



# INTERVIEW TRANSCRIPT

DISCUSSIONS WITH WORLD-LEADING EXPERTS

## **Migraine in Older Adulthood: What Really Changes?**

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**Introduction (00:05):** Migraine is often perceived as a condition of younger and middle-aged adults, yet millions of people continue to experience debilitating attacks well into their later years. While many individuals see improvement in their migraine symptoms with age, older adults face unique diagnostic and treatment challenges that may be overlooked in clinical practice. For postmenopausal and chronic migraine patients, understanding what to expect as they age is crucial.

**Introduction (cont.) (00:35):** Joining us today to discuss the unique challenges of migraine in older adults is Dr. Robert Cowan, director of research [at the] Headache and Facial Pain division of Headache Medicine at Stanford. Dr. Cowan, welcome back to the Migraine World Summit.

**Dr. Cowan (00:51):** Thank you. It's good to be back.

**Lisa Horwitz (00:53):** This is an exciting topic, an important topic, because I think we forget that we might not be over 60 now with migraine, but we will probably be there someday. So, this interview really applies to those in that age group and those hoping to someday be in that age group. What do you think are the most common myths or misconceptions about migraine in older adults?

**Dr. Cowan (01:20):** I would say the most common misperception is that migraine in older adults is different than migraine in younger adults. Ultimately, we like to think of migraine patients as each being an n-of-1 study. My migraine experience is not the same as your migraine experience. As a man, my migraine experience is not the same as a woman's migraine experience.

**Dr. Cowan (01:48):** As a teenager, as a young adult, as someone who's working, as someone who's retired — we're all very unique and there's a tendency to lump us all together: "Oh, you're a young menstruating woman," or, "You're an old person and you probably have all sorts of comorbidities that I have to worry about and secondary headache causes." A whole set of expectations comes with you when you walk into the doctor's office.

**Dr. Cowan (02:19):** And I think it's very useful for both us as providers, and for patients, to be aware and sensitive to these presuppositions, biases, stigma — call it what you will — when we're trying to take care of our headaches. And I think that's the biggest issue.

**Lisa Horwitz (02:42):** If I'm a patient and I'm 60 or older, and I walk into my doctor's office, what are some signs that I might be being treated with a bit of ageism, and not being seen as a patient who's younger?

**Dr. Cowan (02:58):** That's a great question. There are several red flags, and these are experiential. These are things that I've witnessed. I think one common one is, "Oh, you're here alone. Is there someone with you?" You may not be an accurate historian — that you, because you're old, you're also demented, de facto; that you're not going to know your medicines; that you're not going to know your history. There's a real issue here with agency. You don't lose agency with age.

**Dr. Cowan (03:35):** Now, if you are demented, just like if you're on a respirator or you have other patient-specific conditions, there can be an issue with agency. But when someone walks into the room and immediately looks for someone to be your agent, rather than talking directly to you, that's a red flag. And if kids knew what agency was, they would see the same kind of stigma. "Can you explain to me what your mom's, what your mother or father's headaches are like?" is



very similar to saying, "Let me ask your mom what your headaches are like. Let me hear your mom describe what you go through."

**Lisa Horwitz** (04:18): It's very dehumanizing, almost.

**Dr. Cowan** (04:21): It is. It is. And I think that's a real red flag. I think that not affording the same respect to an older person is something we often see, kind of dismissive. "Well, you are 75 years old."

**Lisa Horwitz** (04:44): You should expect a certain level of incurable pain or disablement.

**Dr. Cowan** (04:50): Exactly. I think that's, aside from obviously being very insulting, it's actually against the law. You cannot check with a family member without the patient's permission. And you need to be respectful that the person sitting across from you — regardless of their race, or their age, or their gender, sex — has full agency for, and is entitled to, the privacy and respect regardless of any of those other features.

**Lisa Horwitz** (05:34): I think sometimes I fall into this trap myself, as a younger person, that when I'm dealing with older adults, especially ones with hearing issues, it can be hard to recognize what miscomprehension is due to not hearing, and what is actually due to maybe some other condition. How can you, as a person, maybe if you do have hearing issues, when you go to the doctor's office — a lot of doctors might have accents, they might speak quickly, they might have a mask covering their face — how can you still advocate for yourself in those conditions?

**Dr. Cowan** (06:13): That's a great question. And the way you do it is, you do it: "I read lips a little bit because I don't hear well." "It would help me if you can take your mask off. We can distance ourselves 6 feet if that makes you more comfortable." "Can you speak more slowly?" If you don't say these things, the biases will continue and multiply, and you don't establish an equal relationship. There's a whole stigma — we're the worst of the stigmatizers, "we" being the patients.

**Dr. Cowan** (06:51): The self-stigma, it comes with aging. "Oh, do I have to go through this whole thing again about how I don't hear well? I'm just going to fake it." That's an issue for you, as the patient, to stand up for yourself. You've done nothing wrong except live a long time, and you shouldn't be penalized for that.

**Lisa Horwitz** (07:17): So outside of ageism and how people perceive migraine and treat it, is there any physiological change? Do migraines improve? Does the intensity lessen? Do they kind of stay the same?

**Dr. Cowan** (07:35): Again, I would say everyone is different. It's true that statistically, people, as they age, migraine — for about two-thirds of women — gets better. And by "better," I mean it could be less frequent, less severe, shorter duration; the symptoms and presentations change. Sadly, there hasn't been a lot of research on this. A lot of it is anecdotal. Most headache specialists have these preconceptions. I would emphasize that the data is weak.

**Dr. Cowan** (08:13): But in general, we see in the literature that older people have more atypical features of their migraine. I would maintain that it's not so much that they have more atypical features as it is that physicians don't take the time to really characterize their headaches in detail. So, for example, migraine is generally regarded as a one-sided headache. Every paper you read on



headache in the elderly says that migraine tends to lose its sidedness. It tends to be a more generalized headache.

**Dr. Cowan (08:52):** But generally, when I see a 30-year-old who says, "You know, my headaches are generalizing now. They're not just one-sided and behind my eye. They seem to be affecting my whole head." My thought is, "You're chronifying. Your headaches are generalizing. They're losing the purely migrainous features." When we diagnose chronic migraine, it's not more than 15 migraines a month. It's more than eight with more than 15 headache days.

**Dr. Cowan (09:24):** And the reason we distinguish between headache days and migraine days is because of this process of generalization. So when an older person comes into the office and they say, "My headaches are generalized," that doesn't necessarily mean, "Oh, you have tension-type headache," which tends to be a global, hatband kind of headache. It may well mean that your migraine is actually getting worse and that you're chronifying.

**Dr. Cowan (09:51):** So, that's one example of how the characterization of migraine in an older person is biased by age. Another example is the loss of features like light and sound sensitivity. That's often said to be evidence of migraine in an older population.

**Lisa Horwitz (10:18):** Kind of what I'm hearing is: Your migraines will — your attacks will change with age, and it's going to be different for everyone. But you are likely to see some sort of change in presentation. And that if you start seeing changes such as you're no longer getting symptoms only on one side, pain on one side, it is probably a signal of chronification.

**Dr. Cowan (10:43):** Well, it might be, just as it might be in a younger person.

**Lisa Horwitz (10:48):** Right. So how does a doctor then tell the difference between that being migraine-related or maybe something like stroke-related, or blood clots, or temporal arteritis, or medication-related headaches? How on earth does a patient and a doctor decipher between that?

**Dr. Cowan (11:07):** You do it the same way you would do it in a 12-year-old or a 25-year-old. You talk to the patient. You explore it further. You look for other signs and symptoms. You look at their medications. You look at their comorbidities. You don't assume. Almost every paper on the elderly — and there aren't a lot of them; the last time I checked, going back about 20, 25 years, there were fewer than, I think, it was 600 papers that specifically addressed aging — and almost every one of them starts out with, "You must rule out secondary headaches." Well, duh.

**Lisa Horwitz (11:49):** Right. That's step one.

**Dr. Cowan (11:51):** I would hope we're doing that in a 12-year-old as well as in a 70-year-old. Is it more likely that you see more comorbidities in someone older? Yes. Is it more likely that an older person will be on more medicines? Yes. Is it more likely that a patient will have had more head trauma? Maybe. But you can't come into the interview with those assumptions. You should be just as thorough in a 30-year-old.

**Dr. Cowan (12:21):** I mean, a 30-year-old who has been a very aggressive hockey player is way more likely to have had multiple head traumas than an 85-year-old who has been a very successful accountant for 50, 60 years.

**Lisa Horwitz (12:41):** Why do you think we don't have more research on this age group?



**Dr. Cowan** (12:46): Clinical trials are designed by people who want to sell drugs. Not necessarily a bad thing; drugs have their place. But they want their trial to be successful, and they want it to be approved for the largest population possible. So, who gets migraine? Well, statistically, migraine is the biggest problem for people between the ages of, say, 20 and 40.

**Dr. Cowan** (13:16): So the bias is, "Well, we're going to eliminate from our study people who are not in that demographic because they may skew our data." So we say, "OK, we're going to do our study on this new drug. And we're only going to look at people over the age of 18 because it's less complicated and you don't have to get parental approval to be in the study. And we'll put a cutoff at 65 or 60." In recent years, I will confess, they have gotten better.

**Dr. Cowan** (13:53): They sometimes will include patients up to the age of 70. However, those numbers of people who are in the study and are 70 are so small that when they report the average age in the study, it's going to be around 40. So you can't really stratify that data and say, "Oh, look, we had poor outcomes in this population, this subpopulation, compared with that subpopulation."

**Lisa Horwitz** (14:23): So, there's not a lot of specific data for patients 65, 70, 75, and up. Does that mean doctors shouldn't automatically rule out treatments based on age because we just don't really have enough data?

**Dr. Cowan** (14:38): If we ruled out treatments using FDA [U.S. Food and Drug Administration] approval, we wouldn't have any treatments for migraine in people over the age of 60, 65. Virtually all of the drugs, and it's not 100%, and it's getting a little better, but the data is not strong because there are so few people in these studies. But, increasingly, they're including patients who are over 18 but less than 70, for example.

**Dr. Cowan** (15:09): But the number of people who are between, say, 60 and 70 is so small, given the recruitment pool, that you can't really draw conclusions. So nothing's going to stand out unless you have enough power in your study to stratify and say, "Here's the response to medication A among 20- to 40-year-olds, 40- to 60-year-olds, 60- to 80-year-olds," or whatever the numbers should be. So that's why we don't have the data in clinical trials.

**Dr. Cowan** (15:42): And when the FDA reviews it, they are very careful to say, "This drug is now approved for people between the ages of 18 and 65," or however the study was designed. And increasingly, you'll see, after they've gotten approval for their large population, they'll say, "Now approved for people 13 to 18 years old."

**Lisa Horwitz** (16:07): Does that tie the hands of our physicians from effectively treating attacks as we age?

**Dr. Cowan** (16:15): It's very specific, I think, for most headache specialists. It's not a big issue because we see so many patients and our educational background is so migraine- and headache-specific, that we cheat. I don't know how else — I mean, I've been giving Botox to patients since the early '90s. It was only approved for migraine in 2010, 2011. So I think it depends on the physician. If you're very litigation-averse, you are on risky ground.

**Dr. Cowan** (16:54): If you give a medication to a person and they have a stroke, and then it turns out that person was outside the parameters for that drug to be approved, you're liable.



**Lisa Horwitz (17:06):** Yeah. Are there any common medications that do become unsafe as you age, that you would say, "These are off the shelf"? Because I feel like I've often heard triptans are a no-go once you reach a certain age. I'm hoping that's not true because I love my triptan. I couldn't function currently without it.

**Dr. Cowan (17:27):** Well, I'm guessing I'm about twice your age, and I love my triptan, too. So, "no" is the short answer. We should be basing our decision-making for patients specifically on that patient.

**Lisa Horwitz (17:43):** So it's more, not necessarily, "You hit this age; it's no longer safe." It should be, "You have a heart condition, you have a blood condition, or some other condition that contraindicates this medicine."

**Dr. Cowan (17:55):** Exactly. Now, that being said, there are changes in humans as we age. I mean, I don't think that's any secret. There is not the data to support that a healthy 75-year-old who doesn't have diabetes, who doesn't have a heart condition, whose thyroid is perfectly fine, shouldn't be able to take a triptan. But there are regulatory restrictions, and it's a lot easier to just say, "75, I'm not taking that chance." But the science does not support that.

**Lisa Horwitz (18:32):** Outside of the realm of triptans, are there any preventatives that are more risky for people as they age?

**Dr. Cowan (18:41):** Again, not based on aging.

**Lisa Horwitz (18:44):** OK.

**Dr. Cowan (18:45):** [They] were based on comorbid conditions, other medical conditions, based on other medications they might be taking. I mean, if, for example, I have a patient where I'm considering a local treatment, something like Botox or an occipital nerve block, versus a medication that has a list of side effects as long as my arm, and I think that they each have a more or less equal chance of helping the patient, I'm going to go for the local effect.

**Dr. Cowan (19:18):** If I have a medication ... take a monoclonal antibody. So monoclonal antibodies for CGRP [calcitonin gene-related peptide], they've been out, what, now five, seven years, maybe. We still don't know what the long-term effects of blocking CGRP are. If you remember Vioxx, which was a great anti-inflammatory — I used it like candy whenever my migraines were bad while I was in school.

**Dr. Cowan (19:49):** It was pulled off the market after about — I don't know how many years, but decades, I think — because it had cardiovascular risk factors. Now, I don't know when Merck became aware of that, but when it was finally pulled from the market, 100 million prescriptions had been written. So are monoclonal antibodies safe for people with risk factors for stroke, or MI [myocardial infarction]? Don't know. Who's going to be in that study? Who's going to be in the arm of that study that we're going to induce a stroke and see if they recover as quickly as someone in the control group? So we just don't know.

**Dr. Cowan (20:41):** And for someone like me, for example, if I see similar data for something like Botox, which has been around for 20, 30 years for other indications, and a monoclonal antibody where there's at least a theoretical risk for it having a long-term side effect for someone who unexpectedly has a stroke, and they've got an antibody that stays in the body for 42 days —



that's the half-life of the longest monoclonal antibody — why on earth would I go to the monoclonal antibody before I go to Botox?

**Dr. Cowan** (21:24): Why doesn't that same reasoning apply to a 75-year-old? Because statistically, if you look at all 75-year-olds, they are at a greater risk for stroke than all 40-year-olds. Well, if I'm the 40-year-old with the stroke, that will not resonate well with me.

**Lisa Horwitz** (21:45): No, it would not resonate well with me at this point. But I might be more willing to accept that risk at a different age, in a different decade.

**Dr. Cowan** (21:53): And that's a really important point. You as a 75-year-old should have that same agency to make that call. Our job as physicians is to educate the patient well enough to make an informed decision. The days of the paternalistic doctor should be over; it shouldn't be me saying, "I've decided this is the best medicine for you. Here's my thinking; here are your options. What do you think?"

**Lisa Horwitz** (22:21): I feel like I have that relationship with my doctors. But when I speak to my older relatives and I hear them talk about their visits, it doesn't seem like they feel they have the same freedom to be a collaborator in your care. How can someone who has always viewed the doctor as the end-all, be-all, you listen to them — how can they learn to question and become a partner in managing care at age 60, 70 — something they've never done before?

**Dr. Cowan** (22:56): How do you teach them to use a cell phone? How do you manage your TikTok account at 75 or 80? You have to educate, and that is on the patient and the physician. That's another shared responsibility.

**Lisa Horwitz** (23:09): I mean, even just us saying it right now, saying you can be a partner in your care. And, you know, if you can question your doctor, I think questioning is always a good place to start. If you're curious about why they're prescribing something or why they're not prescribing something, just ask.

**Dr. Cowan** (23:28): Amen. I mean, I agree.

**Lisa Horwitz** (23:32): So, as we age, I know that our body metabolizes things differently. Can that make current treatments — let's say I'm successfully treating my migraines for 20 years, all of a sudden the same meds are not working. Can it be because I metabolize things differently? Is it just the nature of migraines are always changing?

**Dr. Cowan** (23:55): All of the above. And that's what you have to sort out. Did you just start another medication that's metabolized by the same CYP3A system in the liver, and now they're competing for metabolizing, and that's why the medicine's not working? Maybe. That's something — that's very tricky, specialized stuff. It's something that you need to work with your physician with. But, you can ask the question. And so you think, what else is different? “Well, nothing really.”

**Dr. Cowan** (24:25): “Well, yeah, my cat died, and I'm on an antidepressant now.” Or, “Well, I did break my hip, so I'm not hitting the tennis ball anymore in the mornings.” So yeah, a lot of things go into changing metabolism. I think medications are certainly the most common. Does our metabolism slow? Well, yeah, but not so much when you're a marathoner at 70 as when you're a couch potato at 70. So, you look at exercise, you look at other reasons for change. I don't



think — again, age has never been demonstrated to be a reliable indicator for an individual decision.

**Lisa Horwitz (25:18):** That is really the recurring theme, and what I'm learning out of this interview is that you should be able to access a multitude of treatments at any age, and that your age does not exclude you from things. Other comorbidities can exclude you from treatments, but it's not just because of the number.

**Dr. Cowan (25:36):** That's exactly right. That's exactly right. Now, we can do the studies, but they haven't been done yet. That paternalistic view that I've given you is, “Well, I've been doing this for 40 years and I can tell you that old people just don't do well with opioids.” And that's true, but neither do the young people. It's an individual decision. I see patients who are in their late 40s and my own bias is, “This person's got one foot in the grave.”

**Dr. Cowan (26:05):** I've also seen 80-year-olds and 90-year-olds that I just look at in amazement for all they've done and all they're still doing. So, we all have our biases. It's our job as physicians, and as patient advocates, to make sure we're aware and we acknowledge them, and we don't give in to them.

**Lisa Horwitz (26:26):**

Yeah, it's hard. Being a human, [it] is hard to sometimes acknowledge your bias, because that's step one and that's often the hardest part; and then to actually move forward in a constructive way. We had many viewers write in with questions — aging viewers — and I don't know if they're going to be happy with this interview because we basically said, “It's the same; your options aren't limited.”

**Lisa Horwitz (27:00):** What are some things that people with chronic daily migraine and headache, as they age, are there any specific meds for them? Are there treatments that work better, or is it just — you've got to follow what works for everyone? Everyone wants to believe they're special; we all want to believe, “I'm a female of this age so this magic thing will work better for me.” “I have a vestibular migraine; this specific thing will work better for me.” “I'm this age.” But is it really just we're all on the same spectrum?

**Dr. Cowan (27:36):** No. I think people who say that are exactly right, and you have to be your own advocate for that. There is no one-size-fits-all. I cannot say, “If you're 70, this is the right medicine for you.” I can, however, say, “If you're 70, and you've got these three comorbidities, and you're on these medicines, then I would recommend this medicine, and here's why.” But I can't say it just based on age.

**Lisa Horwitz (28:07):** For patients who've had stroke, or heart attack, or heart disease, are there specific medicines that work better for them, that are safer?

**Dr. Cowan (28:17):** Yeah, yeah. For example, we've mentioned the triptans a couple of times. There is another class in the same family called the ditans. Lasmiditan is the one that's been approved, and it works at a different set of serotonin receptors that doesn't have as much effect on the 1B, the blood-vessel-constricting serotonin receptor, and is safer for people who do have a cardiac history. *Note: Eli Lilly discontinued manufacturing lasmiditan (Reyvow) in late 2025. U.S. availability is expected through June 2026, or while supplies last.*



**Dr. Cowan (28:52):** CGRP antagonists do not seem to have a cardiovascular risk. Again, they're newer. We don't have a huge data set — yet — but those seem to be a better choice for someone than say maybe something like DHE [dihydroergotamine], which has a very powerful blood-constricting action. But again, it's not because they're old. It's because they have cardiovascular risk factors.

**Lisa Horwitz (29:23):** And it's like I love hearing that, but I also hate hearing that, because I wish migraine was more straightforward.

**Dr. Cowan (29:30):** It's a disease to be managed. And there's nothing wrong with that, because it can be managed well nowadays. You just have to have a partner and support that are willing to work with you to get you to the best management possible.

**Lisa Horwitz (29:49):** Do you often see patients presenting for the first time with headache or migraine in their 60s or 70s?

**Dr. Cowan (29:59):** Yeah, so there's about a 16% prevalence. It's 18% in the lower age groups. So it's not a huge number. But when I see someone in any age group with their first headache, they get the same workup from me. And it goes wherever it goes. There are certain conditions that are — obviously stroke is more frequently seen in someone who's older. So you want to look at those risk factors. But boy, you don't want to miss a stroke in a young person either. There are vasculitides, giant cell arteritis, more common in older people.

**Dr. Cowan (30:34):** So you want to get the appropriate blood work there. But you sure don't want to miss lupus or something else that can cause headache in a younger person. So I would still maintain, you take your history, you go down the road where you see something, and you rule it out or you rule it in. And then you make your diagnosis, your differential, you do your workup, and you make your treatment plan.

**Lisa Horwitz (30:59):** What can migraine patients in their 30s, 40s, 50s do now, to prepare for aging with migraine?

**Dr. Cowan (31:07):** The brain likes routine. The brain doesn't like surprises. And that's the system, that kind of runs funky in migraine. We need sensory input so we can interact with the environment. And what's supposed to happen is the cortex — the higher part of the brain, the thinking part of the brain — is supposed to interpret that sensory input and say, “not a train coming at you, just a bright light.” “You're just running around. It's not because there's a bear chasing you.”

**Dr. Cowan (31:46):** If your threshold is lower, then you're more sensitive to that skipped meal because your brain says, “Oh, maybe there's a bear chasing you.” If your threshold is higher ... there are people who don't experience pain. There's a condition called congenital insensitivity to pain with anhidrosis. You don't hear about it because those kids die young. They injure themselves and they don't know it, and they end up dying from it. So it's a very rare condition.

**Dr. Cowan (32:15):** So, anything you can do to reassure your brain that everything's OK: regular sleep, particularly wake time; regular exercise, not when it's unexpected, like not just before bed; eating your meals on a schedule so that your brain doesn't think you're skipping a meal because you're being chased by a bear.



**Dr. Cowan (32:36):** Those kinds of routine behaviors, in your 30s and 40s, if you can get into those habits — exercise regularly, aerobically, around the same time each day, and carry that into your 70s and 80s. Eat your meals on a schedule — whether it's two meals a day or five little meals a day — continue that behavior. When you retire, don't suddenly decide it's OK to sleep whenever you want.

**Dr. Cowan (33:10):** If you're going to get up, if you want to sleep till 8, be consistent in sleeping till 8. Don't get into this head trip that, “I'm not working today, I can sleep till noon,” because your brain thinks there's something wrong. You must be sick. So, whatever your routine is, stick to it. That's probably the best advice I can give someone in their 30s who wants to maintain good headache health on into their dotage.

**Lisa Horwitz (33:44):** And what gives you hope? I know we've talked about a lot of nonhopeful things, but what does give you hope, when treating older patients?

**Dr. Cowan (33:52):** A little humble brag for my generation: I think we're a little bit more outspoken. We children of the '60s are less sold on that notion that doctors are gods. I think we're generally better advocates — becoming better advocates — than perhaps our parents and our grandparents.

**Dr. Cowan (34:15):** Well, things like Migraine [World] Summit. I mean, this is incredible to empower — and I hate that word, but it's a cool word to use. That we're empowering a whole population to be better educated, to speak up for themselves, to demand that clinical trials include people like them. As we embrace technology, and we know that we can actually come to our physicians with data: “Look at my app. You put me on this medication. I've been taking it. My migraine frequency has changed. It's gone down, and that's good, but my severity is still high. Can we focus on my severity?”

**Lisa Horwitz (34:51):** Are there any resources you'd like to recommend, or offer to our audience?

**Dr. Cowan (34:58):** I think there needs to be a book. There need to be more things like what we're doing here and now. I think there should be talks like this at major meetings. There aren't. There are some people out here, Deb Friedman, Annika Ehrlich, Nina Riggins. There are people who are paying attention to headache and migraine in the elderly, and that's a good thing.

**Lisa Horwitz (35:27):** I think a recurring theme is that age is a number, and it should not limit your access to care. Rather, your health, your comorbidities, your history, and lifestyle can limit your access to medications, but not your age; and that you really need to find a way to advocate for yourself and find creative treatments and protocols when the data is not there to support a certain treatment.

**Dr. Cowan (35:59):** The only thing I would add is that these things need to be discussed, that it's fine for doctors to give advice, to make recommendations. It's fine for patients to ask questions and toss out options. And there's a big difference between compliance and adherence. Compliance is what the decision is as you leave the doctor's office. Adherence is sticking to the plan, and you need to make sure that the physician and the patient are both on board to see good adherence.



**Lisa Horwitz (36:35):** Thank you so much for your time today, Dr. Cowan. This was a really interesting conversation, and it went places I never expected, so I appreciate your time and your insight.

**Dr. Cowan (36:59):** Lisa, you nailed it. This was a really good interview.