

Justin:

Oh my God.

Sydnee:

This was a UK product so— not in weight, in price. Monetary.

Justin:

We try to not like... we tried not to harp too hard on modern, like things that people are still doing because we don't want this to be a controversial show. It should be fun for everybody to listen to. But like, you have to take a

moment when you're using magnets the exact same way that people used them 3000 years ago, like I don't know put a magnet on it. You have to take stock, you have to just take out like a second, like, wait a minute, it seems like we're just kind of guessing like those old dead dudes did.

Sydnee:

And this is usually it. If people are trying to sell you something before there's evidence for it, that's not how medicine works. We prove that something works first, and then we start actually, you know, prescribing it and charging money for it. We don't sell it on the internet in mattresses and bracelets and 700 magnet suits, and then figure out if it works or not, that's not how science works. So the stuff online is largely fake. There are some studies that show maybe there's more to magnets than we knew, but it's not as simple as taking a fridge magnet and putting it on your tennis elbow.

It's obviously much more complicated than that, and hopefully, we all know that the human body is a little more complex than then being affected by a refrigerator magnet.

Justin:

We would hope.

Sydnee:

Now, we certainly do use MRI machines today which do use magnetic fields to take very detailed pictures of the body. So, that is—

Justin:

That's different.

Sydnee:

Well, it's a diagnostic technique. And maybe someday I'll be saying you know what, we found that there are electromagnetic fields that really cure this that or whatever. But right now, we don't have that evidence and again, the stuff you're buying online, it's not gonna help.

Justin:

Folks that's gonna do it for us. Thank you so much for listening as always, it's been such a treat. Want to take a quick second to tell you folks if you're a fan of MaxFun at all and the stuff we're doing, MaxFun is putting on a cruise for the second time. It's their Atlantic Ocean comedy and music festival. Is the second one. They had a great time last year. They're going to set sail from Port Canaveral for three nights in the Bahamas on July 25th to 28th. They've got a ton of great people that are going. Great Bernhardt, W.

Kamau Bell, Chris Fairbanks, Mos Kasher, Karen Kilgariff... Sorry, my screen is a little tilt, do you want me to tilt to back there. Kyle Kinane, Natasha Leggero, Morgan Murphy, John Roderick, like a ton of people. And there's like a pub quiz, there's shuffleboard and there's a ton of fun.

Sydnee:

And we won't be there because—

Justin:

Stupid baby.

Sydnee:

We will be expecting the imminent birth of our child.

Justin:

Is there anything this baby can't ruin? Go ahead, over to boatparty.biz. And get your tickets now cause it's gonna be a blast and you'll have a lot of fun. Trust us. Don't miss out. I think it's gonna do for us. Go to iTunes.

Sydnee:

Go to iTunes, if you want to review our show. Thanks, everybody who's been tweeting about us on Twitter.

Justin:

Yes. You're great.

Sydnee:

And everywhere else where you tweet.

Justin:

Yeah. Every— wherever you're putting your tweets.

Sydnee:

All the places that you're tweeting. If it's not on Twitter, you're probably doing it wrong.

Justin:

Yeah, that's a common— common, a little tech advice.

Sydnee:

Grandma if it's not on Twitter... Nevermind, we'll talk about it.

Justin:

It ain't a— If it ain't on Twitter, it ain't a tweet. That's my new slogan for Twitter. We're really we're crushing it, this slogans.

Sydnee:

Everything's great in Oklahoma.

Justin:

Seriously—

Sydnee:

Brought to you by Sawbones.

Justin:

Thank you so so much for listening. You're the best. And make sure you join us again next Tuesday for another episode of Sawbones until then I'm 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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