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'Pain Neuroscience—Integration into Clinical Practice'

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Tyler Park

PT, DPT, Samaritan Rebound Physical Therapy

Albany, OR USA

[00:00:00] Well, thanks for having me, everybody. It's nice to be around like-minded people and kind of **sharing our stories** and learning from everybody. Let me pull up my PowerPoint here. So when initially was approached to talk, I was excited to share my story but then also thought I don't want to be redundant and repeat what has been repeated before. Because I know a lot of this has been talked about by people, more expert than me in the field of pain neuroscience and its application.

[00:00:49] But, at that time, there had been a question I had been kind of pondering myself about **why this practice hasn't been accepted as widely into healthcare**. This knowledge about pain science isn't brand new, and I hadn't seen that it had really changed healthcare practice. So I, in thinking about my story, thought about how this information had been presented to me in ways that were helpful and ways that weren't helpful, and how I think as healthcare providers, we could message this to other healthcare providers. And I think from a patient standpoint, this is very applicable, too, because patients that have come to understand pain in a more complex and nuanced way, I think can become excited, and passionate, and very knowledgeable about it. And sometimes I think we try to pass that information along to other providers, friends, family, things like that, in a way that isn't subtle and in a way can be such a drastic shift to their understanding that it almost causes them to recoil in the other direction.

[00:01:53] At the time of this, too, I had a doctoral student who was working with me, and she was very surprised at how I practiced because it was vastly different than anything she'd ever seen or anything that they had learned in PT school. And, you know, we had one moment early on in the experience where I kind of sat down, and I just dumped pain neuroscience on her. And I think she left the room with her head kind of spinning, thinking, "This guy's kind of crazy. This is kind of nonsense. And this is nothing that I learned in school." And so from that, I kind of had to step back myself, you know, and had been almost evangelizing this to her because I feel like, you know, we've had this awakening and **needed to approach it with a little bit more subtlety.**

[00:02:32] And so anyway, in coming up with this, I didn't want to be too redundant and just repeat some of the concepts that had been repeated before. But I think this may be helpful in thinking about **how we can change beliefs of providers**, and how we can ultimately have providers speaking to patients about pain in a different, and hopefully a little bit more helpful way.

About Me

[00:02:51] A little bit about me. I grew up on the Oregon Coast in Bandon. I went to Oregon State University for my undergraduate and **studied exercise physiology**. I'd always been interested in healthcare and wanted to be somewhere in the medical field. Unlike a lot of people that end up in physical therapy, I've actually never been a patient of a physical therapy clinic in my life. But I was always fascinated by anatomy and biomechanics and the capacity of the body to heal itself. And so I was pretty naturally drawn to the profession.

[00:03:24] I did do some observation in my high school education in a physical therapy clinic, and I really appreciated the **length of the sessions** that therapists had, working with patients. And that seemed **a bit unique in healthcare**. And so that was another thing that kind of drew me to that profession. So throughout my undergraduate education, I had the goal of becoming a physical therapist and going to a graduate program.

[00:03:46] I ultimately decided to go to school at Eastern Washington University. I liked a lot of things about the program. I, at the time, was highly **interested in orthopedics**, and they had a pretty strong orthopedic background in their teaching. And they had some clinicians that were pretty well versed in **manual therapy**, which was something I was really interested in at the time as well. So that played a role in why I ended up there. And now as Rolly mentioned, **I work at an outpatient orthopedic clinic** within Samaritan called Rebound Physical Therapy in North Albany.

My Journey With Pain Neuroscience

[00:04:19] Going through my story, I, a couple days ago spoke with Rolly, when we were kind of getting this all set up and I don't know that I had ever rewinded in time enough myself to truly appreciate **what I thought pain was**. And so in the last couple days, I had gone back and edited these slides a little bit and kind of tried to break it down to when I was a kid before any formal education and biology, and anatomy, and physiology, what did I think pain was? And at that time I truly, one, I don't know that I had ever thought about pain. **Pain just seemed to be part of the human condition**, right? As a kid, you fall down and you bleed, and it hurts. So pain was just pain.

[00:05:01] But if I had to think about it, I, at that time would've thought that pain was **something that lived in our tissues**, right? That it was a quality of our body. I don't think that I had had probably a recognition of the influence of the nervous system in any capacity. If you banged your knee, **the knee hurt because pain lived in your knee**. So it was kind of interesting to go back and think about that understanding of pain prior to having any sort of education about the anatomy, biomechanics, neurology, all of that stuff.

[00:05:33] So ultimately I went to undergraduate at Oregon State University. So that's when I was kind of introduced to human anatomy and physiology. I started to develop a bit of an understanding about the peripheral nervous system and the central nervous system, and how we had **different sensory receptors** that transmitted signals.

[00:05:54] Though I don't recall at any point in my undergraduate training, even though I was specifically in a kind of pre-physical therapy track, I don't know that we ever talked about pain, specifically, aside from maybe noting the differences between different sensory receptors in our body. And we certainly talked about **nociceptors**, which to me were pain receptors. But beyond that, I don't think that we really specifically talked a whole lot about pain. So I would say in my undergraduate education, I still had an **understanding that pain was kind of a one-way signal**, but that the nervous system did play kind of a role in that.

[00:06:28] My **physical therapy school** was largely kind of trained under **a biomedical model**. So again, at that time, similar to undergrad, I had a understanding throughout my education that **pain was something that was arising from an injured or a damaged tissue.** Again, we talked a lot about a nociceptive fiber or what we would call pain receptors at the time. Through of modalities class, we were introduced to the **gate theory of pain**, which is a understanding of pain that's quite ancient at this point, but still has a fairly firm grasp, I think in how we train medical professionals, particularly within physical therapy.

[00:07:05] Essentially the gate theory of pain and pain management is that we have these kind of small diameter, nociceptive pain fibers that send a signal up to our spinal cord. A way that we can block pain or **essentially shut the gate**, is to heavily activate these larger myelinated large diameter fibers that are sensory receptors.

[00:07:27] And so that was kind of the baseline understanding of how we talked about pain and pain management. If we can adequately **stimulate these large fiber sensory receptors**, then essentially we can **partially shut that gate to the pain** receptors at the level of the spinal cord and block that signal from being transmitted up to the brain.

[00:07:46] And so that was kind of the theory and the understanding behind the use of inferential current and different types of electrical stimulation. Even the application of heat and different kind of topical modalities, biofreeze and things like that, was we **overwhelm the skin with this robust sensory stimulus**. That will essentially flood the spinal cord, which **will block the input of pain**. So again, it was very much a one-way signal from the tissue up, and that was really the only level at which we had control of managing or blocking pain.

[00:08:20] It was very much assumed, at least by me, and I would suspect most people in my program, that **pain equaled damage**. I had never even challenged that idea. I didn't think about the idea of having pain in the setting of no damage or conversely having no pain in the setting of significant damage. I didn't, in my training in physical therapy school, have any psychosocial training or education. So we had very little understanding of psychology or its influence on pain or the human condition. To the degree that we maybe talked a little bit about psychology was more in the realm of **sport psychology, and motivation**, and things like that. But was largely left pain out of that discussion. Again, I didn't have any pain neuroscience education, so **my understanding of pain** was purely **bioanatomical**, and I was well-versed in the different tracks in our spinal cord, all the different receptors, fibers, things like that. But didn't have a understanding of the pain neuroscience behind that.

[00:09:22] And certainly **we didn't talk**, and I hope this has changed now, but **about trauma and ACEs**, or the adverse childhood events, and how early childhood can affect our neurobiology and psychology and certainly our pain response later in our life in my clinical training.

[00:09:40] So as part of physical therapy school, we have clinical rotations or internships. I was **introduced in my very first rotation to *Explain Pain*,** pretty well known book, by Butler and Mosley. At that time, because I was so heavily focused on orthopedics and manual therapy and was still working largely under that biomedical model, I **largely**

wrote off that understanding. It didn't resonate with me and any of the experiences or training I'd had at that time. And so it just didn't really stick.

[00:10:07] The remainder of my clinical rotations, somewhat by my choosing, were highly biomedical, and they had a pretty heavy focus on orthopedics and particularly **a focus on manual therapy**. So utilizing largely my hands to try to make people better. So muscle energy techniques, and joint mobilizations, and spinal manipulation, soft tissue mobilization, all of those fairly passive interventions.

[00:10:33] Kind of moving forward to the start of my clinical practice. Again, just coming out of my schooling and my clinical education. I, in the clinic had a pretty heavy focus on manual therapy. I kind of, at the time **thought that I had magic hands** that could fix anyone with the perfect manipulation or just the right amount of pressure on a trigger point. I certainly still had that understanding that**pain was something that was arising from the tissue level.**

[00:10:58] And so my applications at that time were derived solely at, at the tissue level, whether that be exercise, manual interventions, et cetera. With my patients, **I utilized very medical language**, talking about tissues and anatomy. And in a way, I think at that point in my career, I almost did it because I was so new. I wanted to show people I knew what I was talking about, and it would've felt somewhat elementary to me to use much more basic language. So at the time, it was very much about the tissues and what I'm going to do at that specific joint level and utilize language at that time that, ultimately now I know is quite harmful, but the time was what I did.

[00:11:38] And again, at that point in my career, I still hadn't had any really formal training any of the psychosocial aspects of health in general. So **my awakening,** if you will, I would say within probably my first year of practice or within at least the first two years of practice, I certainly, as I think many providers do, **became frustrated by a lack of progress** or improvement with patients, **particularly patients dealing with chronic and persistent pain.** It was a a common theme amongst colleagues and other providers within the profession that you just have some of these patients with pain that we can't get better. And there was almost a probably an air of judgment about it and a air of blame on the patient. But I became frustrated with the fact that we weren't helping these people, and that **they were somewhat stigmatized within healthcare as a profession.**

[00:12:32] And I have always enjoyed about PT the fact that we spend so much time with patients, and we really get to connect with patients on a human level. And what I ,started to notice, that was the most profound impact that I was having with patients struggling with persistent pain, is when I just connected with them, and really met them

as a person and connected with them on a very human level. **I attempted to become very good at listening**, and again, had some pretty big breakthroughs with patients just by being a good listener, and being empathetic, and allowing them to tell their story. And over and over I would have patients that were moved by that and oftentimes brought to tears by the fact that **somebody just listened to them**. And it might have been a half an hour of them telling their story. And some of it was about pain and some of it was about the injury they were seeing me for. But I think more importantly than anything, somebody had finally listened to them and didn't try to shove them somewhere else, or give them a medication, or push an intervention on them, but they let them tell their story and just tried to approach those patients with empathy and compassion.

[00:13:39] All of this led me to want to better understand pain. And so I started to do a little bit more research. Having been exposed to it a little bit, I kind of started to realize, man, there's maybe something to this because there's a lot going on that's affecting these people's pain and **a lot of it's not happening at the tissue level.**

[00:13:57] And so I started to research a little bit more. During that time, my wife had began her graduate education in a clinical track as a social worker. And so she became my resource for the psychosocial everything. And I think up until that point in my life and my career, I was very passionate about anatomy, and biomechanics, and kinesiology, and the stuff that I could really grasp. But this whole realm of psychology in the brain, and human beings as something hard to even put in a box was just so fascinating to me. And a lot of what she was studying and learning, there was just so much carryover into some of what I was seeing in the clinic in terms of what my patients were struggling with. And so through that I kind of immersed myself a little bit in what she was learning and became much more intrigued and **curious myself about the psychology of pain** and the human condition. Through that too, I was exposed to the idea of trauma, **early childhood experience**, and how some of those could have such a profound impact on health outcomes later in life.

[00:15:07] There were several books at that time that I just devoured and I think grew a lot from, one of them being, ***The Body Keeps the Score***. That was kind of what got me into understanding trauma and becoming more trauma informed in my care. That's a book by Bessel VanDerKolk that's just incredible, talking about how trauma, particularly early childhood **trauma, can essentially live in our body** and show up in all kinds of manifestations later in life. Another book that was quite profound in how I practice was ***The Boy Who Was Raised as a Dog***, which again was written by Dr. Bruce Perry, who talked a lot about different stories of trauma and some of the later impacts that it has on people. Another author that at that time was really influential was Robert Sapolsky, who's a neurobiologist at Stanford, who has a great book about stress physiology called ***Why Zebras Don't Get Ulcers***. He has another really thick book about the title ***Behave,***

which is about just the complexities of human behavior. And then another kind of profound book was ***When The Body Says No*** by Gabor Mate, who's a author, has several books. But again, really diving into trauma and its effects on our health, and our physical bodies, not just our psychological bodies.

[00:16:18] And then certainly in the pain neuroscience realm, you know, books by David Butler and Mosley, ***Explain Pain Supercharged*** and ***Pain Neuroscience Education*** by Adriaan Louw, about how we can teach patients about pain. I think all of that together is really what was the **capstone of my change in practice** and my change in thinking about chronic pain, but just pain as a concept.

[00:16:44] Post awakening. So I had just had all that knowledge, but I still felt a bit siloed and isolated, practicing under that kind of model because it wasn't something that I was exposed to in my clinic, specifically. But healthcare in general didn't seem to be applying that approach that seemed to me like the answer. And then **I met Sharna Prasad**, brilliant, kind, compassionate, and very high achieving PT that many of you know and have been touched by. And so that kind of got me plugged into a community of providers locally here who were like-minded and understanding pain, and were taking a **more holistic approach** to just patient care in general, but certainly in management of chronic pain.

[00:17:26] She teaches **a class called MAPS in Lebanon**, and so as part of that, I attended the class and learned as much and absorbed as much from her as I could. During that, I was introduced to ACT or **Acceptance and Commitment Therapy**, which is a psychotherapeutic intervention. It's kind of the third wave of the behavioral interventions. And it really changed how I not only practice with patients struggling with pain, but also with any unpleasant sensations, thoughts, emotions, which oftentimes go along with pain. Essentially, it's a modality by which we don't try to get rid of those unwanted thoughts, emotions, sensations in our body, but we allow them to exist. We identify our values and who we want to be in the world, and then we allow those things to be there with us.

[00:18:14] So for patients struggling with pain, it was really, I think, a helpful modality for me to have because it got us over this idea of, well, when I get rid of my pain, *then* I can do all of these things. It was, **I can have pain *and* I can do all of these things**. And so it was a nice way to very quickly empower patients to take a little bit more control of their life and allow pain to be there as part of that journey. So that's something I've applied both as part of teaching the MAPS class myself, as well as just working kind of one-on-one with patients.

[00:18:44] So that kind of leads to today, **what my current practice looks like**. Vastly different from the start of my practice, which again was very biomedical, heavily manual therapy approach. I very much try to treat patients now as a whole person rather than a body part or a diagnosis, but **see them as a whole**. I've attempted to become much more psychologically informed and trauma informed in how I care for my patients.

[00:19:09] I've **tried to become fluent in** what I see as the languages, both of bioanatomy and medicine, as well as pain neuroscience, but psychology as well because they're all **different languages**. Pain neuroscience resonates with that part of my brain that's very rational and loves the deep dive into the science of it. But human brains and psychology is just a different language than that. And so I think it was important to me to not get too hung up purely on that because that can, just like talking about different tissues, we can become so wrapped up in the nuances of pain neuroscience, that I think we lose a little bit of the human element with that as well. So I tried to become as fluent as I could in the language of psychology. I've shifted, certainly. The **majority of my interventions now are active rather than passive**. So, the majority of what I do is either exercise based or functional movement based. I still do practice manual therapy in certain situations and it's something I still have a bit of a passion for. It's something I do, but I certainly use different language around that intervention, and that's something I'll talk about a little bit later in this presentation.

[00:20:17] I've very much **shifted the patient to be the center of their healthcare team**, and so I'm constantly checking in with patients and want them to be the one who's leading their care, their goals, what their expectations and hopes are out of their experience in working with me.

[00:20:32] And then again, in all of my interventions, I've **changed my language** significantly to be less biomedical in treating all pain, whether it's acute pain, chronic pain, postsurgical pain as being a kind of complex biopsychosocial phenomenon, rather than speaking specifically to the tissue. Again, we'll talk about this a teeny bit further down the slides here, but I think we need to be utilizing these interventions and this language with all patients because we, as **healthcare providers, often create chronic pain patients** by the language that we use. And so I think this doesn't only apply to working with people who've struggled with pain for years or decades, but if we can talk about pain in this language for somebody who just twisted their ankle yesterday, I think it's going to start to change their understanding and **hopefully prevent people from developing chronic pain**.

[00:21:20] And then I very much focus now on patient education and empowerment and doing as much as I can to make the patient less reliant on me as a provider, but giving them the **resources that they need to take control of their health**. So, you know, pain

neuroscience, understanding about exercise, some of the pillars of health, sleep, nutrition, mental and emotional health. And then just the benefits of general movement and activity.

Pain Science Concepts Aren't New: Why haven't they changed Healthcare?

[00:21:45] Okay, so that's a little bit about me and my journey. It was kind of fun to go through that in a little bit more detail myself, to better understand what I believed and what I believe now, and to see the pretty large delta between those beliefs and **how those beliefs have changed how I practice.**

[00:22:01] So this leads me to the meat of my presentation here. And it's the question of, you know, **pain neuroscience. Isn't new**, and pain neuroscience education as a intervention isn't that new, but it **doesn't seem to have really changed healthcare** throughout the time that I've been practicing. And just on a more global scale.

[00:22:22] So this idea about trauma and ACE scores, things like that, have been around for decades now and it doesn't seem like it's really changed how we practice healthcare. And, I think that's because **when we're talking about pain, and we're talking about somebody's belief system about pain, we're also talking about emotions, and we're talking about values.** And those are things that are pretty deeply held by patients, but also deeply held by providers within healthcare.

Pain Neuroscience--Integration into Clinical Practice

[00:22:51] So this brought me to the topic of **how do we integrate this information** into clinical practice. Again, this is **a pretty drastic paradigm shift** from the traditional biomedical model under which most clinicians, whether that be physical therapists, or physicians, or anybody within healthcare, were educated. So I think the majority of people's education was probably similar to mine in a very biomedical model. This **biopsychosocial model is vastly different**, and I think we need to recognize that. And knowing that, I think that we need to, with providers, introduce some of these concepts slowly and cautiously because again, **we're challenging the foundation of not only their just intuition about what pain is,** but essentially **their entirety of their training,** which could be, you know, decades of their life spent learning about this. And coming in with such a drastically different understanding, I think can be quite challenging to hear.

[00:23:46] I think that we do a better job of doing this with patients, right? If we have a patient who comes in with struggling with chronic pain, we don't dump a whole book's worth of pain neuroscience on them. In that first session. We just kind of start to introduce topics, right? **We ask questions**, we're curious. I think we're **really good** at

doing that **with patients,** but I **don't think we often afford that same grace** and understanding when we're talking **to our colleagues**.

[00:24:13] And, and thinking about that, I kind of recognize, I think it's probably **easier to** teach and i**ntroduce these topics to patients** because they don't have a biomedical model to fall back on. Right? They have their life experience, they have their interactions with different providers, but they don't have a vastly different biomedical model that they were trained under so it's almost harder, I think, to introduce these topics to people that have been educated in that in the past.

Changing Providers' Closely Held Beliefs: Key Tips

[00:24:39] In doing that, I started to look a little bit more into **how we change beliefs** in general. And this isn't specifically to someone's beliefs about pain, but this could be beliefs about anything that somebody kind of holds close to heart. And through doing that, there was **four really big things** that jumped out that were common amongst all of the behavior change research that I looked at. One was that **we need to listen** and rather than constantly, try to educate and preach about this, just listening to our colleagues, listening to our patients, and trying to better understand their views, **understand the reasons behind the belief systems** that they have, and really approach that with curiosity.

[00:25:24] It's important also, I think, as we're trying to change beliefs of providers to come to a conclusion on some of our shared values, right? **Providers** are doing the interventions they're doing because they **want to make patients better**. I think we all have that shared common value. And so I think connecting on that shared value of how do we, how do we help patients get better? How do we help patients who are struggling? And leaning into **that shared value** can be really important.

[00:25:53] Again, **evidence and logic are important**, but beliefs are often motivated by our emotions. And so I think it can be **really helpful** in talking with colleagues and trying to change how we practice in healthcare **to use stories** and to use anecdotes and examples that you've had. Because those play a little bit more on our emotions. And, like we talked about earlier, our **beliefs are heavily tied with our values and our emotions.**

[00:26:17] And then this is **possibly the most important** thing from what I've seen and heard from my colleagues. We **don't want to force it**. We want to respect people's boundaries and don't push too hard, too fast. Because I think often in doing that, people kind of recoil in the other direction. In doing this, I've spoken to several of **my colleagues** who I know have been to classes, who've taken courses on chronic pain, and it hasn't really changed how they practice. I asked them why, and they felt kind of across the

board like two things. One, that they were being told that **everything that they learned and knew was totally wrong** and that they were essentially being asked to completely **change how they practice overnight**. And that I think information was just too much to take in too fast. And so I think they all kind of shared the sentiment of it would be nice if this were just **presented in a way that felt less forceful.**

Cognitive Dissonance

[00:27:09] Again, in doing a little bit of research into behavior change, there was this **common theme** of what's called cognitive dissonance. So I think about this as we're just planting seeds, right? We approach them with curiosity. We ask questions. We're respectful of their beliefs. And then we tell some stories. We **talk a little bit about the complicated nature of pain**, and we kind of plant those seeds. And that leads to what's called **cognitive dissonance,** which is essentially a mental discomfort or tension that people feel when you hold **two or more conflicting beliefs or values**. So they have their old belief system. We carefully present a different belief system, and that causes a little bit of mental tension and discomfort.

Cognitive Restructuring

[00:27:52] And then the hopeful outcome of that is that they have some sort of **cognitive restructuring**. By reevaluating their beliefs, they start to adjust them to align with some of the **new information** and some of the new experiences. That is kind of an internal process, and it often involves seeking out new information, and considering alternative perspectives, and r**eflecting on the reasons** for their prior beliefs, and updating their current beliefs.

Two Big Problems

[00:28:18] So thinking about PT specifically, again, talking to some of my colleagues about, "**Why hasn't your practice changed**, even though you know about pain and you know about pain, neuroscience?" Two big things stood out.

[00:28:30] One of them was that clinicians become **defensive of their skills** and their training, and our ego kind of gets in the way, right? It doesn't feel good to go to a class or go to a conference or interact with somebody where they say, "Hey, everything that you know, everything you learned in school is wrong. The foundation of the entirety of your training is built on faulty ground. This is the truth. This is the gospel. This is what you need to do." People just recoil away, largely because I think the ego kind of gets in the way a little bit.

[00:29:02] And then the other one, I think that's particularly in an orthopedic setting that I think clinicians struggle with that I've encountered is that oftentimes pain neuroscience education is seen very much as a **educational approach** and very much a **hands-off approach,** which is quite different from the traditional framework of PT, where we're doing manual interventions, we're prescribing exercise, and we're using our hands to move people through exercise. This idea of talking and being instructors to patients, I think is something that therapists in particular struggle with.

Solution

[00:29:37] So again, my, in thinking about this kind of solution is that I think we need to be better at empowering practitioners to integrate pain neuroscience education into their current mental framework and their current interventions. Right? We don't need to tell them everything they're doing is wrong. And that you need to practice just like this. We need to say, "Hey, you're doing really good things, but can we integrate some of this information into what you're already doing?" **So it doesn't have to be *this or that*.** It can be kind of a *both and* situation.

The Power of Our Words

[00:30:12] Again, I think the most important thing, and in talking to my colleagues, I think the most important way that we can start to integrate pain neuroscience into our intervention is just to recognize the **power of our words.** Patients listen to healthcare providers, right? We're the source of their information. And so the things that we say, whether we're thinking deeply about the words we're using or not, they stick with patients, right? And so again, we **don't need to radically change** how every provider practices in regards to pain, but I think we can educate clinicians about how profound t**he influence of their words** is.

[00:30:48] And if we can start to **gently reshape the language that they utilize** with patients, I think that's probably one of the most important things that we can do. And again, very simply, when talking to some of my colleagues, I often just tell them, "Here's some things to avoid, and here's some things that we essentially want to do." We want to **avoid language that reinforces fear**, that reinforces **uncertainty** and **helplessness**, that feeds into a pattern of patients feeling threatened, subjugated, and dependent on us, which is the majority of the language that we utilize under the biomedical model, right? We talk very much about anatomy and talk about very specific tissues. And in doing so, I think a lot of that starts to instill fear. Patients aren't totally familiar with what that might mean, so it leads to a sense of uncertainty.

[00:31:39] We often, as providers, make patients feel like they need to come to us to get better. And so we utilize language like, "Yeah, well just come back in, and we'll do that, and we'll put your pelvis back in place." Right? And **patients have a sense of helplessness** with that.

[00:31:52] What we want to promote in working with patients and changing our language is **language that fosters a sense of safety,** and control, and understanding. This is going to feed into a pattern of patients feeling less threatened and feeling more empowered.

[00:32:06] Again, I think if we can start to **get providers to change the language** and the words that they use, that is going to have a profound impact just on how we manage patients who are struggling with persistent pain.

Examples in PT Practice

[00:32:21] Just again, this could be a somewhat exhaustive list, but a few of the kind of main areas where I see examples in PT practices in practice, but in medicine in general where we utilize **language that's harmful**. And not only are we using neutral language, but kind of one of the main mottos in medicine is "First, do no harm." And I think a lot of the language that we use in healthcare does harm. Right? And this can be something as simple as the diagnoses that we give to patients. You know, have patients that come in with a PT order, and it's got eight different diagnoses. Because they have chronic knee pain, and the diagnoses are you know, osteoarthritis of the knee, and patella femoral pain, and medial meniscus tear, and all of this language that the patients have access to. And even just utilizing those diagnoses is something that patients see and that feeds into patient's pain experience.

[00:33:19] The importance of this slide is we **need to be careful with the language that we use.** There's lots of examples I could use. X-rays is one area where I know we often use language that does a lot of harm for patients. In exercising, again, a lot of times the go-to, if a patient says, "Ooh, that hurts when I do that exercise, " we say, "Okay, let's do a different exercise." Rather than say, "Oh, you feel a little bit of tension when we do that stretch. That's great, right? We're hitting the right tissue. That's perfect. You're going to be more flexible."

Passive vs Active Interventions

[00:33:45] Okay. I will skip past this slide. Not super important. This leads to a little bit of how we integrate this into our current practice. So again, oftentimes pain neuroscience education is seen as a somewhat educational approach only. And so we could think of

that as kind of **passive pain neuroscience education**, where it's provided to patients purely through educational resources. What we should shift towards, and what I'm kind of proposing that we do is that we have **active pain neuroscience interventions**, where we're involving the patient actively in their therapy with exercise, with manual interventions, while we implement the pain neuroscience education.

[00:34:26] These slides will be available. This was just a little literature review that had looked at, I believe it was **eight different studies** that had compared either manual intervention alone or exercise alone versus manual intervention or exercise in combination with pain neuroscience education in treating patients with chronic low back pain.

[00:34:47] Again, we often see this as an educational only approach, but what the conclusion of essentially all of the studies were, was that, the patients did better when they had **pain neuroscience that was applied in combination with either manual therapy or with therapeutic exercise**. And so it doesn't have to be a educational only hands-off approach, but it's something that we can integrate into the practices that we're doing currently. And again, I'm speaking as a PT and speaking to PT interventions, but I think this would be very applicable to anybody practicing in medicine, just changing our language and the applications.

Big Picture Take-aways

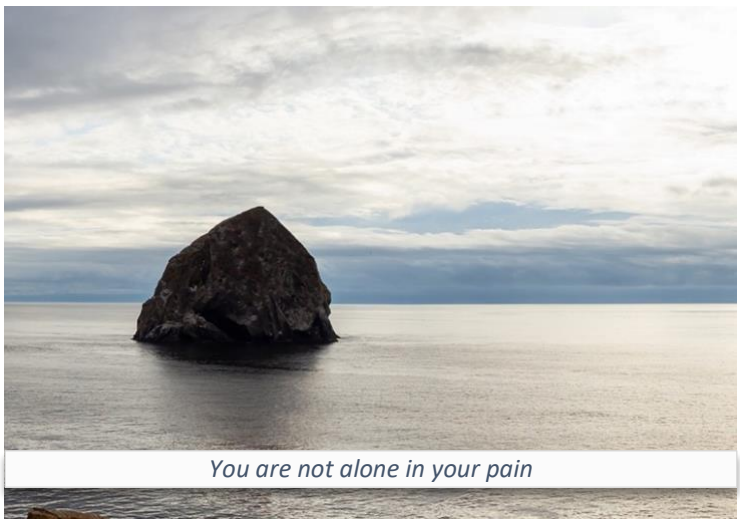
[00:35:23] So anyway, to summarize, these are just kind of some of the big picture takeaways from how I think **we can start to change the beliefs and practices of providers.** Again, we need to recognize that it's a big shift in their beliefs. So we need to introduce these topics slowly to our colleagues. We need to recognize that **beliefs are intertwined with emotions and values,** and so we need to approach our education and our conversations with curiosity, kindness, and without judgment. So we need to listen. We need to **identify their shared values,** and we need to **utilize story**, which plays heavily on emotion. And we don't want to push too hard and want to respect their boundaries. Again, we want to introduce these slowly and just create that sense of cognitive dissonance, which allows those providers to do the internal process of cognitive restructuring and changing their beliefs.

[00:36:11] Again, we want to **respect their professions,** their training, and their interventions, so we're not triggering their ego and the associated defensiveness that kind of comes along with it. And then again, I think the takeaway from what my research led to, and what I'm trying to implement with my own colleagues is that we want to try to educate providers to **implement this into their current practice model** rather than drastically shift the way that they're practicing.

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. Through community education events, health care workers describe how pain-science-based practices have changed their interaction with and care for patients, and patients tell stories about their experience with learned pain science tools used to help master chronic pain. We can now share these collected and curated stories, and other unique features, through the Alliance "story website" launched in early fall of 2022.



You are not alone in your pain

How to get involved?

Do new Pain Science insights and practices resonate with you?

We welcome anyone interested in collaborating to find or produce good stories and insights, then curating them to display on our website. Sharing in our discoveries and making them broadly available is both personally positive, and mutually satisfying.

The phone number or email address below will get you more information about us; then use the website link to the Member page for the steps to become an Alliance member, if that makes sense to you.

If you have a story using pain science tools and practices, and would like to share it with the larger community through our website, please send us an email. We would love to hear from you.

Phone: **541-224.8378**
Email: opsa@painsciencelifestories.com