

Laryngology Part 1 with Dr. Ronda Alexander

Ologies Podcast

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Oh hi, it's her bobby pin under the couch cushion, Alie Ward. And listen, if you're new around here, we usually do not throw so many two-parters your way at once, but this and the dreams episode both just really deserved them, and we had nearly 400 questions for this one. So yes, a two-parter it is. Also, this was an ologist I was just thrilled to meet after having a patron by the name of Dr Jessica Randolph write in to say, "Please! This ologist is a brilliant, hilarious surgeon who works on voices, have her on." So, a voice surgeon, yes.

Practicing in this field since 2008 and specializing in voice disorders and airway issues, an expert. So, I happened to be in New York, and I got myself to the Bronx to meet up with this I and fellow of the American College of Surgeons, who's the Director of the Division of Laryngology, Otorhinolaryngology, and head and neck surgery at Montefiore Einstein Medical Center. We met up in the lobby, we stayed masked, and we ducked into a small conference room, and I learned so much about the voice, and also that we have a lot in common, and that I as a person have grown and have changed. I'm leaving the word "mucus" unbleeped in this episode. I've bleeped it in past episodes because I just can't deal. It gags me out, but I'm leaving it in.

One thing that does not gag me out are patrons. Thank you for joining at Patreon.com/Ologies and for submitting questions for this show. Thank you to everyone in *Ologies* merch, wearing it; OlogiesMerch.com has things. Thank you to everyone who rates, and subscribes, and leaves reviews for me to read. Here's one this week to prove that I read them all. It's from BessSara who wrote that:

This show's quirky sense of humor mixed with science is the perfect blend of fun and facts and it's great for everyone (kids too if they're used to a little cursing)!

Which reminds me that *Smologies* episodes, those are trimmed of my filth and they're shorter and they're classroom safe. So, that's what *Smologies* episodes are for; they're for kids.

Anyway, onto the interview, Part 1 of it, where we will use our voices to discuss your voices, plus Austin's Elvis drawl, hormones, deep voices, squeaky ones, tips for singers, free life hacks that will make your skin glow and your brain work better, vocal feminization surgery, turning back time, anatomy you may not know you have, and more. And then come back next week for whistle tones, Mariah, damage to your voice box, throat singing, perfect pitch, stress, and voice cracks, and more with your new favorite Laryngologist, Dr. Ronda Alexander.

Alie: Okay, so here's your mic. They're stage mics so they're super hardy so, just kind of get up in it, especially since we're masked.

Dr. Alexander: I'm up in the mic, I'm up in the mic.

Alie: Perfect. Let me see, let me check your levels.

Dr. Alexander: Recovering theater kid, recovering theater kid. Person who loves Broadway, person who sings the soundtrack to *Six* in the shower and hasn't seen it yet and that's her biggest embarrassment. *[laughs]*

Alie: Literally, my first question, Doctor, is do you sing? So, done. Amazing.

Dr. Alexander: Wonderful, wonderful.

Alie: First question I'll ask is if you can say your first and last name and your pronouns.

Dr. Alexander: Yes, first name Ronda, last name Alexander. My pronouns are she/her.

Alie: No extra H in that Ronda.

Dr. Alexander: Nope, I am the daughter of Ronald, and so I am R-O-N-D-A.

Alie: Augh! Any other doctors in your family? How do you become a surgeon? That is just something I cannot even fathom.

Dr. Alexander: It requires a delightful mix of ignorance, and perseverance, and encouragement, those three together. [*Alie giggles*] It is one of those things where if you knew the full scope of the sacrifice and discomfort that it would be, you might not do it. But the pathway for me began way back in the '80s, with first grade, [*giggles*] where I was very, very fortunate to be in a scholastic environment where my teachers, and my peers, and my family all just really encouraged academic talent. Definitely not a situation where that was not a cultural fit. They were like, "Oh, this is great, we love this. We love when you bring home these report cards with all straight lines, we love it very much. Good job, kid."

Then high school, I went to university down in Louisiana, I went to Xavier University of Louisiana, a Historically Black College. And then I went to medical school, and at that point, now I am 25, about to turn 26 when I finish medical school, and I have secured a very coveted spot in the very competitive specialty of otolaryngology, head and neck surgery. There are only about 220 jobs in the country when you finish medical school. It's gone up a little bit, but the time when I was coming out, 220 was it.

Alie: Wow!

Aside: 220 openings every year to join the established 10 to 12,000 laryngologists in the US. And for context, I looked this up, every year the NBA hires about 60 new players. So, your chances are only like 4 times better than getting into the NBA. But Dr. Ronda Alexander is at the top of her field, so...

Dr. Alexander: And I was able to secure a position, actually right here. I trained at this same place where I work now.

Alie: You did!

Dr. Alexander: I did.

Alie: But you were in Houston for a while as well, right?

Dr. Alexander: Yes, I worked down there for a decade. So, after residency, which is five years of pushing your body and brain to the limits, being awake as long as 30 hours or so, back when I did it, and finding safety in that, and sacrifice, and joy, all of those things together. Then I did a one-year fellowship in laryngology, which had a bend toward neurolaryngology, so nerve-based disorders of the head, and neck, and voice box. And then I left New York, and I went down to Houston, and I practiced there for over 12 years before coming back to New York.

Alie: Augh! And you've said so many ologies [*Dr. Alexander laughs*] in the last minute.

Dr. Alexander: So, our training those first five years is comprehensive otolaryngology, head and neck surgery. So, that's everything from taking tonsils out of a small child with breathing problems, or putting ear tubes in so they can hear well, to taking care of cancers of the thyroid or mouth or tongue, to taking care of allergies and polyps in the nose, or heaven forbid, also there can

be cancers in there that we take care of as well, all the way to cosmetic things like using Botox to soften wrinkles and lines, fillers to plump up the face and make it even younger looking. And then my part, which is voice, airway, swallowing disorders, we do that. Did I leave anyone out? Hearing. That's right. So, otology, and neuro-otology, that's going to be the specialties of hearing and balance and restoring that.

So, we have a broad umbrella, and our field in general is about how we interact with the world, so we're in charge of hearing, taste, smell, the way your face looks, and the way your voice sounds. So, we're really all about how you interact with your environment.

Alie: Oh my gosh. What about now, what would you say a lot of your work now is?

Dr. Alexander: So, my work now concentrates in two main areas, and that is voice health and airway health. So, voice health is going to be, are there injuries or developmental problems in the voice box anatomy or the way that the person uses it that are getting in the way of them being able to present themselves authentically, confidently, and in a healthful way? And then I do airway disorders, so that is going to be people who have had an injury, or inflammation, or surgery on the voice box that has led to a narrow place in particular. And so we do lots of reconstructions and things to help get them so that they can live a tube-free life. So, most of those folks are going to have a tracheostomy, which is an artificial hole from the skin down to the windpipe or trachea. So, finding ways to get that out because most people just don't want them.

Alie: Is there a part of your job too that deals with why someone can sing or not sing? In particular, me. Why can't I sing?

Dr. Alexander: So, that ends up being in vocology or phonology, so that's going to be the province of professional singing teachers and coaches. So, we work oftentimes in collaboration with them and another discipline called speech-language *pathology*. And together, I'm in charge of the anatomy and the medical health, the singing teacher is in charge of technique and maybe style, and the speech-language pathologist also overlaps with technique, and also breathing health, and reducing things like coughing, and they do a lot of coaching on things like reflux habits to collaborate with us as well.

Alie: And you sing?

Dr. Alexander: I've been known to sing. [*laughs*]

Alie: You've been known to sing! Did performance have any influence in which field you went into?

Dr. Alexander: I think it did earlier than I originally remembered. It definitely played a role in medical school, where the patients' problems made sense to me, when everyone else was like "Who cares if they're missing a half step?" And I was like, "That makes a difference between whether they get a role or not, and if they don't get that role, that's whether they eat or not." So, for me it was a very practical thing even though it's esoteric, and high level, and people think, "Oh, it's only on Broadway." But same for teachers, same for professional parents, if you can't use your voice with your child, are you able to do your job effectively? No.

So, everyone who uses their voice as a part of their job is a professional voice user, as I consider them. They may not be performance voice users, but they are professional voice users. So, heaven forbid, if Alie gets a voice disorder, which I've heard you have... You've had colds and whatnot, and fought through, and done this pod anyway young lady. [*laughs*]

Alie: [*high-pitched*] That's true, that's true!

Dr. Alexander: But if you can't do your job without your voice, you're a professional voice user and you deserve the best voice health.

Alie: And you mentioned a half step and I have no idea what that means.

Dr. Alexander: Oh! Musically. *[laughs]*

Alie: Is that like an octave, or...?

Dr. Alexander: So, it's one-sixteenth of an octave. An octave is eight notes, and a half step would be in between.

Alie: Okay, see, already learning so many things. Obviously, I'm not a singer.

Dr. Alexander: It's okay.

Alie: But how does a person make words and sounds? I don't even know what a voice box is. Is that the Adam's apple? Or what do we call a voice box?

Dr. Alexander: So, the larynx, which the Adam's apple is a part that you can feel, is composed of a few paired cartilages; cartilage is kind of that scrunchy version of bone, squishy, flexible. So, the single unpaired cartilages are the thyroid cartilage, and that's the one that in people that have had testosterone-driven puberty, they're going to get a big prominence that comes out, we call that the thyroid prominence, and that's the Adam's apple.

Aside: But just a side note, you can also call it a prominentia laryngea, if you're fancy. But don't feel bad about ditching Adam in the Adam's apple name since it was likely just a bad translation from some Hebrew term meaning "the swellings of a man." But if neither an Adam's apple or a prominentia laryngea are just not striking a chord for you, just call your throat cartilage a goozle. And yes, I will use it in a sample sentence provided by an online dictionary, "They served real good cold beer in those days, it almost froze your goozle pipes." But it pains me to tell you that goozle is a term that actually has its dance card pretty filled with meanings because according to another word origin site, a goozle can be any substance with the consistency of thickened gravy, not necessarily going down your goozle. But moving on, moving downward.

Dr. Alexander: Below that is another cartilage called the cricoid cartilage and that one is like the strong beam of the airway, keeping it nice and open for all the parts that need to move about. And now, paired cartilages are going to be the arytenoids, these are like sailboat's sail shaped cartilage that do a lot of moving. The vocal cords are actually strung from them. They have a complicated series of pulleys, muscles, make them move in several different directions to allow the voice box to achieve closure and opening.

Aside: And your vocal cords and pretty much right where your head meets your neck, in the front, just below the hyoid bone. What the fuck is a hyoid bone? No one ever told me I had this bone. It's in the front of my neck? It's floating in my neck? A hyoid apparently means U-shaped in Greek and this thing does look like a horseshoe or half a bread crust right under your jaw. Why didn't you tell me I had a floating toast bone that anchors my tongue to my skeleton? Anyway, that bone is just upstairs from the vocal cords.

Dr. Alexander: So, where does the voice come from? It comes from three different parts. The lungs are the power source, they send up the air, the vocal folds do the vibrating, that's the bass sound, and then the resonators are the throat, the mouth, the lips, the tongue, the teeth, and that's how you shape the sound to be like you.

Alie: Oh!

Dr. Alexander: So, we'll often describe the act of vocal production that we are an instrument to. So, in a piano, you have the body of the piano, that's your resonator, the power comes from when the hammer inside hits the strings, and you're the source when you're banging on the keys. So, similarly in us, we have those same three things: a power source, a vibrator, and resonators.

Alie: So, when people say that, "My voice is my instrument," they're not dickin' around, that's real.

Dr. Alexander: No, that's totally real! Absolutely. [*child sings "May-Mi-My-Mo-Moo!"*]

Alie: And what about different qualities of a voice over time? Obviously, if a kid calls you on the phone, you're like, "I know this is a kid." And then if your grandpa calls you on the phone, he's going to sound like a grandpa. So, what is it about age that changes the quality of a voice?

Dr. Alexander: So yes, our voice box and our resonators change over the course of our lifespan. When we're young, everything is tiny, so you'll hear people say children have small voices, because they do! Their resonating system is small, and [*higher pitched voice*] they tend to just be up here. They also haven't gone through any of the hormonal changes which will, when puberty hits, impact the shape of the voice box and the vocal folds themselves. We actually have hormone-sensitive tissues inside of our voice box, and depending upon which hormones we get more of during puberty, the vocal folds may get thicker and wider and then the voice box stretches as the thyroid cartilage changes for those folks who get testosterone puberty.

Alie: And then if you are, let's say, going through menopause, or if you are taking testosterone for gender-affirming therapy, how does that change what's going on there as well?

Dr. Alexander: So, for my femmes who are going through it, dryness down there is associated with dryness up here. [*laughs*]

Alie: Realllly?

Dr. Alexander: Yes, so your overall moisture levels are going to change as you approach... I like to think of it as the last puberty, as I head into it myself. [*laughs*]

Alie: Agonizing, an agonizing surprise puberty.

Dr. Alexander: It's exciting. Life is exciting. [*laughs*] [*"That's one way of putting it."*] Yeah, so which hormones you're getting are going to influence everything from the texture of your mucus to the thickness of the tissue itself, which kinds of proteins and carbohydrates it's going to be tending to secrete, how thick your vibration layers are going to be, all of those are going to be impacted by the hormones that you're experiencing.

And to go back to the whole lifespan, as we age, the same way our pectoral muscles and our arm muscles begin to droop and what we call atrophy or lose the body, the vocal folds can do that as well. So, older voices will tend to be maybe a little thinner, you might describe it, we call it asthenic, because they lost muscle bulk and we have things that we can do to help folks that are in that situation who still need to use their voice because they may still be working, or just to feel more confident as well.

Alie: Yeah, you know my dad was really sick recently, my dad just passed away, but as he was getting sicker, he was losing a lot of weight and his voice changed a lot, and I never was sure what that was about and it's interesting to think that maybe his muscles were atrophying.

Dr. Alexander: But also, like loss of power, yeah, that's another thing we have in common. It was my mom in June, myeloma.

Alie: Really? Nooo!

Dr. Alexander: Absolutely, absolutely, 100%.

Alie: I'm so sorry.

Dr. Alexander: We're like little Twinkies, the two of us.

Alie: Holy shit, I'm so sorry. How long was she sick for?

Dr. Alexander: Oh, so she actually was diagnosed when I was a chief resident, so back in 2007. So, we had 15 bonus years.

Alie: Yeah, we had 10 with my dad. I'm so sorry.

Dr. Alexander: Oh, we're just together in heart.

Aside: So, to learn more about this cancer I hate, you can listen to the Hematology episode on blood. And for myeloma patients, the uncut Hematology file on my website has a lot of extra questions I asked for patients and that will be linked in the show notes. And an extra donation for this episode will go to Myeloma.org in honor of Dr. Alexander's mom, the late and wonderful, Reverend Barbara Alexander.

Alie: I'm so sorry you lost her though.

Dr. Alexander: Oh yeah. It's... Totally had a therapy appointment about it this morning. So, you know, we just keep doing stuff.

Alie: Mm-hm, I've got one on Friday. *[laughs]*

Dr. Alexander: Yeah. It's the rest of our lives and we just... we live it.

Alie: I'm sure she was so proud of you.

Dr. Alexander: Oh yeah, she's a character. *[laughs]*

Alie: She and my dad are somewhere, right now, just like going, "Hey, nice."

Dr. Alexander: She's probably bossin' him around too. *[both laugh]*

Alie: He'll take it.

Dr. Alexander: Because Grandpod was gentle. *[laughs]*

Alie: Yes, he was a very... Grandpod was a very gentle guy. It was interesting to hear that, as you get weaker, and even if you're sick or you're tired, is that something that people ever come to you wanting to turn back the clock on?

Dr. Alexander: Oh, absolutely.

Alie: Really?

Dr. Alexander: Yeah, they want to get their young, robust voice in the same way they want to get their young, robust face. *[laughs]* And hopefully we can get them to get their young robust hearing just by wearing the hearing aids. So, we can do procedures either under general anesthesia, full sleep, no pain, no memories, no moving; or under local anesthesia, mild discomfort with lots of coaching through the event that can actually just plump up the vocal cords with injections.

Alie: Wow.

Aside: This is called a voice lift. Who knew?! Not me. The gravely, raspy, grip of time can be plumped up and then the song of youth returns, if that is what you want. I watched some videos down the glottal hatch of people's vocal cords before and after a voice lift... I don't know how to describe this delicately, but my first impression of it, it looked, the atrophied

older vocal folds looked kind of like a vag that was open wide. And then the rejuvenated ones, kind of look like a vagine that was caught mid-wink, kind of closed up. Speaking of voice and crotches and changes, we're going to talk a lot more about puberty and gender and vocal matters later on in this episode.

Dr. Alexander: And they can last anywhere from 6 weeks to around 2 years, to some that are quasi permanent, but those are usually going to be under surgery because we have to do a little bit more work and you shouldn't be awake for that.

Alie: Yeah. I'm sure the recovery time is at least a few weeks, right?

Dr. Alexander: Well, most of them I get them talking within two days and I just give them three rules: No whispering, because whispering is actually really bad for your voice box because you're putting a lot of pressure and squeezing to make that [*strained, loud whisper*] quiet but strong voice, (that was exhausting, even just that.) No talking on the cell phone outdoors because people forget that they're competing with the noise in the background, so they're actually talking louder than they think. And then the third rule is if you can't touch them, you can't talk to them, so no shouting through the house.

Alie: Wow. Oh my gosh. Okay, now what about coughing? What is happening when you're coughing to your vocal cords? Is it chaos down there?

Dr. Alexander: It's misfortune, absolutely.

Alie: It's misfortune.

Dr. Alexander: They are experiencing a forceful slamming shut, followed by an air eruption. And because we rarely cough once, they're slamming together pretty hard. And we have seen people who just from a coughing disorder, whether it's pneumonia, or unfortunately, recently COVID being a coughing disorder, or even from really hardcore throat clearing, where the banging together actually destroys part of the lining and puts them at risk for a thing called a granuloma, which is an irritation that grows and it kind of makes like a popcorn-looking thing and stops your vocal cords from closing really well. And it's a cycle because having it there is an irritant, which makes you cough, and coughing makes it worse, and it getting worse makes you cough, et cetera et cetera.

Alie: Is that how a cough from an illness can become chronic, even though you're not infectious anymore or you're not infected with, say, pneumonia or bronchitis, that cough becomes chronic from that irritation?

Dr. Alexander: Chronic cough comes from a few different kinds of things. It can come from the aftereffects of an infection, like if you had a sinus or a nose infection and it's dripping, [*"Gross."*] that'll make you cough. But also, there can be nerve-based coughs, coughs from the original issue. But then we also get into the habit of coughing, and it ties closely to throat clearing where we're [*clears throat twice*] all the time. And we actually have certain kinds of rehab where we basically teach you to ignore that stimulus, to extinguish the stimulus. When you feel that you want to cough, you take a drink of water, or you do a different thing, or you say something but you just let the air out gently so instead of going [*small fake coughs*] they just go [*exhales*] and let the air out so that they're not giving that irritating stimulus again so that we can help break the cycle of the coughing. [*"She's got this incredibly grotesque throat-clearing tic, it's like (several exaggerated throat clears). It's like she's digging for clams."*]

Alie: Well, what's happening with a cough drop?

Dr. Alexander: So, cough drops are doing a couple of things. They'll often contain menthol, and menthol just kind of opens up all the passages in the nose, does a little bit of shrinking of how much mucus you're making so there's less irritant going on. When you're breathing it in, it's also soothing and reducing some of the mucus in the throat. And then the third part is you put any candy in your mouth, you're going to make more saliva, so you're getting wetter saliva instead of the thick mucousy one that the menthol is drying up. So, your throat is just happy that you're getting a little bit more saliva to help soothe it.

Alie: Is that cool? Is it cool to have cough drops if you need them?

Dr. Alexander: So, they're okay. You just want to... That's one of those things where it's like, follow the package directions. You shouldn't have a cough drop every hour on the hour for several days. That's like, "Okay, what's really going on here?" and examine, "Am I drinking enough water? When am I eating and what am I eating? Am I eating a whole turkey dinner and then laying straight down and giving myself reflux which is going to burn my voice box?" Hello, fast-paced people who work in these jobs. *[laughs]*

Alie: Yes, indeed. Is there something that is better for reflux? Is it better to eat at 7:00 PM if you're going to bed at 11:00 and just give your body time to not burp up acid?

Dr. Alexander: Right, so you're going to transit the food that you put in your belly within three to four hours, so I try to give folks a window. You can eat almost whatever you want, pay attention to your body and how it responds to different foods, but you want an empty belly when it's bedtime. So, last food must be done, for my beginners I tell them two hours because they got to get in the habit and it's so hard. We're used to... There's always a snack at the side of the bed, there's cookies. "I went to bed with toast, I went to bed with a fruit." But especially if you have symptoms of cough, voice trouble, or specifically heartburn, you've got to tighten it up. Empty belly. So really, three hours, I would love to see, before you lay down at all.

Now, thinking back to my medical school and residency days, if I got home at 9:00 or 10:00 PM, I'm not staying up until 1:00 because I have to get up the next morning at 5:00, so that meant making modifications, which we recommend to folks all the time. So I, for years, slept in a recliner if I was having a late day. So, I would have my meal and I would have to go right to bed, so I would just make sure I was at a little bit of an incline, give your head some support, and that's just a modification. Just like you would modify an exercise for your own health, you can modify the things you have to do. You don't always have to sleep in a bed.

Alie: I would never have thought of that as like a fix for that. Because there have been times where I have come home, with my purse still on and microwaved a frozen dinner. It's been like, "This is the picture of such a... just a haggard career woman."

Dr. Alexander: It's glamorous. We're both living glamorous lives. *[laughs]*

Alie: What about... does sleep apnea fall under your surgical interventions at all?

Dr. Alexander: So, in the broader umbrella field, sleep surgery is also part of otorhinolaryngology, head and neck surgery. So, there are surgeries that can be done to reduce the resistance in the nose and also to keep the tension in the tongue and throat at a level that keeps it open, because sleep apnea is really about collapse. Sometimes that's nerve-based, sometimes it is bulk based. But regardless of weight, BMI, whatever measure you want to choose, it can happen to anyone, having that sleep apnea. So, the answer is not always just: lose weight. There are surgeries that may need to be done to help reduce the resistance in the airway.

Rarely we involve the voice box, but we can do that if they have a condition called laryngomalacia. [AI voice says, "Laryngomalacia."] Laryngomalacia is a condition where the voice box collapses under the pressures of breathing in and can contribute to the sleep apnea, so we can make some modifications to help it stay open and more strong. But mostly for sleep apnea, my concern is, again, you're breathing against resistance, what happens? The chest pressure goes down and the belly pressure sucks up more reflux. So, folks whose sleep apnea is not treated also have more reflux symptoms very commonly.

Aside: So, double whammy, and not good whammies either one of them. But not all snoring is related to bulk in the throat and also, as we have discussed on this podcast, BMI is a very loose and kind of shady metric for determining body composition; it was invented by an Austrian astronomer, was not even a medical doctor. But even a legit MD can tell you that, of course, BMI does not tell the whole story at all and it's not fair to bodybuilders or to me the day after I have ramen. I'm like a juicy, salty Shamwow of a person.

But the condition laryngomalacia, which she mentioned, can also show up in babies who have floppier vocal cords, and it leads to something called stridor, or noisy breathing, which out of all of the loud things that a tiny baby can do from either end of their little soft bodies, I never knew that just breathing could be a loud thing. Those poor little babes.

Alie: What should people do if they have sleep apnea, they're sleeping like shit, they feel like shit, they go to the doctor, and the doctor is like, "Just lose some weight and get back to me." And that's not the problem. Are there any diagnostic things that people should make sure they get checked out?

Dr. Alexander: Yeah, so the gold standard testing to diagnose sleep apnea is what we call a polysomnogram, or a sleep study. And those can sometimes be done at home as a screen or they can be done in a lab where we are checking, "What are your brain waves doing?" To make sure you're asleep, and what stage of sleep you're in. They've got a little band around your chest to see, are you making the effort to breathe? They've got all kinds of heart monitors and blood oxygen monitors to see if you are getting air and then sometimes there will be a little monitor that is hanging out in the throat to see what the pressure is.

So, obstructive sleep apnea, which is the kind that most folks have, is the kind where you're trying to breathe but there's a blockage. And so, the sleep study is what's going to diagnose it. So, if you specifically ask for a sleep study and your doctor will not refer you for that, unfortunately, I would say break up with that person because healthcare is about teamwork. Like, I'm the content-subject matter expert, and you're the expert in your life and so together, we've got to sort out what we can do to make your life better.

Aside: Who doesn't love to dump an asshole? So, don't sleep on that good advice, say goodbye. Find someone better. Cut bangs. Text your crush. We're all going to die. Doctor's orders.

Alie: What is snoring, then? Because if clearing your throat and coughing is not good for your vocal cords, snoring's got to be bonkers because you sound like a Muppet. It's just like [short fake snore] What is happening in there?

Dr. Alexander: So, snoring is a vibration, usually of the soft palate, the little hang down dingley, the bell that we call the uvula.

Alie: I don't even know what that does.

Dr. Alexander: So, that is, it's a part of the throat. We don't really know why we have the hang-down bit there, but that part of the palate is a part of closing off the nose so when you swallow, food doesn't go up your nose. But that part vibrating is usually what's going to give you snoring.

Alie: Really? The uvula vibrating?

Dr. Alexander: Oh yeah, and the whole soft palate.

Alie: Wow!

Dr. Alexander: Yeah, yeah, yeah, it's bonkers.

Aside: If you want to know, "Where is my soft palate, exactly?" Run your tongue along the roof of your mouth toward the back until it starts feeling squishy. There you go, that's your soft palate. So, snoring can happen when the root of your tongue and your soft palate kind of flappity flap onto the back of your throat, and so you're vibrating your airway by skimming air, sometimes through your mouth, because your mouth goes into the windpipe without having to deal with that roadblock of that flappity flap palate.

But obstructive sleep apnea takes things a step further with these blockages that pause your breathing for seconds, sometimes in some people, minutes at a time, holding your breath while you're asleep and you're gasping and snorting yourself awake for air so many times a night, which is why that machine that forces air into your lungs but it looks like a space octopus is preferable to actually suffocating on your own throat meat.

Alie: But it's not your... it's not doing damage to your vocal cords?

Dr. Alexander: Not necessarily. But having untreated sleep apnea is just setting you up for a whole host of troubles, yeah.

Alie: And what about performers? Opera singers, Shakespearean actors, who are using their whole diaphragm, which to me whenever someone is like, "Just use your diaphragm," I'm like, I don't really fully understand what that means. Is that just an expansion of your lungs? What's happening when people are projecting?

Dr. Alexander: Ahh so, projecting is maximizing both the power source and your resonators and aiming them the right way for the audience. Which is why when you're watching stage plays that are not mic-ed, or when you're watching opera that is not mic-ed, it's very unnatural because I'm singing to you, about you, and I'm facing the other way, toward the audience. Because we have to aim the sound, our resonator, toward who we want to hear it. And since you're in the cast, you already know what I'm saying, you don't need to hear it, the audience needs to hear it.

So, to understand your diaphragm better, we're going to put one hand on your tum-tum, right below your ribs and just take a natural breath and what happens to your tum-tum?

Aside: Thankfully, my tum-tum wasn't already distended with coleslaw or beans or anything.

Dr. Alexander: What do you feel, does it go in or out?

Alie: I feel like it goes out a little bit.

Dr. Alexander: Yeah, so that's normal. The diaphragm is the muscle that separates your belly cavity with your guts in it, from your chest cavity which has your lungs and your heart. So, in its relaxed state, that's breathing out, exhaled. When you breathe in, that muscle, because it's like a dome, the muscle contracts so it gets smaller and that actually pulls your chest cavity bigger. And so, to do that your tum-tum should come out to make room for your guts to be that way.

So, a good breath [*deep breath*] has your tummy coming out, and that's why costume designers are really smart because almost all of those gorgeous femme opera costumes have an umpire waist because their belly has to move. There is no hourglass-shaped opera costume because you've got to breathe!

Alie: Wow! I never thought about that.

Aside: Okay, so there's a difference between using your chest muscles to fill the upper part of your lungs versus expanding your belly with your diaphragm and having your diaphragm do the work to fill the lower lung too. And singers want to get as much air in so they can have more power and they can take fewer breaths too.

But on the chill side, several studies are on top of it when it comes to researching the whys of that deep diaphragmatic breathing and how it switches your brain out of panic mode. In one 2019 *Frontiers in Psychology* paper titled, "Pulmonary Afferent Activity Patterns During Slow, Deep Breathing Contribute to the Neural Induction of Physiological Relaxation," the authors note that:

Recent evidence suggests that breathing at six breaths per minute promotes behavioral relaxation (dope, we love that) and baroreflex resonance effects and appears to elicit resonant and coherent features in neuromechanical interactions that optimize physiological function as well as support the expression of slow cortical rhythms to induce a functional state of alert relaxation and via nose breathing recruit hippocampal pathways to boost memory consolidation.

I had to do diaphragmatic breathing just to get through that sentence. But I know you don't know what that means and that's okay because neither do I. But guess how much it costs? \$0 to feel more chill. Air, it's free. So, deep belly breathing is not just for your sister's Lululemon-obsessed roommate, it also does science things that are great for the brain area. And yeah, it's why you don't see a lot of opera stars lacing their ribcages into bone-filled sausage shapes.

Alie: Like a lot of period costumes...

Dr. Alexander: Bless their hearts, bless their hearts.

Alie: I mean, corsets. Augh.

Dr. Alexander: I won't do it, I won't do it.

Alie: Nope. What about when... Let's say that you're a singer, say you're a professional singer. I remember hearing that Adele having nodes and it was the worst thing that a singer can ask for.

Dr. Alexander: Yes, yes.

Alie: What are those and why does vocal rest help?

Dr. Alexander: So, vocal fold nodes or nodules fall under a category of voice box injury that we call phonotrauma, or injuries that come from producing sound. It also includes things like polyps and cysts, all of which have to do with the part of the voice box that gets most of the energy delivered to it from the vibration effects. Nodes or nodules are on both sides, and they are kind of like a callus that forms. So, I think about, if you do manual labor or if you play a sport... when I was a kid, I played baseball, so I had horrifying calluses after I had blisters because that was where all the force was going. Now, I got good coaching and my coach said, "Put on some batting gloves." [*"Get yourself some gloves."*] And now my hands are soft again.

And so, vocal fold nodules are often a sign of not having had enough good technical coaching, and you're kind of pushing through, and so you're getting calluses instead of finding where your natural range is and having the right support again from your breath and from your resonators. So, those are treated with therapy where we work to improve your technique, *almost* never need surgery; almost never need surgery.

But also, femme larynges sometimes just have a little bit of a shape like that, so we've learned that they're not always a problem, not always a disease, not always a pathology. If we looked at a thousand femme larynges, we might see 600 or so, with kind of an hourglass shape where they meet early in the middle. And maybe 15, 20 years ago, we would have said, "Oh my gosh, you have nodules." But if they don't have a problem with their voice, they don't have nodules really, they have a femme voice.

Alie: Aha! What about surgeries to feminize a voice? Is that shortening the width of the vocal cords?

Dr. Alexander: So, when we do feminizing voice surgeries, the goal is to increase the pitch. Right around 200 cycles per second is the inflection point where we culturally say, at least in the US, we say "this is a masc voice, this is a femme voice," so we want to get our... particularly our trans patients, we want to get them above 200 so that their voice is concordant, similar, in line with their physical presentation and their internal sensation. So, to do that, what we end up usually doing is shortening the length of the vocal folds so that that same power is going through a shorter space, so it has to vibrate faster, so that takes the frequency higher. So, shortening the voice box, usually by about one-third to half, while maintaining breathing space, is what's going to get that pitch to go up.

Alie: That can help a lot with the dysphoria with feeling like you're not sounding like you feel, right?

Dr. Alexander: Absolutely. Misgendering is a psychologically harmful experience that isn't always even intentional. When you're in the drive-through or on the phone, we make assessments based on that frequency. And on a bad day, I get misgendered but because overall I'm aligned and cis, I can throw that off one time. But if it's happening all day, all the time, it can wear on a person, yeah.

Aside: So, feminization surgery can address the length of the vocal folds themselves but there are other factors in affirming a voice and that can include the shape and the depth of the larynx itself. And a 2020 paper titled, "Vocal Feminization for Transgender Women: Current Strategies and Patient Perspectives," notes that the first voice feminization surgery may have been performed by the Catholic church, which prohibited women from singing in services, and instead performed castration on boys to preserve their childhood pitch for singing in higher registers in the Sistine Chapel... Not sure what the consent was back then.

But either way, the voice box has a lot of androgen receptors, so the onset of puberty and a flood of testosterone means that the length and the thickness of the vocal cords increase, as does the diameter of the larynx. So, think of a flute turning into a trombone. But if you're a person with ovaries but you have a hormonal condition that increases your testosterone, you can also experience deepening of the voice. And if you're assigned female at birth but are on testosterone, your voice box will likely respond to that extra testosterone and deepen your voice.

But if you don't have access to testosterone injections or vocal feminization surgery, which can cost up to \$15,000, there is the non-invasive option of vocal therapy, and that's practicing

and modulating your voice using your throat and tongue and vocal cords to change the pitch and even the patterns of your voice. I was doing some research and found an app called Eva that has video instructions and lessons in pitch, and they have a tune tracker, and exercises for trans people who want to modulate their voice without hormones or surgery, or just want to practice. There is this app called Eva, it costs about \$80, but cheaper than surgery.

Will it stick though? I don't know. Why don't you ask Elvis, or rather, Austin Butler, or really just ask Dr. Alexander about Austin Butler, which I did yesterday. I texted her, I was like, "Hey, if a person were to, say, train himself to speak like Elvis for a few years, could his voice get stuck like that? Or is it really more of a brain habit?" And Dr. Alexander wrote me right back, she was like, "Brain-body habit. The way we speak is part anatomy and part learned. So, sweet Austin Butler *could* unteach himself his current voice, but we should ask ourselves, should he?" And then she put a smiling emoji with a halo. So, perhaps he spent so long learning the voice, his muscles have really internalized those patterns. If you want a deeper voice with less effort, you could also just get a cold which causes vocal fold inflammation and thickening. But don't do that, no one needs that.

Alie: And do you find that... I'm always so interested that when we have a cold or we sound a little husky we're like, "Ooh, I'm Demi Moore. I'm sultry, I'm Kathleen Turner." But obviously, people who are masc, because of just internalized misogyny also, just in general, being perceived as having a femme voice is almost like insulting or something.

Dr. Alexander: It is because femininity is an insult. [*laughs*]

Aside: And how have femmes or people assigned female at birth responded to that? Subconsciously or consciously, a little something we talked about in the 2018 Phonology episode with Dr. Nicole Holliday. [*speaks with vocal fry*] But you may have heard it on, like, countless reality programs et cetera.

Dr. Alexander: Oof, all right, vocal fry, I'm going to go there. It's super controversial because vocal fry has been kind of like the straw man argument for, "Aging man hates young woman's voice on radio." [*"Something called vocal fry that is creeping into the speech patterns of young women. Is there anything equivalent in men?" "No, there isn't."*] But there is harm that's coming to your voice because if you're not using enough air to support then you're going to be doing a lot of that squeezing and you're putting yourself at more risk for the phonotrauma, the injuries to the vocal folds from trying to push through. You would not try to keep running the marathon if you hadn't eaten anything the day before. And that's what it is. If you're trying to talk without any air power, [*speaks with vocal fry*] that's how you get into this zone with the fry. And it's literally asking the car to keep going with no gas. Just take a breath people.

Alie: Ah! Okay, that's actually very... That's so good to know.

Aside: So, too much vocal fry, which is your vocal cords flapping a little more chaotically than rhythmically, could possibly damage them in the long term. Most doctors say, it's probably not going to happen. And also, just today I saw the headline, "The Doomsday Clock reveals how close we are to total annihilation." So, I'm just going to urge you to worry about other things, especially if it's just because some guy farting into a leather recliner left a comment on your social media telling you that you sound like a valley girl. Just keep moving, babies.

Alie: On the topic of sounding the way that we want to be perceived, obviously if our whole face is a resonator, and our neck, why do we sound so different on recordings than we are hearing day-to-day?

Dr. Alexander: Ahh, so we both never see ourself and never hear ourself outside of a photograph or a recording. Because when you're hearing your voice, you're hearing the vibrations up through your own head and so, you're not hearing what other people are hearing, you're not necessarily hearing that through the entire mechanism of your ear until it's played back and that's why it sounds foreign. Because when you're talking and learning to talk, you're hearing actually the vibrations directly to your cochlea from your temporal bone inside your head, which is why you can hear yourself hum and it hasn't really gone anywhere. And we only ever see ourself in mirror image, which, that extremely disturbing phenomenon, those filters where they're like, "This is how people see you." I'm like, "No thanks."

Alie: Yeah, no. I'm like, "Who is that lady? Why does she look like a Picasso painting to me?" *[both laugh]* You know what I mean?

Dr. Alexander: It's because it's off... it's 10% off, like "What is that?"

Alie: It's like uncanny valley with your own face.

Dr. Alexander: It upsets me. But it's also exploring that... like listening to this episode is going to be an exploration of accepting myself the way others perceive me, *[laughs]* and hearing my voice the way others hear me because I rarely hear it.

Alie: Yeah, it's a trip for me every time. It's so difficult, even as someone who professionally is their voice. And as somebody who professionally uses their voice and is not so smart about it, I have a question about ice. I have a problem with ice, that I love it too much. Too much! I have an industrial ice machine in the garage because I was constantly running out the ice in the freezer. And I also do some voiceover work on the side, and it occurred to me that I'm in the booth drinking ice water, they can probably hear the ice clink and that is probably super unprofessional. What is up with temperatures and what you're drinking? Is ice bad? Is hot coffee bad? What are we doing to ourselves?

Dr. Alexander: So, the range of temperatures that don't cause you pain are all okay. Ice, for some people, is about the chewing and for other people is about just getting the water in a more controlled way since it has to melt as opposed to just gulping down water. Also, when we give ourself any cold stimulus in the head and neck and in the mouth, it actually activates the calming part of our nervous system so you may be treating yourself in a way that's very helpful by putting cold in your mouth, it's going to slow your heart rate, it's going to slow your breathing, so any jitters or nerves that you have are going to be suppressed by your nervous system. It's the parasympathetic system.

Alie: Wow! So, it's like, "show me you have an anxiety disorder without showing me you have an anxiety disorder." I just have like a Big Gulp of ice water. *[laughs]*

Dr. Alexander: And if you do, it's like, welcome to the club because we're all not doing fine. *[both laugh]*

Aside: Third year of a pandemic and reading headlines about the apocalypse, anyone else? But yes, I edited this episode during a rainstorm while drinking a 32-ounce iced tea that was mostly just tea'd ice, there was so much ice. But next to that iced tea I also had a mug of hot tea because I'm a chaotic little bitch like that.

Dr. Alexander: And for other folks, the super hot sensations are stimulating. It gets them going because warmer will tend to push you a little bit more toward the sympathetic, the amped up body system in addition to the caffeine.

Alie: Does the cold water cause more mucus production or congestion, or does it freeze up your muscles in your larynx?

Dr. Alexander: So, it won't freeze the muscles, but it will tend to give you kind of a thicker mucus just because it has less energy in it and so it's going to be an energy sink, it's going to take heat out of the body. So, that's endothermic reactions because I also really love chem- I miss chemistry, and math, and all that stuff. So, it's pulling energy and warmth out of you whereas warmer things, particularly steam as it's going from liquid to gas, it's a big energy jump and so it has a lot more energy in it and it's going to be able to thin the mucus secretions that are in your throat. So, steaming is fantastic for the skin of the face, the voice box and the airways love it as well so, you know, everybody who does your nightly facial steaming, your body is really pleased with that.

Aside: For more on steaming your yoni, you can see the Gynecology and Urology episodes, friends. But all the things you can do with your genitals, doctors report that exposing them to scalding hot gasses should be at the bottom of your list.

Dr. Alexander: So, we want steam to be something that you can put on this thin skin of the inside of your wrists and it's comfortable, that's going to still be appropriate.

Alie: Do you have any hacks for if you don't have a, like, \$75 facial steamer from Bed, Bath & Beyond?

Dr. Alexander: Yes. It's something that most of us who are housed are going to have and it's a cup of hot water! *[both laugh]* Legit. So, my folks, so we're here in the Bronx and, of the 62 counties in New York state, this is number 62 in health outcomes and economic opportunities, and so I am not recommending "go buy a hundred-dollar thing" to almost any of my patients. I'm like, boil water on the stove, put it into a mug that is safe, maybe wrap a towel around it and just hold it under your face and breathe it in. And that's a steamer.

Alie: Nice.

Dr. Alexander: So, if you're on the go, get a cup of just hot water from the deli and that's steaming too.

Alie: Oh, wonderful. I'm going to start steaming my face. What about... I used to drink a lot of yerba mate because it is like legal drugs and... it is so hardcore; I would drink a cup of yerba mate and be like, "I'm going to go run a half marathon," I've never run before. I don't know what's in it, there's some catechins. Anyway. But I read that some studies correlate it to people in South America who drink it having higher rates of esophageal cancer and throat cancer, and they determined it was maybe the temperature of the water. Are there any things having to do with throat cancer that we should or shouldn't be doing?

Dr. Alexander: So, I wouldn't put yerba mate or hot things on that list. I mean we've had millions of years of us drinking hot things because they've been important and useful, particularly in the edges, in the higher latitudes.

But the number one thing you shouldn't do to the throat to prevent cancer is inhale a thing that's on fire. So, whether that's tobacco, marijuana, any of the other things that people smoke, we don't want to be bringing in hot, combusted, on-fire fumes into our voice box because we know... Tobacco is the one that we've studied the most and that one can cause cancer from the lips all the way down to the tips of the lungs. And so, we just don't want to get- We want to stop kids from starting. As far as vaping is concerned, it's good as a transition to nothing, as much as possible.

The other big contributor to throat cancer, kind of higher up around the tonsils and the back of the throat is going to be human papillomavirus. And so, I'm going to put in a plug to get

your Gardasil, get your HPV vaccine, boy girl or in between, get your HPV vaccine. I think I just made them a slogan. *[laughs]*

Alie: You literally did. *[repeated: I'm going to put in a plug to get your Gardasil. (beat starts playing with autotune) "Get your HPV vaccine, boy, girl, or in between. Get your HPV vaccine, boy, girl, or in between."]*

Alie: I mean, and because there are some places that girls in certain states were being dissuaded because they thought it would make them sexually active if they got a vaccine that can prevent cancer. No one who has ever had a PAP smear was, I'm sure, advocating for that.

Dr. Alexander: There are some people in this country who are in systems of bondage, which they did not actively choose, and a lot of their identity is wrapped up in it, and attachment to community is wrapped up in it, and it includes some harmful teachings that have come to them from even people who represent my same faith and I get upset about it. But the existence of apples does not mean you have to have an apple, so the existence of sex does not mean you have to have sex. So, no amount of medical care is going to make you have sex before you are ready, at least it shouldn't.

So, protecting your child or yourself from a viral-mediated cancer, the other activities come from conversation, not from an injection, not at all. If an injection is enough to set your kid off doing anything, they were going to be doing it anyway. So, maybe it's time to examine the relationship and open up and have some talks with them about what they're thinking and experiencing, because no vaccine has ever made me do anything and I just got a couple in the past couple years. I didn't change much.

Alie: Yeah, and what a breakthrough to have that Gardasil vaccine available. Because HPV is so prevalent in so many people, it can be transmitted in so many ways, and yeah, it can be lethal for people. I know several people who have gotten cancer, cervical and esophageal.

Aside: Great news, if you are over 9 years old you can get this vaccine. If you're over 26 though, doctors are kind of like, "Nnh, don't bother, you've probably already been exposed." But folks of all genders can be vaccinated and if you've got a cervix and have the vaccine you are seeing a 78% reduction in cervical cancer, thank you very much. So, ask your doctor, and at the very least, get your PAPs yearly if you can't get the vaccine.

Now, we're going to take a quick break but when we're back, a free tip that will improve your life and your skin. But first, we'll donate some money to worthy causes. First to Myeloma.org which has amazing resources for folks affected by this blood cancer, and that is in memory of Reverend Barbara Alexander. And also, a cause of the ologist's choosing this week is the Laryngology Education Foundation Health Equity Grant program, which supports endeavors that increase understanding and awareness of how racial disparities impact laryngology and speech-language pathology care in the US, specifically for patients of the Black diaspora. And it supports initiatives that address these disparities in our communities. So, those donations were made possible by sponsors of the show.

[Ad Break]

Okay, back into it.

Alie: What about hot water, lemon, honey? What's that doing?

Dr. Alexander: So again, the steam is the main actor in hot water. Honey soothes the top parts of the throat but it's not ever going to touch the larynx in a healthy person because the larynx is the airway. And this is another fun tidbit about the laryngopharyngeal complex, this upper throat

area, it's the only part of the body we ask to do three things. Other parts you get two responsibilities, but this area needs to breathe, speak, and safely handle foods. So, the foods go around the side, the air goes down the middle. So, nothing you're drinking directly is ever going to go directly into your voice box if you're in a healthy state. If it does, that's a condition called aspiration where the food and drink is going into the lung direction, and we end up treating that as well. Aspiration is anything going into the lung that's not air.

Alie: Which is pretty much... you just want air in there.

Dr. Alexander: Only air and some lightly, humidified air. We want it to be warm and moist like the lung likes it to be. So, that's actually one of the functions of your nose, is to warm and moisten the air, which is why nose breathing is preferred because the air has time to pick up all the energy, and molecules, and moisture. But yeah, anything that's not air or humidified air going into the airway is a no-no.

Alie: That's a no. Let's talk about Mariah Carey.

Dr. Alexander: Oh, let's! Mimi.

Alie: How does she do it? How does she make noises that some humans can't even hear?

Dr. Alexander: So, the whistle tones, which I'm going to say that she is the heir to Minnie Riperton, who is Maya Rudolph's mom from *SNL* fame.

Alie: [*whispers*] I did not know that.

Dr. Alexander: Minnie Riperton, listen to the song, "Loving You." [*clip from song that includes extremely high-pitched, whistle tones*]

Alie: Okay.

Dr. Alexander: "It's easy because you're beautiful," and then she does those whistle tones also. So, most of us have at least three registers, or forms, of the voice. So, just basically we're usually using our chest voice when we go into what we call falsetto, that's kind of the head voice. And that would be the difference between [*sings*] "One two three" and [*sings, high pitched, more airy voice*] "One two three." I went up in my falsetto, that's lower, lower pressure and I'm letting it just kind of resonate up higher, my vocal folds are tenser and they're vibrating faster to do those higher pitches and I'm not pushing and squeezing, I'm just letting it come out. So, it's naturally quieter.

And then the whistle tones are an entirely different thing where they've tightened the voice box so much and they've positioned the vocal folds in the right manner where they're doing a frequency that's just on a next level higher. And so, then the resonators are really just shaping it. Which is why when people are doing their whistle tones, they're usually going to do a single phoning. It's usually just "Eee" or "Ooo" or "Ohh" because your articulators are focused on just getting really narrow and letting that sound out. And you can't do a lot of shaping of the sound because everything is squeezing to get it tight enough so that you can do those rapid vibrations at a high frequency that gets up into those whistle notes.

Alie: Nice pipes by the way.

Dr. Alexander: Aww. [*laughs*]

Alie: Do you watch the national anthem and are you like, "You got this, you got this, you got this." Because it's such a difficult thing to sing and it has to happen before every ball game, every... you know what I mean? So, whenever anyone goes up there, I'm like, "You got this, you got this, come on, you got this."

Dr. Alexander: I mean Fergie did a great job.

Alie: No. [*both laugh*]

Aside: [*clip of Fergie singing the national anthem*] It was a choice, it was a bold choice, and I'm not going to leave a comment from my farty recliner about it.

Dr. Alexander: So, that is one of the most difficult songs because of the range of notes that it covers. I just... I wouldn't recommend it as an audition song for just about anything.

Alie: I have so many questions from listeners, can I ask you one million?

Dr. Alexander: One million and two. [*laughs*]

Alie: Yes. We got them. Literally at present, 377 questions. Not a big deal, not a big deal.

Dr. Alexander: Thank you, Ologites! Thank you.

So, that is why this is a blessed two-parter. We will be back next week with so many answers to questions, you'll be so glad patrons asked. But until then [*inhales*] take a big deep belly breath, or six, and ask magnetic surgeons unsmart questions because your life will never be the same. And you can find Dr. Alexander @YourVoiceMD on Twitter or @Your_Voice_Physician on Instagram and say hello there. We are @Ologies on Twitter and Instagram and I'm @AlieWard on both. I'm @Alie_Ologies on TikTok now, say hello.

You can join Patreon at Patreon.com/Ologies where we have discussion threads each week about the episode. I love to read your reactions and chime in. *Ologies* merch is available at OlogiesMerch.com, thank you Susan Hale for managing that and so much else. Thank you, Noel Dilworth, for the scheduling. Erin Talbert celebrates a birthday this week, happy birthday my sister-friend, I love you forever. We have known each other since I was 4 and she admins the *Ologies* Podcast Facebook group with assists from Boni Dutch and Shannon Feltus. Emily White makes our professional transcripts, and Caleb Patton bleeps them. Zeke Rodrigues Thomas and Mercedes Maitland of Mindjam Media work on *Smologies*, kid-friendly shorter episodes. And Kelly R. Dwyer makes the website, she can make yours too. Mark David Christensen and Jarrett Sleeper did additional editing on this episode alongside lead editor Mercedes Maitland who has her own Maitland Audio, you can check that out. Nick Thorburn did the music, and he is in a band called Islands.

And if you stick around to the end of the episode you know I tell you a secret. This week, I'm going to be real with you: I'm recording this from bed, and I've worked from bed all day, and I don't know why I'm so tired. I'm getting over not feeling great, still not feeling great. COVID tests are negative, that's good. But yeah, either way, I'm like missing a spark plug or two.

But a better secret is that Jarrett got falafel as he was driving back from the gym, and for four days, our car smelled just ripe, just inexplicably so. And then at a stoplight, I reached under the driver's seat, and I found a cold, moist, and pretty sizeable onion, right under the seat. It was like the size of an earthworm and sticky in that way but stinkier, and I was just so relieved. I've never been so relieved to touch something so smelly and just to close that stinky chapter. But okay, enough out of my voice. I'll shut it for now. More voice boxes next week though. Come back. Okay, berbye.

Transcribed by Aveline Malek at TheWordary.com

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