NUTRITION + PHYSICAL THERAPY: THE PERFECT COMBINATION TO REVERSE CHRONIC PAIN

A Comprehensive Multimodal Approach To Chronic Pain For Physical Therapists

BY **JOE TATTA, PT, DPT, CNS**

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Need Better Professional Tools For Treating & Resolving Chronic Pain?

Do your patients with pain keep coming back with the same complaints?

Are you confused why some patients get results from your time together, while others (with similar complaints) experience few, if any improvements – even though they appear to follow your treatment approach to the letter?

Are you frustrated by not being able to help more of your patients truly resolve their pain as they shoulder the burden of seemingly never-ending suffering that appears to have no lasting solution?

I understand.

Before I figured out a more comprehensive multimodal approach (I'm going to share with you in this guide), mixed results also gave me pause and a strong desire to find a real solution for those patients.

As you know, chronic pain affects over 100 million Americans. That is more than heart disease, diabetes and cancer combined. It also consistently ranks as the number one or two reason patients seek care. Patients are suffering and they're hungry for solutions that minimize side-effects, need for surgery or injections and get them to true root cause resolution.

As you'll learn, this is because the effective treatment of pain requires a comprehensive approach. There is a growing body of scientific evidence that I want to share with you that shows that the *biomechanical approach* alone may not fully address how their pain is manifesting itself physiologically and psychologically within their bodies.

It's unfortunate that most PTs weren't taught the more powerful *biopsychosocial approach* that encompasses a much more effective multimodal approach, when patients (who are in considerable pain) are pouring into your clinic, office, nursing home or on to your schedule over and over.

Less than 1% of overall healthcare training is devoted to pain, and what's worse, so very few practitioners are aware of this multimodal solution that consistently yields better long term

results ... and you'll see why in this guide, as well as my special on-demand training.

You may be relieved to know that the information I'm going to share with you will allow your patients to actually become and remain pain-free and heal faster. There really is a method out there right now that works just as well as (or even better than) pharmaceutical medications, surgery and the interventions you're currently using.

Both PTs and other health professionals are currently using it to resolve the underlying causes of chronic pain for their patients in practical ways that are easy to apply – and it's my mission to get this information out to more PTs like you.

In this guide, we're going to cover the exact reasons why the biomechanical approach to pain isn't enough in my opinion, as well as everything you need to know about the new evidence-based, comprehensive approach that can start getting you even better results for your patients, quickly.

Then I'll share with you a real-life case study from my own work with patients to show you how they benefit from the 5-step method I use and teach.

What's great is that this method is well within your scope of practice as a PT and OT, so you could use it to start improving your patient outcomes from this week onward.

This guide will get you started on this journey, but be sure to also take advantage of my free masterclass that gets consistently great reviews from attendees.

To your success,

Joe Tatta, PT, DPT, CNS
Founder, Integrative Pain Science Institute

A Recap: The Biomechanical Approach to Pain Treatment

As a physical therapist, you go to the biomechanical approach by default because you know that therapeutic exercise and manual therapy can manage pain symptoms.

The biomechanical approach is a restorative approach designed to improve structural stability, tissue integrity, range of motion (ROM), strength, and endurance.

Most of your physical therapy treatment plans likely begin and end with a biomechanical assessment to track patient progress, ensure the course of treatment is working, and help your patients achieve maximum mobility and function.

And we know that it works to improve function! But what about pain? It can lead to some relief, as I'm sure you're aware. Studies show its effectiveness for chronic low back pain, for example.[1] You may have noticed positive outcomes for knee pain and other types of joint pain.

However, the biomechanical approach to pain isn't practical nor 100% reliable. In many ways, it's limited!

Recent developments in the field have tried to reconcile the biomechanical approach with pain science.[2] Yet considering the multidimensional nature of pain, it makes much more sense to take a broad view of pain that encompasses biomechanics as well as other root-cause-based approaches to shift patient pain outcomes in a much more comprehensive way.

This approach can actually allow your patients' body to modulate pain biochemically, eliminate the inflammation and oxidative stress that frequently co-exist with the pain, address the conditions or diseases that increase pain, as well as put their bodies in a position to naturally fight pain between their sessions with you. Plus, it can also help modulate pain perception and mood. These are just some of the benefits of this approach!

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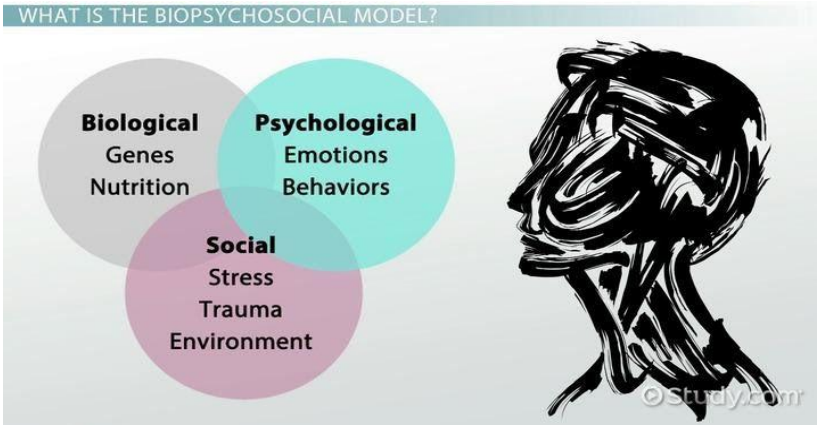
[1] https://scholarworks.gvsu.edu/cgi/viewcontent.cgi?article=1528&context=theses

[2] https://static1.squarespace.com/static/57260f1fd51cd4d1168668ab/t/5b7c64aecd8366508a8d9e20/1534878894758/rbps+2+day+course+outline+2018+and+2019.pdf

The Biopsychosocial Approach To Pain Treatment

The biopsychosocial model has led to the most therapeutic and cost-effective interdisciplinary pain management programs in use now.

You may have already come across it during your training or professional study.



The biopsychosocial approach couldn't be more relevant at this moment because it strongly mirrors advancements being made across field of pain management, but also in psychology, genetics, trauma and nutrition fields. You may have seen this development within your own study.

One of the signs is the emergence of various new "axes": the gut-brain axis, the gut-joint axis, and the gut-pain axis: All of these aspects acknowledge the interdependence of the various

organ systems, and thus recognizing the superiority of a “whole systems” approach towards better and faster results for our patients.
This approach couldn’t be more crucial now: There are a range of processes and mechanisms that affect pain levels and intensity in a given individual that you may not have ever considered, and we need to replace that problem with a new approach.

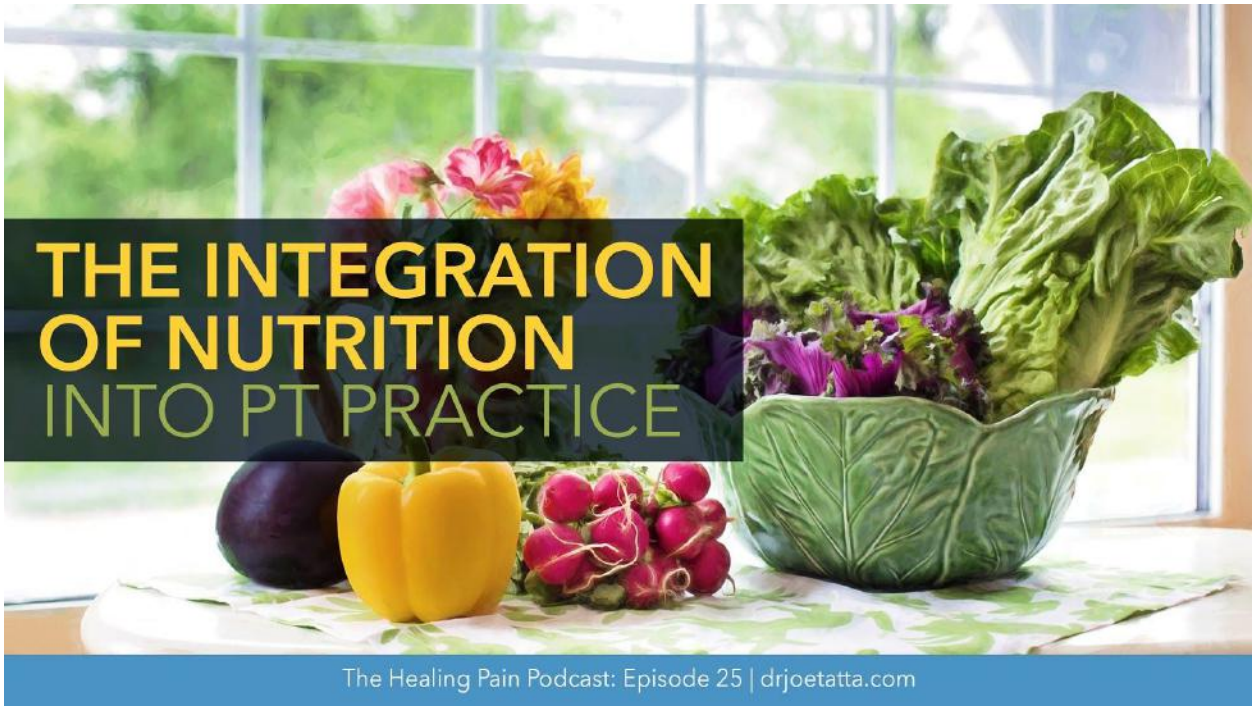
One of the most important mechanisms to watch out for and address is systemic inflammation (and neuroinflammation associated with pain and central sensitization). These triggers are scientifically validated as the main root causes of chronic pain.

Knowing this, I hope you can see that it’s not your fault that you haven’t been getting 100% effective, long-term results with your patients. The biomechanical approach just doesn’t give you an accurate picture of what’s really going on within a patient’s body when they’re in pain – so it can’t lead to an adequate solution. It can’t address major root causes and aggravators of pain, such as systemic inflammation (I’ll cover more on this later).

This new approach views pain as the result of an intricate and dynamic interaction between biological, psychological and social factors. It takes so much more information into account, meaning it is far more likely (compared to the biomechanical approach alone) to help patients alleviate pain and experience vast improvements in quality of life, as well as regain function.

Pain is not just a perceptual phenomenon – because the initial injury (that causes the pain) also disrupts homeostasis. Plus, pain affects each individual in a different way because of the biological and psychosocial compositions at play within the chronic pain population.

Therefore, this approach allows you to gain a much more complete understanding of your patient’s condition and craft a tailored multimodal treatment regimen based on science to boost outcomes.



Functional Nutrition is the biggest lever in this model. Science shows us that optimizing nutrition can reduce pain in many ways. Specifically, considerable emerging evidence affirms that nutrition can improve quality of life and clinical outcomes in patients with chronic pain.[3]

For example, a recent review pointed to the nutritional interventions that can improve the pain experience via their indirect inhibitory effects on prostaglandin E2 and via the attenuation of mitochondrial dysfunction.[4] In trials, specific nutrients and foods have been shown to improve inflammatory pain and reduce pain severity.[5,6] And this is just the beginning!

This body of evidence and further study has formed the basis upon which I built the 5-step functional nutrition method that I use and teach for chronic pain. Before we look at each one in turn, it's important for you to know that all of the following steps are within your scope of practice as a PT!

Okay, let's take a look at the 5 steps that I use, one by one.

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[3] https://www.ncbi.nlm.nih.gov/pubmed/27994480

[4] https://www.researchgate.net/publication/334284869_Insights_on_nutrients_as_analgesics_in_chronic_pain

[5] https://www.ncbi.nlm.nih.gov/pubmed/17335973

[6] https://www.ncbi.nlm.nih.gov/pubmed/30195882

Nutrition

There is a direct and strong link between nutrient intake and pain. One of the ways this manifests itself is in patients with metabolic syndrome, diabetes and/or obesity. Neuropathic pain is a common side-effect of developing these conditions.

As an example, there is a strong association between obesity and pain, because of the ability of excess adipose tissue to increase inflammation levels. Obesity is also linked to knee pain, osteoarthritis, low back pain and general musculoskeletal pain, as I'm sure you're aware.[7]

But you can see the obesity-inflammation connection in the studies that focus on the relationship between C-reactive protein (CRP) and increased pain intensity and pain interference in women.[8] In men, obesity also raises the inflammatory CRP biomarker, but we are yet to see how this relates to pain, which is generally experienced more often and more intensely by women.[9]

You can also see how diet and pain are associated in the research regarding glucose regulation and chronic pain. Diabetics who don't follow the most advanced healthy eating recommendations can begin to expand their need for physical therapy interventions because of this, and in the long-run, they may need increased access to pain solutions as the symptoms of peripheral neuropathy begin to develop.

I go into a lot more detail about the scientific evidence behind pain and nutrition in my free masterclass – where I also cover the findings related to those with metabolic syndrome, as well as the research into how chronic inflammation and neuroinflammation plays a key role in chronic pain and central sensitization.

Based on several meta-analyses of nutrition interventions for chronic pain (the gold standard of scientific evidence), nutrition really does have a significant effect on pain reduction.

Nociception

Nociception is the detection of noxious stimuli and the transmission of encoded information to the brain.[10] It's the sensory nervous system's response to certain harmful (or potentially harmful) stimuli – but in primary and secondary hyperalgesia, the increased excitability of nociceptors in the periphery and the central nervous system, respectively, can increase how much pain a person feels.

[7] https://healthengine.com.au/info/obesity-and-pain
[8] https://www.ncbi.nlm.nih.gov/pubmed/27486843
[9] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5404887/
[10] https://academic.oup.com/bja/article/87/1/3/304226

Yet contrary to how the case might appear initially, the pain is not always caused in full solely by the underlying injury or another physical trauma, but how the body and brain are able to deal with it longterm. The neurological pathways can amplify the nociceptive signaling over time in a way that can be confusing to both patient and practitioner.

So how can we reduce nociception in hyperalgesia with nutrition? This is one of the areas that I discuss in my free masterclass... including the specific nutrients you are probably highly familiar with that can reduce a susceptibility to chronic pain development and the dosage needed to reduce NSAID consumption in certain patients, and much more.

Biome

Another contributor to chronic pain lies in the microbiome. Digestive imbalances can drive inflammation via an unhealthy microbiome and damage gut function and digestion.

For example, did you know that the gut microbiome is an important modulator of visceral pain? Recent evidence suggests that gut microbiota may also play a crucial role in many other types of chronic pain, including inflammatory pain, fibromyalgia, low back pain, headache, opioid tolerance and neuropathic pain.[11]

I know it might seem unusual, but this is such an essential area of study if you're interested in solving chronic pain problems in your patients!

Many signaling molecules derived from gut bacteria, such as their metabolites and neuromodulators, act on their receptors and regulate peripheral and central sensitization, which then mediates the development of chronic pain.[10] Gut microbiota-derived mediators also serve as critical modulators for the induction of peripheral sensitization, (directly or indirectly) regulating the excitability of primary nociceptive neurons. And in the central nervous system, these microbiota-derived mediators may also regulate neuroinflammation.[10]

To back up these findings, several studies suggest that negative changes in the gut microbiome can contribute to chronic inflammation.[12]

[11] https://doi.org/10.1016/j.bja.2019.07.026
[12] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6267105/

This is an exciting area because research into the microbiome and its effect on the body in distinct areas is at an all-time high. Where should you begin with incorporating this information into your treatments? Begin with nutrition and diet. Diet plays a main role in microbiome composition, while altered microbiomes can be seen in the people who often suffer from chronic pain: those with fibromyalgia, osteoarthritis, and CNS diseases such as multiple sclerosis and spinal cord injury.[13]

Are you using this data in your practice? If not, join my free webinar here to begin learning how to use these tools right away to help more patients with their pain.

Barrier

A proper intestinal barrier is crucial for overall good health. As you might know, the gut barrier can be compromised as a result of medications, toxins, a poor diet, gut dysbiosis or stealth infections, along with other factors such as gluten sensitivity (which, by the way, has been proven to aggravate painful neuropathy[14]).[15,16]

Excitingly, academic research is making discoveries hard and fast about how a compromised gut barrier can lead to diseases, from allergies to autoimmune disease, and how it can impact chronic inflammation.[17,18] In fact, one of the reasons why people with increased gut permeability suffer from joint pain may be that a "leaky gut" can cause systemic inflammation.[19] Further evidence shows the natural consequences of how the causes of a leaky gut lead to disease down the road.

For example, due to the standard American diet, we're now all at risk of developing autoimmune diseases. And people who are taking opioids or NSAIDs (and have undergone surgery) are even more at risk, probably because certain medications as well as surgery, can cause increased gut permeability, according studies.[20,21]

Studies also show that patients with primary fibromyalgia and complex regional pain syndrome have intestines that are more permeable, yet the reasons behind this remain unclear.[22] The important piece of the puzzle is that now that you know, you can work to solve the root causes of enhanced gut permeability and thus lower systemic inflammation and in turn one of the

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[13] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5385025/
[14] https://www.sciencedaily.com/releases/2018/02/180228160432.htm
[15] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4253991/
[16] https://www.ncbi.nlm.nih.gov/pubmed/19805376/
[17] https://www.ncbi.nlm.nih.gov/pubmed/29803708
[18] https://www.ncbi.nlm.nih.gov/pubmed/27634186
[19] https://www.medicalnewstoday.com/articles/326117.php
[20] https://www.ncbi.nlm.nih.gov/pubmed/25407511
[21] https://www.ncbi.nlm.nih.gov/pubmed/19148789
[22] https://www.ncbi.nlm.nih.gov/pubmed/18540025

prime contributors to chronic pain. Again, I talk about how you can do that during my free masterclass.

Brain

There are five communication routes between gut microbiota and the brain, so a healthy gut naturally affects the brain in a physiological, behavioral and cognitive manner.

I go through all of these routes during my free masterclass, but let's take a look at just one of them now: the gut-brain-gut axis. In this axis, one of the important mediators within the nervous system and between neurons, as well as other cell types, are neuropeptides.[23]

Research has shown that neuropeptides such as substance P, somatostatin and corticotropin-releasing factor are likely to play a role in bidirectional gut-brain communication – and current efforts are being focused on explaining their role in carrying information from the central nervous system to the gut, and back via four different pathways.

One way they might be able to do this is because apart from operating as neurotransmitters, many biologically-active peptides also function as gut hormones. This means that they can target the same cell membrane receptors and have the same or similar biological implications.[15] This is important in pain.

Let's look at an example: Neuropeptide Y (NPY) is found at all levels of the gut-brain, and the brain-gut axis, so NPY could control the impact of the gut microbiota on inflammatory processes, pain, brain function and behavior!

Then what about the blood-brain barrier, the vagus nerve, and the central nervous system?

An interesting view of this was presented by Owein Guillemot-Legris and Giulio G. Muccioli in their investigation into why diet-induced obesity creates different levels of neuroinflammation based on the type and duration of the diet used.

Their review of the neuroscience trends in this area includes the findings that increased fatty acid intake induces the activation of immune cells and an inflammatory response in many organs including adipose tissue, liver, pancreas, and muscle.

[23] https://www.ncbi.nlm.nih.gov/pubmed/24997035

These mechanisms go way beyond the hypothalamus, and if diet can induce neuroinflammation throughout the body, it's only logical that diet can undo it, body-wide.

And yet this is just the beginning of how pain manifests itself in the body. You also need to explore how inflammatory mediators in muscles, the liver, adipose tissue and the systemic circulation are contributing to the burden. There is a lot to consider, but there are nutritional tools you can use to address them all. I go into this and other relevant neuroscience that you should know during the free masterclass.

Finally, let's take a look at a case study so you can see these mechanisms and this new approach in action.

Case Study: Margaret

One of my patients, Margaret, first reported that she was in pain in 1995. She was out taking her daily two-mile walk and all of a sudden, she started having intense pain down her lower back hip and the side of her leg. It reminded her of sciatic nerve pain, but she knew that this time, that wasn't the problem.

She found a seat and sat down for a while, hoping the pain would ease. After waiting for a long time, she realized that this pain wasn't temporary. Margaret hobbled home. When she arrived home, Margaret found that she couldn't climb the stairs of her split-level home. Her husband put her straight into their car and they drove to the ER.

The hospital staff had to roll her in on a gurney. Yet after taking a few X-rays to understand what damage had occurred, they found nothing. Margaret was prescribed some muscle relaxants and sent home with recommendations to rest for two days. Unfortunately, the pain continued and began to spread to other parts of her body.

Her doctor later suggested that Margaret might have fibromyalgia, and sent her to a rheumatologist.

Over the course of many years, the only help she was offered was medication, yet the pain continued to get worse. Margaret took Flexeril and Klonopin, but began gaining weight, having problems with her digestion, and she felt awful.

She also took an antidepressant for sleep although she had no signs of depression or a history of depression.

Later, she was prescribed a medication for Parkinson's disease, Gabapentin, and various other

types of medications which didn't improve her symptoms and led to skin rashes.

Margaret began to feel hopeless, crying on a regular basis. Finally, 22 years after her fibromyalgia diagnosis, she was prescribed opioid medication.

All the while, Margaret's physical function was declining. It was difficult for her to get out of bed in the morning, walking was more laborsome, and going up a flight of stairs was like scaling a mountain. Finally, she had to use a walker and only walked within her home.

When Margaret came to see me, I reviewed her diet and educated her about the connection between her pain and her eating habits. At first, Margaret thought that she had a healthy diet but once she started the anti-inflammatory diet I recommended for her, she reported that everything changed.

With a little education, Margaret understood how food can be medicine, where to look for the sugar that is hidden in food, and which foods are inflammatory for her. She finally learned how to nourish her body and heal her pain.

Today, Margaret no longer needs a walker, she walks independently and walks 2 miles per day for fun. She says that life is so good that her and her husband took a 10-day cruise recently, and enjoyed every minute of it!

Best of all, she finally weaned herself off those prescription meds! And needless to say, she's one of my best advocates talking about how diet and nutrition can impact pain.

Best Next Steps

As a practitioner, I know that you already have a lot on your plate. However, learning how to integrate functional nutrition elements into your typical treatment plan takes much less time than you might imagine.

Functional Nutrition will help you become known as an exceptionally-skilled practitioner in the treatment of chronic pain. That expert positioning naturally leads to better patient outcomes and a faster-growing practice. Doing this is also an important way to increase your referrals, generate higher revenues and boost your job satisfaction and professional reputation.

If you're feeling burned out by repeat calls and observing how patients suffer long-term, wouldn't you love to have all the information at your fingertips regarding how they can truly resolve the root cause of their pain?

To go much deeper on *How to Reverse Pain, Inflammation and Chronic Disease Using Functional Nutrition*, join me for my free masterclass where I'll share so much more than I'm able to share here about how you can begin helping people overcome pain, improve function and avoid the side-effects of pharmaceutical medications, invasive surgery and interventional procedures.

There is an ample body of evidence that supports a functional nutrition approach for pain, and I'll go into the best of it with you during the free masterclass. I will also provide you with the most effective way to apply functional nutrition in your practice to improve your patient outcomes, regardless of your experience.

With the rising rates of autoimmune disease, joint replacements, spinal pain, surgeries and other pain-related problems in the U.S. now, this is the perfect time to become a leader in the area of integrative pain care.

I'm excited to share what we have developed at the Integrative Pain Science Institute. Grab something you can use to take notes, because I have a lot of knowledge I can't wait to share with you. I'm certain that it will change how you work with pain patients right away.

WATCH THE FREE MASTERCLASS NOW

Put your confusion and frustration to rest – there ARE solutions for your patients' chronic pain!

To learn how to apply functional nutrition to your practice, watch the free on-demand masterclass right now.

Joe Tatta, PT, DPT, CNS
Founder, Integrative Pain Science Institute

About Joe Tatta, PT, DPT, CNS

Dr. Joe Tatta is one of the pioneering experts in lifestyle interventions for treating persistent pain.

A unique combination of physical therapist, nutritionist, and ACT trainer, he has 25 years of experience in physical therapy, integrative models of pain care, leadership and private practice innovation.

He holds a Doctorate in Physical Therapy, is a Board-Certified Nutrition Specialist and has trained extensively in Acceptance and Commitment Therapy.

Dr. Tatta is also the Founder of the Integrative Pain Science Institute, a company dedicated to reinventing pain care through education, research and professional training.

In 2017, Joe was a key member of the APTA task force expanding nutrition as part of the scope of practice for physical therapists. He is chair of the Physiotherapy SIG at the *Association for Contextual Behavioral Science*, the parent organization of Acceptance and Commitment Therapy.

He also volunteers his time on the New York Physical Therapy Opioid Speakers Bureau and the New York Physical Therapy Association Opioid Alternative Task Force.

Dr. Tatta is author of the bestselling book, Heal Your Pain Now and host of The Healing Pain Podcast, featuring interviews and free training from respected pain experts.

Ready to explore an evidence-based understanding of what works for people in pain, and receive the guidance to incorporate it into your everyday care? Begin by watching the free masterclass from Joe Tatta here.