TRANSCRIPT 1012

Learning Pain and how to Retrain My Brain

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[00:00:00] Hi, I'm really happy to be here with y'all today. I'm not a medical practitioner. I'm going to share **my pain science journey**. And, I'm an educator. So I'm going to talk about things that connect between what I learned, what I do in education and what I learned from Alan Gordon's book, *The Way Out.*

[00:00:26] Okay. Here we go. So today my talk is going to share some of my pain journey with, back pain and neck pain interwoven with what I've learned from Gordon's book, ***The Way Out***. It's a recently published book and of all the pain science books that I've read, because, um, I have a father who keeps lending me pain science books, this is the one that resonated with, with me the most strong and, and I think had the biggest impact of my pain science journey. So I've chosen to talk about it tonight. In my talk, **neuroplasticity** is going to be a key concept. I'm going to talk about it from an education point of view and from a pain self-care point of view.

[00:01:10] Um, I'm going to talk very briefly about two published scientific studies. I haven't read them, but they're referred to in the book, *The Way Out,* by Alan Gordon. And he has 30 pages of notes so, let me just first start by talking about myself. **I'm an educator**, I'm a freelance writer. I'm a wife, mother, sister, daughter.

[00:01:37] I raised four kids between Corvallis and Bangalore India, and all my life in all the experiences I've had, I've been learning. I love learning, and along the way, I believe that my brain also learned. My **brain learned pain:** neck pain, back pain. And, it's been part of my life for a long time. As far as I can remember, I think it started when I moved overseas. So, uh, that's part of my journey.

[00:02:14] Neuroplasticity is really important to me as an educator, I teach college success skills, and it's very important for students to understand that just because they don't know something that the student next to them knows doesn't mean they can't learn. It doesn't mean they're stupid. It just means they haven't had a chance to **build those networks in their brain** yet. Our brains grow and change, and understanding neuroplasticity helps students be confident to try things they don't already know how to do. I teach my students the brain is like a muscle. Neural pathways that are used--just like muscles--become stronger.

[00:02:54] And, for learners ,the bad side of that is that neural pathways that are not used become weaker. So in education, we call that the **forgetting curve** and we teach students why they need to review material, practice skills again and again and again, so that they keep those neural pathways strong. This is probably why, like, if you haven't used algebra since school, you probably would have trouble constructing an algebra equation today because **neural pathways that aren't used** become weaker with time.

[00:03:31] So when my dad lent me this book about neuroplastic pain, I was really excited to discover that he was talking about neuroplasticity. It's a **new book** published in **2021**. And, his basic premise is that persistent pain is **pain that has gotten stuck**. Because your brain has learned it too well. Um, the full

title, look at that title, *The Way Out: A Revolutionary, Scientifically Proven Approach to Healing Chronic Pain.* Doesn't that just kind of sound a little bit over the top? I think, “Whoa, really? That's a tall order!” Well, this book is very convincing to me. It's chock full of anecdotes, stories, case studies, and references to scientific studies. And like I said before, there's 30 pages of notes in the back of this book. But it's an **extremely readable**, extremely practical book for somebody who's not medically trained to learn about how to approach pain, how to retrain the brain in chronic pain.

[00:04:51] I read this book in a **time of stress**, and it just seemed to me that the anxiety that I was feeling might also respond to the pain retraining that I could maybe pick up some of the things that were in the book and reduce my anxiety and be more comfortable.

[00:05:11] I wasn't even really thinking about my **back pain**. Although at that time, my back pain was higher than it had been before I got into that situation of anxiety. So I found some of the strategies in this book and I applied them just thinking about my **anxiety** and lo and behold, not only did it lower my anxiety, but it also lowered my back pain.

[00:05:35] That was a nice benefit. Okay. So one of the things that's really, um, central through this book is the **Boulder Back Pain Study.** This is a screenshot I grabbed off the University of Colorado Boulder website. Alan Gordon helped design and run the Boulder Back Pain Study, which I'm not really clear on when it happened, but it was published in 2021, September, 2021.

[00:06:04] So, 151 participants who all had chronic back pain that they, they rated at four or above for at least six months, you know, four on that pain of scale of zero to 10. So 151 participants of which 50 received this **pain reprocessing therapy** that Gordon talks about in his book. I will put the link to this study in the chat after I'm done talking, because I can't do two things at one time.

[00:06:40] So when I read about this in the book, I read about that they did pain reprocessing therapy. They did **functional MRI scans** before and after the treatment. And throughout the treatment they were surveying the patients as far as their level of pain. And look at these results: **98%** of the participants improved and **66%** of the participants were pain-free or nearly pain free at the end of the study, which some of the designers of the study didn't believe was possible.

[00:07:13] So I was like, “Wow! those are kind of **cool results**.” This kind of stuff really got me interested.

[00:07:24] So Gordon also cites another study. This study was published in the journal *Brain*, and I gotta read this title to you because it just cracks me up. I love language, so I can't help myself, ***Shape Shifting Pain****: Chronification of Back Pain Shifts Pain Representation from Nociceptive to Emotional Circuits*. How's that for a title? Shape, Shifting Pain. I love that. So, in this study--which Gordon calls the most important recent study on pain--they studied people who had recently injured their backs over about a year, and they did brain imaging, and they measured their levels of pain. And what they discovered was for those people whose pain didn't get better, it actually shifted to another part of the brain from where it was originally when it was a pain experience because they had an injury. **When it became chronic**, after the injury healed**,** they continued to experience pain. It actually shifted. Their brain was working in a different place that just blew me away.

[00:08:34] So Gordon says that neuroplastic pain is caused by the brain **misinterpreting safe signals** from the body as if they were dangerous. You know, he uses lots of examples. And one of them is like, if you, if you're out hiking and you sprain your ankle, you have pain. This is good. This is **protective**. You do not want to keep walking and worsen your injury. The brain is doing what it's supposed to do, telling us, “Stop! Don't! Hurt! Now! Danger!” The trouble is sometimes the brain misinterprets sensations that we have in our body. Sometimes the brain becomes **hyper alert** to danger and, Gordon says that's neuroplastic pain, a **mistake of the brain.**

[00:09:21] Not that it's not real pain. It's real! The experience is certainly **real,** but the **cause of it is different** from when you sprained your ankle six months ago. Yeah.

[00:09:34] So for me, when I **moved abroad**, I got this back pain. And I think I might have strained my back, packing and moving things. Yeah. I might have done that. Um, but this pain came and it went and it came and it went, uh, and I'll tell you that when I moved abroad in that one month, I moved across the world with three preschoolers and my husband. My grandmother passed away. I lost a baby all in a space of one month. And then I got back pain. Oh, Hmm. And I thought it was from moving boxes and you know, all that stuff.

[00:10:24] I, through the years that I lived in, uh, in India, I continued on back pain off and on neck pain, off and on. Uh, I **associated it with** things like sitting in the wrong chair, standing for too long, going, for a drive on a bumpy road, using my laptop with bad posture or even playing candy crush for too long.

[00:10:52] But definitely **my brain learned pain** over that time. There wasn't any specific injury that caused those kinds of pains for me, but they were serious enough that. By the end of my time in India, I was wearing a neck brace when I went in the car for any distance, because I was trying to prevent the neck pain.

[00:11:15] I'll just say that too. When my daughter took up **violin**, I wanted to also take up the violin again. And I found that I was not able to do that without having a lot of neck pain. So I just couldn't. So I believed that my pain was caused by bad posture. I blamed chairs, beds, pillows, bumpy roads, and it's **really hard to believe** that pain that we have isn't caused by something that's wrong in the body. We're so attached to that idea.

[00:11:51] So Gordon and his co-author, Ziv, in their book *The Way Out*, they recommend that we just start to look for evidence in our own experience, that the pain that we're feeling, the chronic pain that we're feeling, the persistent pain (after we've seen a doctor and we don't have a specific

diagnosis for it) probably, **look for evidence** that our pain experience may be neuroplastic.

[00:12:20] So I started looking for evidence. **Is this neuroplastic pain**? I'm going to go through some of the characteristics that Gordon lists for neuroplastic pain in his book: originated at a time of stress. Well, mine did. Common personality traits. Yep. Check all those boxes. How about delayed pain? For me, most of my **pain was delayed**. It wouldn't be that it hurt when I was doing the thing; I would hurt later. I'd wake up in the morning and my back would hurt. I'd wake up in the morning and my neck would hurt. And I'd say, "I sat wrong. I slept wrong. I shouldn't have tried to play the violin." **Symptoms triggered by stress**. I noticed that when I went on vacation, my pain almost went away. And when I came back and sat down and started working again, my pain came back.

[00:13:18] Um, it **increased in times of high anxiety** and **it moved around**. Does your pain do that? There's some more things triggers that have nothing to do with your body, large number of symptoms for a lot of people childhood adversity is an aspect of it. I related to this one **lack of physical diagnosis.**

[00:13:42] I went to a physical therapist when I came back to the States and my physical therapist assured me that **there was no injury**, but still I had pain. So, this book, Gordon's book, *The Way Out,* is very deep and rich. And I'm unable to do justice to all of the content of this book, but I'm going to focus on the part that I found the most practical, which is the nine techniques that Gordon recommends for **helping your brain feel safe**. And I'm going to go through them all.

[00:14:21] I'm going to go through them all a few at a time. So making **evidence sheets,** looking for evidence that the pain may be neuroplastic and writing it down. I sat on the futon and the next day, my back hurt. So for a long time, I didn't sit on the futon. And then after I started reading Gordon's book, I sat on the futon again, and I felt no pain afterward.

[00:14:45] I wrote, that's a piece of evidence. He recommends to practice **somatic tracking,** not when your pain is severe, but when it's mild to moderate. Somatic tracking sounds a lot like mindfulness to me, paying attention on purpose in the present moment, nonjudgmentally. Just noticing the pain, not pushing against it, not, but just observing it in a neutral way.

[00:15:17] And sending a **message of safety** to your brain and he, and some people like to make jokes. Some people give their pain a silly name, or compare it to a silly animal. Lightness and jokes helps the brain feel safe and not danger. **Avoidance behaviors** are really useful when your pain level is high. It's fine to be comfortable. Sit in the good chair, get up and walk, take a hot shower, whatever it is that helps you feel safe and comforts you. Sending messages of safety**.** I think this is like super, super important. Sending yourself messages of safety. When I feel a twinge along my spine, I send myself messages of safety instead of going into like, "How long is this pain going to last? How bad is it going to get? Is it gonna impact what I can do tomorrow?" "My body is fine. My brain thinks I'm in danger, but it's **just a false alarm**." Send myself some messages of safety. It's quite helpful, quite helpful.

[00:16:33] Oh, this one was a biggie: **reducing over stimulation.** I didn't realize the role that my cell phone was playing in my life. I really didn't. I thought it was just the kids that are on the cell phone all the time, but I'll tell you, I use my cell phone for work. I have my work email on my cell phone. I've got my Slack on my cell phone. I've got all the social media on my cell phone and you know, I have to market my freelance business. So that's work too. One of the things he talks about is, is how people be like rush, rush, rush, hurry, hurry, hurry. And these **habits of urgency** that we have, and these things like checking your work messages before you get out of bed in the morning.

[00:17:20] Wait a second. I don't do things like that. Do I? I noticed. I started noticing. I started **paying attention,** and I started putting my cell phone back in the place where it serves me instead of me serving it. Yeah, there's lots of ways to reduce over stimulation. A big one for me is not looking at the work messages until I'm in my work time. Not doing social media from morning till

night. Just let it have its own space in the day. That's enough. Hiding self view in zoom. That one really helps me reduce over stimulation when I'm working from home.

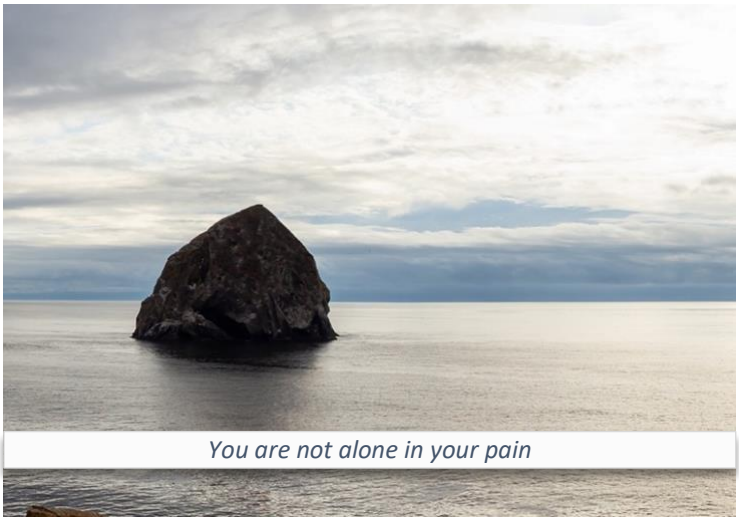
[00:18:06] Another one: **avoiding feeling trapped**. So feeling trapped can help your brain feel like it's in danger. So planning ahead to not feel trapped can help your brain feel safe. **Handling uncertainty,** "Either way. I'm gonna be okay." **Catching your fears**. This one's been really helpful to me, even when I was preparing this talk, I'd start to get, "What if I...? What if I..." "Gonna be okay. I'm doing what I need to do, and I'm gonna be okay."

[00:18:36] And last but not least, **embracing positive sensations.** Sometimes we focus so much on pain and we forget about feeling good. And the good feeling neural pathways get weaker. We need to strengthen them. So just take time to pay attention to the things that feel good in your life. And that will be strengthening the good feeling pathways instead of strengthening the pain pathways.

[00:19:03] So do you **want to retrain your brain?** I encourage you to check out this book. For me it's been a real excellent, helpful to understand how pain science works and how my body works. Thank you.

About Pain Science Life Stories

Formed in 2018, the Oregon Pain Science Alliance (the Alliance) is an all-volunteer nonprofit 501(c)3 corporation. Our members come from the health care community, their patients, and others who follow pain science research. We seek to share current information on how pain experiences are formed in the brain and influenced by biological, psychological, and/or social factors, along with practices we have found helpful and consistent with pain science concepts.



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The archive is not exclusive to stories we produce, so if you know of, or have a pain science life story, please use the contacts below to collaborate with us.

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