Transcript of Pain 101 Podcast: Gaining Control Over Pain
Featuring Beth Darnall and Michael Saenger
Hosted by Natalie Osborne and Alexander Tuttle

Alex Tuttle (AT): Pain 101 is a podcast that focuses on pain as a clinical and research topic. Nothing the hosts say should be taken as medical advice or opinion, so sit back, relax, and enjoy.

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Welcome, everyone. This is the Pain 101 podcast; this is our first episode. I'm Alex Tuttle, one of your hosts, and this is my co-host.

Natalie Osborne (NO): I'm Natalie Osborne.

AT: So, Natalie, do you want to talk a little bit about what you do in terms of pain science.

NO: I work in a chronic pain neuroimaging lab out of the University of Toronto, so under Dr. Karen Davis, and I'm especially interested in sex differences in the brain and how they might relate to differences in chronic pain.

AT: And I'm a PhD at UNC Chapel Hill, I study autism and pain as well. So I work on animal models, and I'm interested in looking at social behavioral differences in animals that are experiencing pain, as well as animals that have other neurodevelopmental disorders.

So we're here today because we want to talk about ways that you can empower yourself to manage your own pain. We had a few recent interviews with a couple of experts who have written numerous books on the subject. The first guest that we had, her name is Dr. Beth Darnall. We hope you enjoy the first interview, and we'll be back to talk to you a little bit more about it in a minute.

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AT: Thank you for joining us today, Dr. Darnall.

Beth Darnall (BD): Thanks so much, Alex, it's a pleasure to be here.

AT: So how prevalent is chronic pain in the United States—how big of a problem are we talking about here?

BD: Well, I like to say pain is relevant to each and every one of us. If we don't have chronic pain right now, we probably will experience it in our lifetime. 100 million Americans are currently living with ongoing pain of some type, so that's roughly 1 in 3 individuals. And while these figures may sound astounding, they're really universal, around the globe we have the same prevalence of pain.

And there's a spectrum. There's just experiencing pain on a regular basis that doesn't necessarily impact our daily lives or functioning, all the way to the end of the spectrum where it's what we call high-impact chronic pain: a lot of disability, a lot of difficulty engaging in life activities and being able to care for oneself, and so we need to recognize the spectrum of pain, pain severity, how it impacts our lives, and then develop targeted treatments to address the needs of the individual.

AT: So how do you study pain? You're a pain psychologist, so what does that mean, what aspect of pain are you studying?

BD: That's a great question. Historically and culturally, we tend to think of pain as, it's "ouch," it's the hurt we feel in our body, it's a negative sensation in our body. But, in fact, the actual definition of pain is that it's a negative sensory and emotional experience. That's not widely appreciated, this emotional component.

AT: When I step on a nail, I think of it just hurting my foot.

BD: Yeah, that's right. But, in fact, it triggers a whole host of psychological responses, including emotions and motivation. Some of them are just hardwired, it's baked into our biology to want to avoid pain and escape pain. But recognizing that psychology is built into the definition of pain, it's half of the definition of pain. But we don't often treat pain that way, and then we wonder why we don't get great results with our pain treatments.

And so my philosophy is, fundamentally, we need to address the full definition of pain and recognize that pain is a psychosensory experience, it is mind and body, and if we pay attention to the mind part of the definition of pain, that's where we can really apply some targeted treatments to help each and every one of us learn how to best control our pain experience. So one of the things I like to say is that pain isn't just something that happens to us, whether we realize it or not we're constantly participating with our pain, and so I like to reveal those opportunities for people to gain better control.

AT: Your research deals with having people take control of their pain. Before we get into what you can actually do to manage your own pain, what is this research based on—what type of patients do you see or people who participate in your lab experiments to help you arrive at these conclusions?

BD: Fundamentally, I'm interested in any type of pain. So, pain is pain; we like to categorize pain, like, well, there's back pain, and then there's migraines, and then there's fibromyalgia. But really at a basic level, these sort of diagnoses or medical conditions, if pain is part of the diagnosis or experience of a medical condition, we're treating that. All pain is pain, regardless of your medical diagnosis.

And so, curiously, when we do some experiments in the lab, we will focus on a certain type of pain—back pain, for instance, it's the most common type of pain—but other studies, we take anybody who has pain because we're really interested in how pain is impacting people and how

people impact their pain. Then with that information, we can figure out how to come in and help people lessen the impact of pain on their lives and on their experience.

AT: It's funny that you say that pain is pain, and it doesn't really matter what type of pain. We're currently sitting in a room at a conference where hundreds and hundreds of scientists have defined pain in many, many different ways, but what you're saying is that regardless of what part of your body is hurting, or if you're in chronic pain versus acute pain, or maybe you have an upcoming surgery and you just want to prepare yourself for it, there are certain psychological factors that you can help control in order to make your pain experience better?

BD: That's it. And so if we want to take a look at, really get down to some of the basic science of pain, there are differences between pain types or diagnoses, but when it comes to the psychology of pain, when it comes to treating the person who has pain, the principles remain the same across all different types of pain conditions.

AT: So what are the psychological differences in somebody with pain than somebody not in pain—what changes about their mindset and the way that they feel?

BD: Humans are hardwired to want to escape pain, nobody wants to feel pain, and so that's why pain is so jarring. I call pain our harm alarm, it is designed to get our attention, it alerts us that there is danger afoot, there is something that we need to escape that is potentially a threat to our survival. That's the purpose of pain, is to motivate us to escape whatever is threatening us or could be harming us. And so pain is very effective for getting our attention and motivating us to escape that, and that works really well if you just place your hand on a hot stove and that signal alerts you to very quickly remove your hand. You prevent tissue damage, you spare injury.

But once we have ongoing pain, once we are living with chronic pain, we can't run away from the migraine or the headache or the back pain, you can't escape pain that is coming from inside of you. And yet those signals are still going to be ringing, alerting you to danger, to harm, to the need to protect yourself. And so we're biologically wired to want to escape pain, and also to want to defend against pain.

Once we have chronic pain, those naturally hardwired behaviors and signals, they actually work against us. It turns out that, unfortunately, they lead to persisting pain and they also lead to additional suffering. And so part of the recipe for gaining control over pain is to learn exactly what pain is and how to alter these natural responses that will come up simply because you're human. This is true for all of us. And so while we're all born with the motivation to escape pain, we're not born with the understanding of how to modulate pain or the distress that it causes us.

And this is learned, this is the realm of pain psychology, this is where we learn strategies so that we can calm our own nervous system so that we can start to train our brain away from pain, so that in that calming of our nervous system, we are communicating a sense of safety to our mind, to our body. And it turns out that that is actually medicinal, it actually can shape ourselves towards relief rather than towards pain.

AT: There's an interesting set of talks at this Congress talking about the component of suffering with pain, so this isn't related to the intensity of the nail going into your foot, the physical sensation, well, I think it's related but it's not the same thing as the unpleasantness aspect, it's almost like this pain is inescapable and it's beyond me. Has any of your research looked into this, or is this an area that interests you?

BD: It's a great question. The suffering component is an additional layer, and a lot of the suffering component is driven by a sense of helplessness about pain—there's nothing I can do. And when we feel helpless, it's a horrible place to be, so much about improving the quality of our life within the context of pain is helping us focus on a sense of control over pain.

So my research is very much focused on this. I focus on something called a negative pain mindset, or in this scientific literature it's called pain catastrophizing.

AT: That sounds scary.

BD: I know, it is, and I really regret the term pain catastrophizing, it's polarizing, it can feel blamey or judgy; this term was really coined about 30 years ago. What it means is, it's when we have trouble focusing on anything but the pain, it grabs our attention like pain is designed to do, but it really holds it there and we find that we can't really escape that focus on the pain. It's rumination of pain, it's just that persistent focus on pain and how awful it is, and it's also feelings of helpless about pain.

And it turns out that this kind of grouping or constellation of components of our psychology around pain, while it's natural and understandable why we might focus negatively on pain, it turns out that it's vitally important that we learn how to disengage from this negative focus and learn ways to help ourselves in the context of pain, because if we are stuck in that negative focus, it has a very negative impact on our pain intensity, also on the trajectory of our pain, and it undermines our response to medical treatments for pain, including surgery, including a lot of different treatments that doctors will try to help us with our pain. That's how powerful our psychology is, because our psychology is directly seated in the nervous system, and we have the capacity to amplify pain processing in the nervous system directly.

AT: So we can make it worse by thinking the wrong way about pain.

BD: That's right. Well, we literally grow our pain in the brain, and so the way I describe it is, well, that which we focus on grows larger, so we want to be careful what we're focusing on. And, of course, your brain is going to focus on pain because it really gets your attention, but by learning certain skills and techniques you can start learning to shift that; once the brain goes there, you can start shifting it to, okay, now I'm going to calm, now I'm going into calming, and over time that shapes your nervous system towards relief.

So I always say that it's like picking up a can of gasoline and pouring it on the fire. Now, we can't take away the fact that you're living with the fire that is your chronic pain, but I can teach you how to put the can of gasoline down so that you're not unwittingly pouring the gasoline on the fire and then having to deal with that layer of suffering of pain.

AT: So let's get into it. In your latest book, *The Opioid-Free Pain Relief Kit: 10 Simple Steps to Ease Your Pain*, you recommend some of these strategies that can help me or somebody else suffering from pain, or I believe you also prepare somebody who might have to undergo a painful procedure to sort of train their brain or anticipate the painful experience. So what are some of these techniques, what are some of the 10 steps?

BD: So right off the bat, the most important thing is to have a solid understanding of what pain is, that when you're living with ongoing chronic pain, pain does not equal harm often, it's almost like signaling that's misfiring. You want to check with your doctor, but more often than not it doesn't mean that there's ongoing damage or injury, it's just misfiring of signals.

Now, once we've established that, there are things that you can do to calm your nervous system. The first, most important skill that you can learn, because it's the easiest ,is diaphragmatic breathing or very slow, deep belly breathing. And the reason why this is so helpful is that when you learn to slow your breath, it is connected through the cardiovascular system, you're slowing your heart rate. And when you slow your breath and your heart rate together, it kicks off a cascade of relaxation in the nervous system that actually counteracts pain itself.

And so that deep relaxation, it's like putting your hand on the alarm in the morning, that harm alarm, or that alarm is ringing, and you put your hand on it, and it stops it from ringing. And it gives you a critical level of control so that then you are able to make good choices and good decisions to support yourself and what you need to do next to help yourself with pain.

AT: That's really interesting and it's something that I try to do just to relax in general. When I'm stressed at work, I do this deep breathing and I find that it actually calms me down for a whole range of things. But it's interesting that that also works to help reduce your pain.

BD: Well, it's so true, because if you think about it, at a core level, pain is a potent stressor, and when you have chronic pain, of course you're living with chronic stress. And what that does is it causes chronic stress responses in the body—increased heart rate, shallow breathing, some people notice that they're holding their breath, tight muscles. We go into a defensive body posture, unconsciously, in an attempt to protect ourselves.

And while, again, this is hardwired, and we do this automatically, it's vitally important that we have a way, a toolkit, to counteract this protection that we're engaging with, because the solution is actually to communicate safety to our mind and body. And relaxation is the language of safety, and that's why this fits together. It's not about pretending like the pain isn't there, it's not about just ignoring it, it's deliberately acknowledging the pain and going into the language of the brain and the body, the healing language where we're able to communicate a deep sense of safety, and that's through the relaxation, and that's where relief is.

AT: So let's say that I am struggling with my chronic pain condition—I don't actually have one, but let's hypothesize. Let's say that I have chronic pain and I follow your steps in the toolkit and I find that it helps a little bit, but then I'm still having trouble dealing with my daily pain. Are

there other techniques that you do as a pain psychologist, if I were to seek you out for treatment, can you talk about some of the techniques that you use that would help me more.

BD: Absolutely. So in my books I really give a recipe for all of the things that people can do quite simply in their daily lives, it's like a formula that you can get going with today, but recognizing that a lot of individuals need a higher level of care, that they can benefit from working one-on-one with a professional, and that could involve working with a physical therapist to really discover appropriate movement. Movement is one of the best forms of treatment for ongoing pain, but when we experience pain ongoingly, what pain does is it encourages us to stop moving; we stop moving in order to protect ourselves from the pain, but the less we move the more vulnerable we become to that pain actually worsening. It's so counterintuitive.

AT: Well, there's a lot of evidence showing that exercise is actually a great way to manage your chronic pain condition, a lot of people at the conference are talking about that, so it ties in with what you're saying.

BD: Absolutely. And so movement, appropriate movement, is some of the best medicine for pain, but we sometimes need to work with a professional to help us understand what is appropriate movement and to get on a program to do so. So that's one example. Another example is working with a psychologist to really dive into maybe more of what we call the biopsychosocial model of pain treatment.

AT: So can you explain that model for me?

BD: Yes. Biopsychosocial recognizes that we're not just treating the symptom of pain or the location of your body where you might feel pain. We know that pain is best treated when we treat the whole person who has pain, and so we want to take a look at every aspect of a person's life, yes their biology, but also their psychology, and also the social factors, the environmental factors in a person's life that may either be impacted by the pain or that are serving to impact the pain. And we really have to take a look at all of this together and put together a comprehensive treatment program, because if we just focus on one aspect and we ignore the others, we're missing huge portions of the equation, and then we wonder why we don't get best results.

AT: Speaking a little bit more on that, drug companies have traditionally tried to find big blockbuster drugs, these drugs that will treat pain for everybody, and there's been a lot of recent news showing that some of these drugs for chronic pain management, opioids, actually lead to problems of addiction and tolerance, and other side effects like constipation and things that are a negative consequence of using these drugs chronically. Was it a lack of the biopsychosocial model that explained why we ended up where we are with an over-reliance on opioids?

BD: Absolutely. So here's a key message, is that one size never fits all, and this is particularly true within the context of pain. There will never be any one treatment that's going to solve everything for every person. What we need in pain care is a range of treatments and then with each person we want to take a very close look at what are their specific needs and tailor our treatments to that individual. Some of those treatments are medications, some of those treatments are psychological treatments, some of them are movement pieces.

And almost for every person, there's going to be components of the psychology and the movement, and for some individuals, medications may be one important approach to treating pain. But the pill bottle can't be the only treatment that we offer patients, and if we only offer a pill we're doing a disservice because we haven't equipped that individual, we haven't empowered them to know what to change in their life or how to best control their own experience, we have now made them reliant on that one thing, whether it's an opioid or any other type of medication.

But back 15 years ago or whenever the opioid prescribing was increasing, we were definitely seeing, right out of the gate, an emphasis on only prescribing, because doctors don't necessarily have enough time to fully characterize the patient and to determine what treatments are best for them. One of the most important solutions at this stage is really providing all clinicians who treat pain with the ability to truly characterize their patients, and then also offer them a broad range of options, emphasizing those strategies that equip patients with the ability to best control their own pain.

AT: And, in fact, you have some very promising results showing that by incorporating the psychology of pain into treatment strategies, you can actually reduce the amount of opioids that somebody with chronic pain is on, the amount of pain drugs that they're taking. Can you speak more to this?

BD: Some of my newest research has really been focusing on expanding access to pain care, because we can talk all day about what works well, but if you're living in a rural part of the United States and you can't access these treatments, it doesn't mean anything. And so we really need to focus on that nationally and also globally.

Cognitive behavioral therapy is a psychological approach to treating pain, and it has excellent evidence behind it, and yet very few patients have the ability to find a local pain psychologist and have 8 or 10 sessions with that therapist to learn this information, these skills, and be able to improve their lives. So I have focused on essentially taking these longer-course treatments that are inaccessible and compressing them into a single-session two-hour class that people can come, and 50 people at once can learn this information.

We have some really promising results for a single-session pain psychology class I developed, and we're now studying that; we received monies from NIH and we're studying that in detail. And what we hope to show is that some of these brief, low-burden, low-cost treatments can greatly improve patients' ability to reduce their pain and improve their function. We have now digitized that single-session class, and by that, I mean we've now put it on the internet and tailored it for patients who are going to have surgery, because a hundred million Americans have surgery every year.

One of the most important factors or predictors for post-surgical pain and post-surgical opioid use is our psychology, but we don't have treatments readily available before or after surgery to help people. So I developed a program called My Surgical Success, it's online and patients go to the My Surgical Success website, they watch three 15-minute learning modules, it's videos of me

providing this information. They download a personalized plan which they can complete, they download a customizable app onto their phone or electronic device, and it's an automated treatment platform so that no matter where you are in the world, even if you don't have access to a clinician you can have access to this platform.

And our pilot study, we're just submitting this now, so it's not yet published, but…

AT: Oh, okay, so breaking news.

BD: Breaking news. But the short story is that we conducted a randomized, controlled trial in women undergoing surgery for breast cancer, and what our results show is that the women who received My Surgical Success, compared to the control group, they had a substantially reduced time to stopping their opioids after surgery.

AT: So they were able to go without the painkillers sooner than the control.

BD: That's it. Basically, they recovered quicker, they needed less opioid medication, and that's what we want. Most people will need some opioids after surgery, but we want to help people recover quicker, stop the medications sooner, get back to living life and doing what they love sooner. So we have a really positive signal that we're very excited about because this is free, and if we can make this available to people in the future, any type of surgery, we're hoping that it will be a really nice non-drug option. Because what we're finding now is that patients are actually coming to the hospitals and they're asking for opioid alternatives; a lot of people don't want to take opioids after surgery.

AT: Do you think that your techniques and maybe some other, newer analgesics that are in development could eventually replace opioids, is that something that we should be trying to do?

BD: I think the focus on non-addictive and low-risk drug alternatives is really important. We will always need medications, I'm very grateful that they're there. I believe that we will always need opioids; opioids are not bad medications, they're actually incredibly helpful medications when they are applied to the right person and the right circumstance. So what we really need are better systems to determine who's right for that medication and then allow them access to that medication, and then for other people we need a range of alternatives, low-risk treatments.

I personally believe that everybody needs access to pain psychology, education, and skills, because we've got a human body for a really long time, and if we don't have pain now we'll experience it sometime in the future. And knowing in advance how to best help yourself can help prevent the development of chronic pain.

AT: Well, thank you, Dr. Darnall, for your time, this has been an amazing talk.

BD: Thank you so much, Alex.

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AT: So that was really interesting how Dr. Darnall said that there are certain things that you can do to take control of your own pain, so simple things like breathing exercises or thinking about your pain experience, but in sort of a disconnected way.

NO: Yeah. It was really interesting, too, when she was talking about the analogy of you have this fire that you live with, and the fire is your chronic pain, and you can either be pouring gasoline onto the fire or you can put that gasoline can down and learn tricks or ways to calm your central nervous down, essentially. And my lab studies attention and pain, and, obviously, like Beth said, we're all intrinsically going to pay attention to pain, that's our first instinct, but we can learn techniques like mindfulness that sort of change that attention to be more constructive and allow us to be more present in our day-to-day life. So I thought that was really cool.

AT: Yeah. It's funny how we have an innate ability to detect pain and to run away from it and to be scared of it, but that it actually takes a long time to learn how to manage your pain correctly to say that, yes, it's present, I can't escape it, but there are ways that I can manage it.

Yeah, we were talking about, in the interview, there are cases where these simple techniques can really help you prepare for surgery or maybe overcome some pain that you're experiencing, but there are other times when you need to rely on experts in your community to actually manage your pain better.

So Dr. Darnall went on to talk about tools that she's trying to give to physicians and other members of the medical community to help people better manage their pain. And I think, Natalie, this is something that the next guest that you interviewed does specifically, is that correct?

NO: Exactly. So I interviewed Dr. Michael Saenger, so he's a medical doctor as well as the director of the Empower Veterans Program out of the Atlanta VA Health System, and he's also an assistant professor of medicine at Emory University. And basically what he's done is he's taken a bunch of evidence-based, proven techniques that help people manage their pain, improve their quality of life, and he's packaged them into a program that is more accessible and attainable and effective, in this case for veterans.

AT: Great. Well, I'm excited to hear the interview.

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NO: I'm here with Dr. Michael Saenger, assistant professor of medicine at Emory University, and director of the Empower Veterans Program, or EVP. This program was created by the Atlanta VA Healthcare System to serve veterans with severe, persistent pain, and since the summer of 2015, nearly 500 veterans have completed the program.

Michael, how common is chronic or persistent pain among veterans?

Michael Saenger (MS): At least half of veterans have chronic pain, and if you look at the differences between men and women, perhaps more than three-quarters of women in more recent

conflicts notice chronic pain. If you're talking about severe, persistent pain, at least a tenth of veterans would fall into that group, or high-impact pain would be another way that some people describe that. But basically very severe pain, it's affecting a person's whole life where they feel like they're really upside down.

NO: Talking about the incidence of persistent pain or chronic pain, and that it was higher in the women. Do you have any ideas about why that might be, if it reflects we know that chronic pain sufferers are more often women generally, or if it might be something specific to the population?

MS: Well, with veterans there's this complex living out of gender equality, so a woman Marine is still expected to lift the same amount of a backpack, but she may have a smaller frame, on average, than some of the male Marines. She may have also had to endure a backpack that was designed for a man and not for a woman. And the military has caught up to many of those kinds of things, I think 15% of active duty are women now in the United States.

And women have other challenges perhaps than men. Many of the women in active duty experience military sexual trauma, which is an extra traumatic event to their personhood, many of those women had sexual or other abusive relationships before the military. So, again, there's a whole life journey here, it's not just I had a hard landing with a parachute fall or had shrapnel wounds, it's many things building up over life and how I'm adapting to that.

So this idea of ACT—Acceptance and Commitment Therapy—part of the foundation of that is trying to develop psychological flexibility. And, how can I acknowledge, like the Serenity Prayer, to accept the things that I can't change and work on spending my energy changing the things that I can.

So women, I think, have maybe some additional challenges that men didn't have, and that could explain some of it. We know that in Atlanta, we've been privileged to, every 10 weeks, restart nine different groups of veterans. One of those groups is for women only, because we were committed to providing a venue for women to be coached if they chose not to have men as part of that closed group in the 10 weeks, and the women who choose to be in the women's-only group at week 1 have higher degrees of depression and some of these other comorbid issues that, again, make the entire daily life a little bit more challenging.

NO: And can you describe what day-to-day life is like for the typical person who decides to enroll in the Empower Veterans Program?

MS: So some of these folks are still managing to hold onto a job, although it's becoming increasingly difficult. Most of the people who have graduated from the program and have come to the program thus far are not currently working, they are retired from the military or they've served and now because of the pain have not been able to continue in the workforce. So most of these folks would like to work, and yet the pain is impacting pretty much every aspect of their life. They're not sleeping well, they're not sleeping very long, their relationships are not great, they may find themselves isolating more and more. Their day-to-day activities are more and more constricted, their activities around the house may be more constricted. That also just impacts how you feel about yourself and how maybe the person that you've committed your life

to feels about you and can create other tensions. So pretty much all of these different ways that are just day-to-day activities are affected.

NO: And how does this program differ from the way pain has traditionally been treated in this population?

MS: In trying to understand how can we help people with severe pain to have less pain and hopefully no pain, we have used, appropriately, a biomedical model, trying to say, if you've got a sensation of something going on in your foot, let's look at your foot, see what might be a problem, find it and fix it. And that problem approach works really well if I drop a crate on my toe and break a toe. I can go into the emergency room and they can take an x-ray and they say, oh, look, the bones don't match up, and it doesn't take a neuroscience major to be able to say, we need to reset the bone.

But with chronic pain it's a lot more challenging than that. So if you look at the life of a typical veteran, veterans don't become veterans randomly, these folks have served—folks in the United States and other parts of the world—to support the whole country's freedom. But they may not have only joined the military out of patriotism—that was part of it—but there may have been economic challenges or opportunities for schooling that they didn't have growing up otherwise.

So you've got folks perhaps coming out of a challenged environment, entering the military, having a sense of purpose, but possibly also doing some very challenging things, perhaps doing things that they now have a hard time forgiving themselves for—either not doing something or not stopping something, or through the horrors of war they may really feel betrayed by their government or by God. And so those complexities, kind of the moral injuries, these things that are related to what gives meaning in life—why did this happen, who am I, did I live up to my standards, those kind of questions now are added into the mix.

And as they're leaving the military, maybe going back to that same challenged environment—trying to find a job, trying to work perhaps with some new injuries in their knee or lower back—so the problems are just accumulating. But they're not only "medical" problems, they are social problems, they are relational problems. This idea of existential problems or moral injury, a sense of betrayal, all of these things together are contributing to the overall sense of pain and making their lives feel unmanageable.

NO: Now, in your workshop, you talked about moving away from therapies that are dangerous, ineffective, or passive, and towards therapies that are safe, moderately effective, and active. Can you give some specific examples of the therapies that you encourage people to move towards?

MS: So the things that are allowing people to own new skills, to see success in living the life that they want. If someone valued time with their family members, and yet the back pain seemed to flare up when they joined in a family gathering, for them to live out a high-quality, valuable life, how can we in the Empower Veterans Program or other programs help that person understand what it is that they value, first of all, and then start making steps toward that.

Maybe there's a short-term goal. If you value time with the family, well, I could go to my niece's ballgame. Well, what would it be like to actually get in the car, to sit in the stands, and not feel like it was just too much, and I was on the couch for two days after that. So there are small steps that could be worked through so that people were able to get into the car, sit in the stands, or perhaps find another alternative, standing on the sidelines, and being able to participate in being there with the family supporting their niece, and having a sense of success that they're living a valuable life.

NO: So the program is 10 weeks long and it involves a team of transdisciplinary coaches who guide participants through the three main subjects. Can you give us a bit of an overview of those three main subjects, so Whole Health, Acceptance and Commitment Therapy, and Mindful Movement?

MS: Right. So it's a 10-week program, which turns a lot of people off. But this idea of severe chronic pain affecting all of our life, it didn't happen overnight and to untangle that and have successful skills to living a more value-based life takes some time. So a typical person would come maybe once a week, Tuesday morning for 10 Tuesday mornings, and the first of three 50-minute sessions would be EVP, or Empower Veterans Program, Whole Health. And during that time, we have chaplains that are specially trained in coaching people to talk and to problem-solve related to a common area that's often upside down, one of the eight self-care areas that we talk about in what's called the Circle of Health.

This is a model from the VA Office of Patient-Centered Care trying to help people to understand parts of their life that may have not been tended to, that if we got a little bit of coaching in that area, spent some time nurturing that part of our life, then the rest of our life would feel better. So that may be related to sleep, such as, what would it be like if I got up at a set time each morning, whether I slept well the night before or not, could that, in fact, help me to be ready to go to sleep when I'd like to the next evening?

So we talk about a specific self-care area, there's a conversation, and the conversation is often, what are the barriers to that and how might we work around those barriers if that's important to me. So veterans are listening to other veterans sharing what has worked or not worked for them, and they are working through how they might actually live that out themselves. So in the first of the 3 hours of Whole Health, there's this discussion about one of the self-care areas. Other self-care areas are food and drink, maybe using active listening skills to develop a relationship, if that was important to you.

There're some challenging areas, as well. One of them is emotional surroundings, and in that there's a discussion related to, what would it be like to give myself permission to move on from unforgiveness, if that's an area that actually is contributing to my overall pain and dysfunction.

That discussion for Whole Health is not all of Whole Health, we also sandwich that within mindfulness practice. In the mindfulness practice, we start out with a breath practice, and we just let people know that the breath is just an anchor of attention. So we encourage people to experiment with us letting their minds wander, that's what they do, not beating ourselves up when we've got new thoughts and feelings that pop up. But as these thoughts, even if they are

very intense thoughts associated with very negative emotions, pop up, to learn to notice that, notice that my mind has wandered, and enjoy the freedom of not having to be drug off by that thought, feeling, sensation for minutes or hours, but being able to refocus on the breath, and refocus on the breath, and refocus on the breath, and as we're using that practice, to create a little bit of safe space.

So this idea of mindfulness, it's not a lot of things but it is being aware of these new thoughts, feelings, sensations, and if one of these thoughts is not a new threat, to just lightly notice that and come back to the breath. And as I'm doing that, again, I might have a sense that I'm creating this safe space. Some people describe that as relaxation, but it's not really; the aim is not to be relaxed, I'm still aware if there's a new threat, but as I'm not spending extra emotional energy fighting with this thought or emotion, I have extra reserves. So from this safe space, I then could say, what was it that was really important, what do I value, what brings my life meaning and purpose, and then, what was I going to do about that? So this mindfulness practice is in service of us living our valuable life.

So the first of the 3 hours, Whole Health, is this discussion about a self-care area, with practice of a mindfulness breath practice, for instance. We do that for 50 minutes, once-a-week for 10 weeks. There's a break. The second of the 3 hours is ACT, or Acceptance and Commitment Therapy, and this is an evidence-based approach to help people live their life with a higher quality. It is very values-based, that is, what's important to me, and it's also mindful. So it fits well within the larger way that we're approaching pain, and people living a life of quality even with pain.

So in ACT, or Acceptance and Commitment Therapy, we use a lot of metaphors. One of the metaphors is the rock and the wave. So, if I was the wave, and I was intending to move towards the shore, and I come up against a rock, what happens? Well, yes, some of the wave may be kind of kicked back for a moment, but the wave finds a way around or over or through that rock. And so, what would it be like if I actually was like the wave, to find a way around this particular problem in my life, and that particular problem, and that particular problem, as opposed to just feeling like I've got so many rocks that I'm just stuck, the wave can't move. So it gives people the opportunity to kind of break apart all of the different things that haven't been working well, to work on one of those rocks.

Another analogy we use are bubbles, bubbles kind of stick together. And I congratulate people that come to try out the program, because they've been like a bubble; they've taken the pain with them. When they woke up that morning with back pain, they didn't say, oh, I've got back pain, I'm not going to go anywhere. They could have, but they were really acting like the bubbles and they were saying something like, pain, good morning, you're still here. I'm going to the class, are you coming with me, because I'm not going to stay. So we use metaphors to help people think about how they might live their life even with the pain.

Then there's a 10-minute break, and in the last of the three 50-minute sessions we do EVP Mindful Movement. And the Mindful Movement starts out not moving. We first need to feel safe in our bodies and be more aware of our bodies. And I'm changing my posture right now because

I can check back in with myself, am I using my body in an efficient way? Well, when I slouch it might feel good for a moment, but I later notice that I've got these extra unnecessary aches.

So, first of all, just being aware of our bodies, including the parts that don't hurt, and then as I'm becoming more aware of my body and how my body senses are registering now, and later on today and tomorrow, I can become aware that these pains may come and go, as opposed to, in the heat of the moment, just feeling like, oh, the pain's bad now and I'm sure it's going to be even worse by lunchtime. So it gives people a little bit more perspective.

There's some evidence that it makes the map of that pain sensation on our brain more defined and not just smudged. Many people have noticed that when the pain started out, it was a more discreet area perhaps in their back, but now it's just kind of the whole back and maybe down into the leg. So as we are checking in with our body, including the parts that don't hurt, that can help us better map in our brain where this sensation is being perceived, but also just feeling safe in my body, feeling a little bit more in control, and then from that place of safety, exploring small movement.

And in EVP, the Empower Veterans Program, we focus on whole-body movement. So we build up gradually in the various weeks until weeks 8, 9 and 10, the group for 5 or 10 minutes together is doing what we call EVP tai chi or EVP yoga. And it's this whole-body movement that has actually been shown to help not only with doing a little bit more of the things that are important for us but having less chance of falling or injuring ourselves less if we did fall.

So there's other benefits to tai chi. And for those of you that are veterans near a program in the VA for EVP, come. For those of you that don't have that kind of program locally, consider a community tai chi class or an online tai chi class, and just start slowly. And you don't have to exactly imitate the movement of the instructor, you're exploring; you're the expert of you and you can just explore slowly this whole-body movement.

So the three parts, the Whole Health, the Acceptance and Commitment Therapy, the Mindful Movement, come together with the chaplain, the specially trained psychologist, the specially trained physical therapist, really as an integrated team of coaches for these veterans with severe, persistent pain.

NO: And each participant would also get a weekly call from their coaches?

MS: Exactly. So they have opportunity for individualized care from the physical therapist and the psychologist, but there's a preset weekly call from the Whole Health coach, the chaplain, to talk about, how's it coming, what is it that's really important to you. We do something called a values card sort, and most of us haven't really done that. But if you had 30 cards with different things that might be important to different people, and a couple blank cards so you could fill out other things if there was something that was unique to you, you basically can sort those into unimportant, important, very important. And we can narrow down on what's very important, we can actually remove some of those things that our parents or others told us we ought to do, and we can take those out. But what are the few things that are really super-important to us, and how can I start living my life toward that value, or align with that value? So, as I mentioned earlier,

the idea, if family's important, how can I do things that will support the family and being with the family?

NO: And that's moving away from not what's the matter, to what matters?

MS: Exactly, so this cultural change within the VA. So we've always had good clinical care tied in with our affiliate university members, but to add in not what's your complaint today or what's the matter, to what's really important, what matters to bring your life meaning. And if we had that kind of a discussion with veterans and their healthcare team, or anybody with their healthcare team, what a different conversation you might have. And so rather than having a doctor or nurse kind of tell you, this is what you need to do, have a discussion about what's important to you and how you might move in that direction. That may include healthy lifestyle choices, it may not, but adding another "ought" to the patient is unlikely to be carried out, and we can all relate. We know things that we ought to do but we choose not to, so how can I focus on what's really important and start living that out.

So the VA has this new Whole Health system redesign that was adopted about a year and a half ago from the National Leadership Council for the VA and now is being rolled out in each of the 18 regions with a Whole Health flagship. So these Whole Health flagships are finding new ways to ask these questions about what matters in the clinical realm, but also in other realms, so, what if we allowed people to come to healthcare for health without a disease, what if we were able to talk about self-care skills, whether it's getting involved in a tai chi program or a breath mindfulness program or physical therapy? It could be a number of different things, it could be cognitive behavioral therapy for insomnia, which is very evidence-based if you're having sleep problems rather than a medication. So what if we had this wellbeing part of the VA and all healthcare systems, that you wouldn't have to come because you have a disease to be managed, but you just want more health.

NO: And that's part of making the veterans more proactive in their own care, rather than just being passively told what to do.

MS: Yes. So that's coming out of what's called the Office of Patient-Centered Care and Cultural Transformation, with Tracy Gaudet's leadership and others.

NO: So at the IASP workshop you presented some exciting results from the first 200 participants of the EVP program. Can you describe quickly your main findings?

MS: Yes. None of this is experimental, we're taking things that we knew had evidence of working and we're packaging it in a little different way. For instance, there was, for 20 or 30 years, programs that are 100-hour training programs that are maybe even a 3-week residential program, and the VA in Tampa, Florida is an example of that. It's a great program but many people can't access a 100-hour program. So this 30-hour program, we tried to take the highest impactful, meaningful skill training and bring those things together.

And what we saw was that, on average, veterans on week 1 had moderate severe depression and that had decreased to moderate depression at week 10. We noticed a decrease in pain

catastrophizing and in pain interference, we noticed an increase in movement, which we could measure by how long it takes for someone to stand up, walk a certain distance, and return and sit down, the Timed Up and Go test. So there were a number of different ways that clinically we were trying to use to continually improve what we were doing, so it's part of a quality improvement or QI process to take what is good and make it better.

NO: And I imagine that with this population maybe having higher instances of trauma or post-traumatic stress, or maybe the moral injury as well, how those might also be changing in conjunction with the pain.

MS: Absolutely. And to be clear, this is not a therapy for PTSD. So, post-traumatic stress disorder has evidence-based therapies—cognitive processing therapy, prolonged exposure therapy. These are evidence-based therapies that the VA and other mental health providers can offer, and, as that thought is there, or that sensation or emotion is there, this additional skill of mindfulness and being able to not be derailed by this thought, feeling, sensation, is quite a helpful skill. And in some instances, anecdotally, we've seen where veterans who were offered an evidence-based treatment for PTSD weren't ready, but after having a little bit more skills just to create this safe space, did take advantage of that additional training.

And, as you mentioned, within the Whole Health context and in the EVP Whole Health in the first of the 3 hours, in talking about this idea, could I give myself permission to move on from unforgiveness. Well, if part of that unforgiveness is not forgiving myself, that actually takes a huge burden off and opens up new doors for people.

NO: So what are the next steps for the program?

MS: Well, we would like to continue to improve. If 10% of veterans have severe persistent pain, that's 2 million veterans nationwide, so we would like to find ways also to spread this to other VAs and outside the VA into active duty, into other places where people could take advantage of these kinds of intensive coaching opportunities, if you needed that. If someone has chronic pain but it's not this severe persistent, we're not asking you to come to a 30-hour program. If you could get a little bit of individualized coaching, perhaps kind of a self-help workbook. One of the workbooks that uses this Acceptance and Commitment Therapy, or ACT, is called *Get Out of Your Mind and Into Your Life*, and it's by one of the founders of ACT, Steven Hayes. So that's easily orderable online, it's not that much money, less than $15. So it could be a good investment to do on your own or perhaps with a counselor in your community.

NO: Right. Well, thanks so much for your time and for your work, and we'll keep an eye out on this really amazing program.

MS: My pleasure. Thank you.

[music]

AT: Wow, what a powerful interview that was. It's really striking to me how veterans have all of these issues that they have to deal with which seem to be above and beyond, so it's really

interesting how Michael has figured out ways to hone in on that population and really help them manage their pain.

NO: Yeah, they have to deal with so much more on top of chronic pain, often they have trauma, they might have post-traumatic stress disorder. Like you said, they might go to difficult living situations after they come out of the Army. So it was really amazing to see the results that they got, where the first 200 participants that did the program, they had decreased levels of depression, less pain catastrophizing, their pain interfered with their life less, and they were actually able to move more.

And it would be so exciting if we could bring a program like that to Canada, because a lot of Canadian vets also live with chronic pain. There was a study in 2015 out of Queen's University by Elizabeth VanDenKerkhof, and they studied over 3,000 people and found that 41% of Canadian vets experienced constant chronic pain.

AT: That's similar to the 49% that I think a few studies in the US have reported in the last 10 years, at least from people serving in Afghanistan.

NO: So it's this huge issue. And we want to make life for vets easier, right, and so this is one of the ways that the program just hits not only on the chronic pain but the other psychological aspects that go into that, because we know pain is not just, "ouch, this hurts," but it's how you're responding to it. So it was great to see how he integrated all those things.

AT: So that being said, I think we need to wrap up. But we were very happy to bring this premier, this first episode to you, the listener. Look out for more Pain 101 podcasts in the future. We have a few more interviews coming up on this site, as well as on Pain Research Forum, which is the sister site.

So check me out @TuttlePhD. Natalie and I are planning on doing an additional podcast called *The Paincast*, where we'll be talking more about our own research and other topics that interest us in the field of pain science; this is going to be a lighter series where we talk about cool advances in pain research and other interesting issues to us.

Natalie, do you have anything else to plug?

NO: Yeah, you can follow me on Twitter @NatalieRaeOz. If you're interested in learning more about how trauma and pain interact, I'd recommend the book *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma* by Bessel van der Kolk. I read that on a cross-country road trip once, it was pretty cool. And if you are interested in neuroscience in general and also true crime, I have another podcast called *Mind On Crime* you can check out, with my two friends.

AT: Okay, Natalie, so what do we always say?

NO: Well, this has been Pain 101, that's it for today's lesson, and see you next class.

[music]