Sawbones 566: Colonoscopy

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

["Medicines" by The Taxpayers plays]

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

Sydnee: And I'm Sydnee McElroy.

Justin: The drama, Sydnee, simply couldn't be higher.

Sydnee: Yeah. You're having an intense day.

Justin: America's favorite patient, Justin T. McElroy, is going under the knife. [chuckles]

Sydnee: Well, okay, could we clarify, Justin, you're not going under the knife.

Justin: Under the camera?

Sydnee: Yeah. Or, well…

Justin: Around the camera. [chuckles]

Sydnee: You're going around. [titters] You're going to envelop the camera.
Justin: I will become the camera.

Sydnee: Yeah. What are you having done tomorrow, Justin?

Justin: Tomorrow, I'm having a routine colonoscopy. My first ever!

Sydnee: That's right.

Justin: And boy, I'm on tenterhooks.

Sydnee: A screening colonoscopy.

Justin: Yeah.

Sydnee: Yeah. In honor of that, I thought that would make a great episode.

Justin: Yeah.

Sydnee: How did we—if you really think about it from a—like a bird's eye view, at some point in history, somebody went, "Man, be easier if we could just put a camera up there."

Justin: Mm-hm. Yeah, that's true.

Sydnee: And then we did.

Justin: Yeah.

Sydnee: And that's kind of wild.

Justin: That is kind of wild. It is easier. You gotta love the ingenuity. It does kind of seem like a wish or something, like a dream that you would make. "Someday, I'll be able to get in there and really look around." Yeah, but I—no, I'm having it done—I mean, my colonoscopy is really in honor of James Van Der Beek, who had—

You know, we heard about James during the fundraiser that they had for—to raise awareness of prostate cancer. And they—one of the big things that they hit in there was how, when you hit 45, you know, that's something you need to look at. So, I—you know what? Just inspired by the moment, by James, by Mr. Van Der Beek, I scheduled it.

Sydnee: Yeah, well, and you had—you were just about to turn 45 at the time, so it was perfect.

Justin: Yeah, so close.

Sydnee: No, and we're gonna—I'm gonna talk about the history of colonoscopy, and then maybe after your experience tomorrow, we could do a follow-up?

Justin: Yes.

Sydnee: Where you sort of walk our listeners through—

Justin: That's the plan. It's like maybe a two-parter.

Sydnee: And you can talk about what today… well, really starting yesterday, what the prep for colonoscopy looks like, feels like. [titters] And what the procedure itself, what that experience is like. But I wanted to go ahead and say right at the top of the episode that it is—

It is important to remember that colon cancer screening for most individuals starts at age 45, that's for like average risk. Now, there are some different conditions or family history that may put you at higher risk, in which case you may need screening earlier or more frequently.

But I would encourage you to talk to your primary care provider about what kind of screening would be best for you, when you need it, how frequently you need to repeat it, because it's an incredibly important thing. And the 45-year-old recommendation is, I mean, in the big picture, relatively new. When I was first training in medicine, it didn't—the recommendation was not 'til 50.

Justin: Hm.

Sydnee: So, that ticked down five years, and it is still kind of fresh.

Justin: Lucky me! I'm kind of fresh too to this whole thing.

Sydnee: As I was reading about colonoscopies, the term colonoscopy, which a lot of—a lot of this stuff comes from Greek, and I thought this was just really kind of interesting, to me. So, it sounds like it's from "oscopy," which is like looking into, or examining, and then "colon," which… you know, is your colon.

Justin: Right.

Sydnee: It's your large intestine, the bottom part of your bowel. And that seems to make sense, right? Looking into your colon.

Justin: Peering—yeah.

Sydnee: There you go. Because of the way it's constructed, the term "colonoscopy," directly translated, it actually means like examination of the hill.

Justin: Oh?

Sydnee: Looking into the hill.

Justin: Inside the hill.

Sydnee: Looking in the hill.

Justin: Inside, yeah.

Sydnee: I thought that was just interesting. All of our—all of our—

Justin: Inside the piles.

Sydnee: I read this—[titters] all of our medical like terminology that includes "colon," the way—not all, but for the most part, the way we construct it, it's all "the hill" instead.

Justin: "The hill" rather than—

Sydnee: We just messed it up a long time ago and just ran with it.

Justin: Huh.

Sydnee: And it makes sense now. "Oscopy," generally, we think we're putting a camera somewhere, and then—

Justin: Putting the camera somewhere.

Sydnee: Yeah. And then that first word will tell you where.

Justin: No problem.

Sydnee: There you go. We have evidence like all the way back to Pompeii of devices that people tried to create to look inside the rectum.

Justin: Awesome.

Sydnee: Now—[chuckles]

Justin: That's so long ago. For real.

Sydnee: Yeah. Now, those early attempts—

Justin: You don't mean the release of the single "Pompeii" by the band Bastille, right?

Sydnee: No, no, no.

Justin: You mean the very unpleasant volcano situation.

Sydnee: Yes. Like, we know that for—since ancient times, humans have had a desire to peer inside the rectum and see what's up there.

Justin: We wanna see everything, but that is right there. It seems like an unknown. We can't get up there ourselves, right?

Sydnee: No, we can't get up there. And we—and we—it's hard to look inside. I would say these early attempts would be more akin to what we now

think of anoscopy, which is when we just look—I mean, we can do that in the—like in the clinic. We don't need to take you to a hospital and—

Justin: In the anus, rather than go in deeper.

Sydnee: Yeah, you just go right—just right inside. And you can do that—like hemorrhoids would be a reason why we might do that in the office, to take a closer look and… see if there's hemorrhoids in there, or what the hemorrhoids are up to, or what they're doing.

Justin: I've been—I've been enjoying an unrelated bout of those, actually, this week.

Sydnee: I would say it's—

Justin: Just to add a little bit of…

Sydnee: Well, maybe it was unrelated to begin with.

Justin: Yeah, well, no—yes, yeah, thank you. I was say—I guess I was saying the colonoscopy is unrelated to the—

Sydnee: Yes.

Justin: Hemorrhoids.

Sydnee: Yes.

Justin: Is what I mean. The hemorrhoids may be, in part, due to the preparations for the colonoscopy, which is a really beautiful ouroboros. I'm eating my own tail, Sydnee.

Sydnee: Yeah, I didn't want to tell you that, that they may… make things uncomfortable for a bit. I mean, you were gonna do it, and I wanted you to do it, and why… you know.

Justin: Luckily, with the power of Preparation H—

Sydnee: [chuckles]

Justin: I am always ready to soothe and comfort those irritating anal issues.

Sydnee: I want to show you, Justin, a picture, as I'm talking about—the first big advance that was made towards what we think of as a colonoscopy now comes from the late 1700s, by Philipp Bozzini, who is a German doctor.

Justin: Bozzini!

Sydnee: Bozzini. [chuckles] And he made what was called the light conductor, or lichtleiter.

Justin: Hm?

Sydnee: And I just, I thought it was worth you taking a little peek—

Justin: Yeah.

Sydnee: Yeah, at the lichtleiter.

Justin: Okay, so—

Sydnee: Would you—how would you describe—

Justin: Oh my gosh.

Sydnee: It's very futuristic for something from the 1700s.

Justin: It is! It is. It is. It looks like, if you were to give a—

Sydnee: It looks like a Dalek. [laughs]

Justin: It does kind of look like a Dalek. It looks kind of like… if you had a trophy for—like a modernist trophy for fishing, that looked like a black bass emerging from the ground, grabbing for like a silver sphere above its mouth. And then protruding from its back and its dorsal is just a… like a seven-inch-long steel—

Sydnee: Probe.

Justin: Probe, yeah.

Sydnee: Yeah.

Justin: Yeah.

Sydnee: I think that's a good description.

Justin: Which probably has more to do—it looks more like a sonic screwdriver emanating from this marble—

Sydnee: Well, I was thinking of the Daleks—

Justin: Yeah, no I—

Sydnee: Like, you know.

Justin: It's a little—

Sydnee: Not its plunger, but other one. [chuckles] So, this tube had mirrors and lenses to like take light from the tube and direct it into the rectum.

Justin: Mm-hm.

Sydnee: So, you know, refraction—

Justin: Like a kaleidoscope.

Sydnee: Well, I mean…

Justin: [chuckles]

Sydnee: I'm assuming that wasn't what you were going for.

Justin: Same principal.

Sydnee: There are also different attachments that you could put on the, I'm assuming, the probe piece.

Justin: Mm-hm.

Sydnee: And then you could make it fit in different orifices. So, this wasn't exclusively for rectal use.

Justin: There was a tip for that.

Sydnee: There was a tip for that. [chuckles] There was a tip for that. But it could also be—used to look in the ear, or the urethra.

Justin: I know what order I'm going for.

Sydnee: [chuckles] Whatever holes you need to probe.

Justin: Especially if we're headed to the nose. [titters]

Sydnee: I thought the light source for a lot of these early attempts would have been a candle.

Justin: Nice.

Sydnee: Or, as we move forward, maybe an oil lamp.

Justin: [sings] Got a match? I know you, you're—you're shivering.

Sydnee: [chuckles] No, but the idea of, can you imagine the first patient that he tried to explain this to? "Okay, do you see this thing I'm holding?"

Justin: "Trust me."

Sydnee: "I would like to insert it into your butt."

Justin: "It gets better."

Sydnee: "And I know that there's a candle really close to it, and I understand that that's concerning, but it is—"

Justin: "And the only lube we have is probably whale blubber, or whatever. So, let's go."

Sydnee: [chuckles] It said that his device faced skepticism.

Justin: Uh-huh.

Sydnee: Which, I mean—

Justin: Yeah.

Sydnee: Yeah.

Justin: Yeah.

Sydnee: But again—

Justin: Everybody just clammed up all at once. [chuckles]

Sydnee: [titters] The idea of, we need to look in here, and we need a light to do it, and we need some sort of probe, I mean like—

Justin: It's inarguable!

Sydnee: He's moving us forward, moving science forward, right?

Justin: Yeah.

Sydnee: The—[chuckles]

Justin: It doesn't look like—I'll say, if you look at the device, it doesn't look like the one he would say like, "This is it, it's done." It looks like the one he'd be like, "Not like… not exactly this, obviously. You know, but like sort of like this." [chuckles]

Sydnee: Well, and I also—because it is sort of like a solid probe type thing, I'm not sure how you're getting the best visualization. Unless you're trying to look around it. And so—

Justin: I'm not sure either.

Sydnee: Right? And so—

Justin: Maybe that's where the mirrors and the light—

Sydnee: The mirrors and the light. But what it—what it led to was, I think, the kind of natural evolution of this. Dr. Antonin Jean Desormeaux, a French physician, who made an open-tube version—

Justin: Now we're cooking.

Sydnee: That was like the next evolution. And that makes total sense, because now, once you've like… once you've sort of opened everything up—[chuckles]

Justin: Mm…

Sydnee: Now you can look through it, through the hole that you've created, and see the inside of the rectum and beyond. And so, you can see where that would be a better product, so to speak.

Justin: Yeah. Sure. I mean, definitely. Let's get this right the first time. That's my motto.

Sydnee: He did not use a candle for this design. It was a lamp fueled by alcohol and turpentine.

Justin: Hm…

Sydnee: Which feels, again, it all feels very dicey. It's just like there's a lot of like flammable substances.

Justin: Flammable, close to some really sensitive places. Like maybe under pressure, the contents? I don't know.

Sydnee: [chuckles]

Justin: We're really taking a lot of gambles down there, just for a peak. [titters] Just for one little peak that you know is not gonna be that great.

Sydnee: But this was obviously superior in the sense that, one, it has the open-tube design. And then two, the candle would have been subject to… perhaps a gust of air. [chuckles]

Justin: From wherever that gust may come.

Sydnee: Wherever it might come from. And obviously, this was—this was better for that reason. It had—

Justin: And it does—and it wouldn't make a big fireball like you might be thinking, due to the methane. It don't work like that—

Sydnee: No.

Justin: I learned in elementary school.

Sydnee: No. You could—you could use a little condenser lens in this one, to try to like focus the light on a certain spot. So, if it's like that's the thing I'm trying to look at.

Justin: Mm-hm.

Sydnee: But also, minimize just like heat like injury from the light source, you know, if you can focus it just on the one thing you're trying to look at. And it was a little bit more flexible and easier to move. So, we're moving to the right—like we're starting to see, what do we need this thing to be? If our goal is to look deeper, one, it's got to be longer and it's going to have to be flexible. Two, it's got to have a light, right? It's got to be lit up.

Justin: Yeah.

Sydnee: And we need a light source that, as we go further in, it can't just be at the opening.

Justin: Yeah.

Sydnee: Because, you know, it's not gonna go all the way down there.

Justin: It's not.

Sydnee: [chuckles]

Justin: Sorry! No luck.

Sydnee: So, how are we gonna—what are we gonna—and how are we gonna see that direct visualization, as we go deeper into the rectum? And so, it's—these early kind of prototypes are helpful, because it starts to elucidate the problems.

Justin: Mm-hm.

Sydnee: Like, what are we trying to solve for? And with a lot of medical advances, our ability to move that technology forward is just sort of like tied up in our technological advances as a society, right?

Justin: Yeah. I mean, there's other things like, you think about… like the image of the microchip, for example.

Sydnee: Mm-hm.

Justin: Like how much of modern medical technology is tied to that development. And that development can't happen until the microchip is developed.

Sydnee: Exactly. Exactly. And I mean, in this case, what we need are fiber optics, really. I mean, that's the next thing that's going to move us forward. Because until then—and there were a lot of these, like a series of lenses and condensers constructed along a more flexible tube, to try to like pass that

light all the way to where we're going. And then you have to look all the way down there, and then maybe the image gets, you know, passed back through those mirrors. But again, this is an—now we're building something that's incredibly complex, on a tiny scale. It would be very difficult, right?

Justin: There's also evolutionary factors to consider. I mean, in a few thousand years, we may have evolved large, spacious colons. Large, vast buttholes that are very easy to get inside and to look around. You know, where we wouldn't have needed all of this technology, we may have evolved to have larger, easy to look in buttholes.

Sydnee: Do you think now, or are you proposing that's the future?

Justin: I'm saying future generations may look back and say, "But why, Mother? Why did we need all of this colonoscopy? Why didn't they just stick their head in there, into the giant butts, and look around?" And they say, "Well, child, back then, they didn't have our large, spacious ani to be able to look—just like have a butcher's."

Sydnee: I can see some diagnostic advantages to that, like as a physician, there's definitely aspects of my job that would be easier, were that the case.

Justin: And literally no disadvantages.

Sydnee: No, no, I would—I would posit that there's a few things.

Justin: I feel like I pretty soon should say that I am not allowed to eat food today. [chuckles] And I just keep having a bunch of diuretics. I'm in a bit of a head space.

Sydnee: I think it's really important, as we move forward in history, one of the big limitations, like beyond—obviously, we've kind of defined the problem. It's got to be longer and so it has to be flexible. It has to have a light. It has to have a way of sending those images back to the person, you know, who's performing the procedure. You need to do all that. And in order for it to be—because we are talking about your colonoscopy as a screening tool.

Justin: Yes.

Sydnee: Presumably there's nothing wrong. We don't know of anything wrong, right? You're not doing it because you went in and said, "Ouch, Doctor, I have a problem."

Justin: Yes.

Sydnee: We're doing it because it's a good screening tool. Well, to be a good screening tool, it has to be better than these early versions.

Justin: Sure, yeah.

Sydnee: You know, for a few reasons.

Justin: Because otherwise, you're gonna get a bunch of false positives, and there's no point.

Sydnee: And so, I want to—I want to talk about that like bar, that higher bar that you have to meet for a screening tool. But before we do that, Justin, we gotta go to the Billing Department.

Justin: Let's go!

[theme music plays]

[ad break]

Justin: Okay, we're back.

Sydnee: I think that this is an important point to drive home, because this concept branches into a lot of different areas of medicine, especially when it comes to prevention.

Justin: What concept is that, Syd?

Sydnee: The idea that if something is going to be used as a screening tool, one, you gotta think about risk and benefit. So, we are going to be doing

colonoscopies on a lot of presumably healthy individuals, and we're going to do them across a wide swath of the population. So, you want to reduce risk as much as possible, right?

Justin: Mm-hm.

Sydnee: Because it's one thing if you're sick and we're giving you a medicine that maybe has some side effects, but also the medicine is necessary for your survival. The risk-benefit ratio is different than in a screening test, where you're fine right now, as far as we know. And so, you want a screening test—

Justin: Yeah, you keep saying that! You keep adding that like I'm not your husband, and I'm rather just like some guy in a textbook that you're talking about.

Sydnee: Well, I mean, you're the example?

Justin: As far as we know! You're doing these big, waggly eyebrows!

Sydnee: [chuckles] No, I'm just saying like that when you're doing a screening test, you're not doing it knowing there's a problem, or even necessarily suspicious that there's a problem.

Justin: Right.

Sydnee: Most people aren't going to have a problem.

Justin: You're running the numbers.

Sydnee: Right. And so, that procedure that we're developing has to get to a point where it is, one, safe enough to do this, and then two, can pick up diagnoses on a level that will make sense. So, we need it to see things in the colon that we can act on and do something about, and actually impact your quality or quantity of life, right?

Justin: Useful information, not just like, "Oh, interesting."

Sydnee: Exactly.

Justin: Not trivia.

Sydnee: Exactly. [titters] And I think all of this, the point I wanted to get to is, all this is really important when we talk about any sort of preventive, you know, health measure. Like vaccines plays into this too. You know, vaccines are given, again, to presumably healthy individuals, a wide swath of the population, which is why they're some of the most vigorously tested, you know, and safe preventive health measures you can take. And so, I think, I don't know, I always think that's a useful thing to remember, is that you have to hold these types of screening tools and procedures and preventive health measures to almost a higher standard of safety than you would a medicine I'm giving you because you are ill.

Justin: Mm-hm, interesting.

Sydnee: Does that make sense?

Justin: Yeah, for sure.

Sydnee: So, we really… after we kind of started to define the problem, there was something developed that was called the colono camera. And this was—

Justin: Very catchy.

Sydnee: Yeah, I know, I love the colono camera. And this is where we had the light, we have a long tube, but we really needed a better way like what—how do we get that image from the tip of that tube back to the eye of the person who's going to read it, right? Well, we take a picture of it. So, with the development of…

Justin: Development.

Sydnee: Of development.

Justin: [titters]

Sydnee: We started putting a camera on the end of the long tube, and we have fiber optics now for the lighting. And all of a sudden, we're starting to see the colonoscopy, the colonoscope, if you will, as we know it, begin to be developed. Those early colono cameras would have actually taken pictures, just like you would think of, like along the way. And then you would have to take that film and develop it, and look at those pictures, just like we would any other camera.

Justin: Mm-hm.

Sydnee: Which I think is really interesting, because obviously that's not what we do now.

Justin: Yeah.

Sydnee: By the 1960s, this has been refined to a point where the kind of colonoscopies they were performing, you would recognize as similar to the kinds of things we do today. There were two doctors, Dr. Shinya and Dr. Wolf, who really kind of moved into the modern colonoscopy. One by adding insufflation, and what that means is that carbon dioxide was pumped into the colon as well—

Justin: Fun.

Sydnee: In order to expand it. So, you open it up and expand the walls, and that does a couple things. One, they—actually the way it was initially promoted is that it was a painless colonoscopy. It's a lot more comfortable when you're not feeling it. [chuckles]

Justin: Yeah…

Sydnee: Because now the walls are inflated, and so the scope can pass easily… through the tunnel.

Justin: Fun.

Sydnee: As opposed to—I mean, the colon is not a straight shot.

Justin: Yeah.

Sydnee: It's, as many articles will describe it, it's tortuous. [chuckles] Tortuous twists and turns.

Justin: I know, I'm just looking—this episode was my idea.

Sydnee: Yeah, it was your idea.

Justin: I'm not—like, I'm sitting here thinking about what a bad idea it was.

Sydnee: [titters]

Justin: I'm sitting here thinking like, "Why did you do this? Like, you don't want to hear about how twisting and winding this is gonna be. Why are you doing this to yourself?"

Sydnee: Well, no. So, they made the tube—

Justin: [coughs] Ow.

Sydnee: They made the tubes more and more flexible, and then by insufflating the colon, they can pass more easily, less pain, discomfort. And you get better visualization too, because there's also, the walls of the colon can be kind of wrinkly. And if you poof 'em out—

Justin: Hopefully not—

Sydnee: You can see all those nooks and crannies. [titters]

Justin: At my age.

Sydnee: And make sure. And again, it's all improving the ability of a colonoscopy to see things that might be a problem, right?

Justin: Right.

Sydnee: And then the next thing was, we want to send these images immediately to view, instead of taking pictures and having to develop them later and all of that. And so, that's when we start to see like the idea that it's a video.

Justin: Sure.

Sydnee: It's being filmed live, and they're watching it on a TV in the room, while they're doing the procedure. And that also makes sure that you get a picture of everything. Like you can turn a little camera around and make sure you're seeing all of the walls as you go. The initial advances were mainly what we would call sigmoidoscopy, because it only reached that sigmoid colon, the first part of the colon.

Justin: Okay.

Sydnee: As we've gone further, we can now reach further into the colon, because the tubes are more flexible and we've, you know, we do better. In the '60s, they even began to add—so, now we have a procedure that we're starting to use as a diagnostic tool, meaning you—we think you have a problem, we can diagnose it. A screening tool, meaning we don't know if you have a problem or not, but we're going to look and see.

And then finally, as a mode of treatment, and this is really fascinating, so, in a colonoscopy, and this is true to this day, they began to—they would see something like a polyp, a little outgrowth of the tissue that lines the colon. A polyp, in many cases, is benign, not necessarily anything to worry about, but at times, it can be something concerning. And the only way to know for sure is to grab it, snare it and cut it off, and take it with you, and go look at the pathology under a microscope and see what it is.

Justin: Yeah.

Sydnee: So, that was the next advance in colonoscopy, was now we can see the polyp.

Justin: We've equipped them with weapons, so now they can fight back.

Sydnee: [titters] I don't even know if I want to show you a picture. I'm not gonna show you a picture.

Justin: How about tomorrow?

Sydnee: I won't show you the picture.

Justin: Maybe tomorrow will be better.

Sydnee: Well, and listen, the one I showed you a picture of you know is not…

Justin: That's old-timey.

Sydnee: That's old-timey. They're not using that tomorrow. They will not be using that.

Justin: Still though, I can tell that I'm on the edge of history. I feel it, Syd. I feel that I'm just on the cusp of… it just feels like with the advances in drones and stuff, there's gonna be a new, cool way of doing this so soon. I just feel it in my gut. There's gonna be—I feel like my kids aren't gonna have tubes up their butts like this. I just feel it. I just feel it in my bones, man.

Sydnee: They're working on it.

Justin: I'm sure.

Sydnee: So, all of these things that I just described from the '60s, they're really—the advances since then have mainly been perfecting it. Perfecting the flexibility of the tube, the definition, the high—

Justin: The resolution.

Sydnee: The resolution of the camera, absolutely, high-def colonoscopies. I mean, all of that got better over time. And then, again, the consistently inflating the colon to get a better view. And obviously, all of this partners

with advances in anesthesia. A colonoscopy is probably a lot easier now than in the pre-anesthetic era.

Justin: I would assume, yeah.

Sydnee: Yes, I would assume. So, and at this point, we are looking at, could we do a virtual colonoscopy? Is there a way to do this without ever having to actually—

Justin: State of the art.

Sydnee: [chuckles]

Justin: Digital virtual colonoscopy.

Sydnee: In the mean—the point a lot of people make though, is that the—one of the beauties of the colonoscopy is the fact that you can also treat while you're doing the procedure. You're not just looking, if you see something, you can take a piece of it, look at pathology. If something's bleeding, you can go ahead and cauterize that, or coagulate, stop the bleeding if you need to. And they're perfecting those techniques as well into like very like refined dissecting techniques that could find very, very early lesions that aren't concerning yet, but might be, and then you can dissect that out.

Justin: Well, I just don't understand why they can't… zap my hemorrhoids too. [chuckles] I mean…

Sydnee: There is a way to do that. I don't know that there… they won't necessarily be doing that during your screening colonoscopy.

Justin: I'll tell them ahead of time like, if they could grab it on the way in. [chuckles]

Sydnee: [titters] Just get the hemorrhoids.

Justin: Just a drive-by.

Sydnee: Just get those out of there on their way.

Justin: Yeah, one the way by.

Sydnee: And obviously, as with all areas of medicine right now, AI is being investigated as a way of basically like computerized detection. Do we need some—do we need a human to look at it? I mean, my answer is yes.

Justin: Yes.

Sydnee: But that is—that is the next area being explored, could we do this with computers?

Justin: Mm-hm.

Sydnee: Is there a way? Now, I don't know of any effort for the computer to actually operate the camera at the moment. Like you gotta have some human hands in there, putting it in.

Justin: Yeah.

Sydnee: [titters] But I did want to note, because that sort of—that brings us up to where we are with colonoscopies today.

Justin: Yes.

Sydnee: I did want to note the pill cam, because as you kind of follow the story of the colonoscopy, capsule endoscopy, you know what I'm talking about, the pill cam?

Justin: Yeah, swallow a pill and then it comes out the other end.

Sydnee: lot of people have asked me this question like, why do we even do those anymore when we could do a pill cam?

Justin: Yeah, I'll go ahead and ask that now, actually.

Sydnee: And so, I think that that's a useful question to address, because capsule endoscopy, which means there's a, I say little, it's a—it's a relatively larger pill that you gotta swallow. But it is little for a camera. It's a camera and a pill that you swallow, it goes the entire length of your intestine.

Justin: Mm-hm.

Sydnee: Records images. It records them two to six frames per second over the course of eight to 12 hours.

Justin: Huh. You know, it's probably… probably less control, right? Like, that's part of the problem. Like, if you want to go back and look at something more, you can't do that with the pill cam.

Sydnee: Nope, it just passes through as it passes through. We've been using them since '99. The battery life is still a limiting factor. About 16.5% of studies are incomplete due to just the batteries running out.

Justin: Boo.

Sydnee: Which is—which is a bummer. The other thing is that, like you said, you can't go back and reevaluate areas. Obviously, you cannot treat anything. The pill just passes through and the images are sent somewhere. But you don't… you know, you can't—it can't go backwards.

Justin: Yeah.

Sydnee: So, no treatment, purely for diagnostic purposes. It's really useful with the small bowel.

Justin: Mm-hm.

Sydnee: As it stands right now, your small intestine is really long, and we have no camera that we can insert all the way from top or bottom to look at the entire length of the small intestine.

Justin: Ah, yeah, that makes sense.

Sydnee: So, the pill cam is a, I mean, especially—

Justin: Really deep for the colonoscopy, but it's easier to get the pill cam at the upper—

Sydnee: Well, a colonoscopy only does the large intestine.

Justin: Right.

Sydnee: You're just looking at the colon. So, if we need to look at the small intestine, you can do—if you go from the top, you're doing an endoscopy, you look at the esophagus, down into the stomach. You can push into the first part of the small intestine—

Justin: But the pill gets deeper.

Sydnee: But you can't go any further, yeah. So, if you have some sort of like occult bleed somewhere hidden in the small intestine, the pill might be really useful for diagnosing something like that. But as it stands, because it cannot visualize everything that a colonoscopy can, it just doesn't get that kind of quality of imaging. We don't recommend it for screening colonoscopies at all. Now, there are rare cases where, if somebody can't have a colonoscopy, if they have certain risk factors with the procedure, with anesthesia or whatever, you may use this as the only other alternative.

Justin: Right.

Sydnee: But generally speaking, pill cam is just not at a point where it could replace a colonoscopy. There are other ways—this episode focuses on colonoscopies. There are other ways to screen for colon cancer, it's important to know. The beauty of the colonoscopy is, as I've already said, you can treat things, because you're already in there. And if your colonoscopy comes back and looks, you know, average, as expected, and we don't see any high-risk problems, and you don't fit into any high-risk categories, you probably won't need another one for 10 years, which is nice.

Justin: Yeah.

Sydnee: You got 10 years you don't have to think about a colonoscopy. Other screening methods can be less invasive, but the tradeoff is that you usually have to do them more frequently. So, you've probably heard of like a fecal occult blood test, meaning we check your stool to see if there's blood in it that you can't see.

Justin: With the Devil. Sorry, the occult isn't…

Sydnee: Oh, "occult" meaning like hidden.

Justin: Oh, all right.

Sydnee: Hidden like I can't see the blood, but the blood's there.

Justin: So, you don't harness the Devil's power at all?

Sydnee: No. This has nothing to do with the Devil.

Justin: Okay.

Sydnee: Yeah, this is just hidden blood in your stool that you didn't see. I can test for that, but if I see it, I'm gonna recommend a colonoscopy, maybe, probably, more than likely. And even if that's negative, we're going to need to do that probably every year. There's a test where we can check your stool for certain DNA that might suggest some sort of pre-cancerous or cancer growth.

That is a little better, we can do that every three years. But again, if we find anything abnormal, we're going to send you for a colonoscopy. There are ways to just do sigmoidoscopy, but you do have to do that more frequently, because we're not seeing the entire colon.

So, you know, in that way, the colonoscopy, still, if you're an appropriate candidate for it, you know, with the anesthesia and all that stuff, if you're an appropriate candidate, the colonoscopy is still sort of that gold standard for getting a good look at the entire colon, treating what you can and knowing what your risk is moving forward and how often to do it.

And again, it's really important—last year, these were the numbers for 2025, there were about 107,320 new cases of colon cancer and 46,950 new cases of rectal cancer. And your lifetime risk of developing colorectal cancer is one in 24 for men and one in 26 for women.

Justin: Hm.

Sydnee: We're seeing an increase in younger people under the age of 55, which is part of why they have moved that starting age of screening from 50 down to 45. So, it's really important to get your colon cancer screening. Talk to your healthcare provider if you think maybe your risk is different, you know, you're worried about a family history or a specific medical condition you have, 45 might not be the right answer for you.

Justin: Right.

Sydnee: So, talk to your provider about what method of screening and how frequently you should get it. It's really important. And Justin, you're the trailblazer, leading the way in our family.

Justin: Wow. What an inspiration, yeah. Yeah! Yeah, yeah. I'm getting it.

Sydnee: And it's gonna be fine.

Justin: It's gonna be fine. I'm not that worried about it.

Sydnee: I'm not.

Justin: It's inconvenient, I'll say.

Sydnee: Well…

Justin: The preparation is a bit—should I talk about the preparations, or should I say—

Sydnee: Do you want to talk about the preparations now, or do you want to save them? You can.

Justin: Yeah, next week, I will talk about the personal experience. What it's actually like to get this, how mine was, personally, what the preparation has been like, because it's been interesting. [titters]

Sydnee: Yeah, and demystify it for people. I think a lot of people are really anxious about it.

Justin: Yeah.

Sydnee: And they hear a lot of horror stories, about the prep especially. And I think that—

Justin: Yeah, yeah, yeah! It's not that bad.

Sydnee: Yeah, let's untangle it for people.

Justin: We'll figure it out. I say it's not that bad, I haven't done it yet. I'm halfway, I'm currently doing it.

Sydnee: You're halfway through.

Justin: I'm halfway through, I'm getting there. That's gonna do it for us for this week, though. Be sure to join us again next week for Sawbones. Oh, thank you the Taxpayers for the use of their song "Medicines" as the intro and outro of our program. And thanks to you for listening. That's gonna do it for us, until next time. My name is Justin McElroy.

Sydnee: I'm Sydnee McElroy.

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

["Medicines" by The Taxpayers plays]