

Living Well with Chronic Pain through Mindful Yoga

By Jim Carson and Kimberly Carson

Chronic pain (CP) is pain that has persisted for 3 or more months.¹ Often, such pain is the result of multiple causes rather than a single type of disorder. Pain interferes with sleep in most people, which compounds their pain and related fatigue. Activities are often strongly affected by this combination. The net result is profound suffering that often includes reduced mobility, loss of strength, immune impairment with increased susceptibility to disease, dependence on medication, and reduced ability to carry out one's social roles as family member, caregiver, friend, and employee.

The problem is widespread: at least 116 million American adults are afflicted by CP, more than the combined number of those affected by heart disease, cancer, and diabetes.¹ Pain is the primary reason people seek medical care, and the economic impact is enormous. CP is estimated to cost up to \$635 billion each year in medical treatment and lost productivity in the U.S.¹ Yet FDA-approved drug therapies have limited effectiveness for most CP conditions, and such medications are often accompanied by addiction potential and other significant side effects.^{2,3}

An Opening for Yoga Therapy

Only recently have Western researchers begun to demonstrate yoga's effects on persons suffering from persistent pain, including those with chronic low back pain, fibromyalgia, osteoarthritis, migraines, carpal tunnel syndrome, kidney failure, and cancer-related pain.⁴⁻¹² As research-based evidence for yoga's potential for alleviating CP accumulates, receptivity to yoga therapy is growing among MDs, nurses, physical therapists, and other standard medical treatment providers. In fact, the prestigious Institute of Medicine has recently emphasized the need for innovative approaches for coaching patients in pain self-management and coping skills, including yoga, mindfulness

training, and other complementary therapies.¹³

Our team recently conducted a unique international Internet survey of 2,543 fibromyalgia patients.¹⁴ Of these, 59% had attended at least one yoga class and 80% wanted to try yoga. This data is consistent



with other studies showing yoga has drawn the interest of people with CP from many cultural backgrounds.¹⁵

Special Challenges in Teaching Yoga to People with Chronic Pain

To effectively teach yoga to people with CP, it is crucial that yoga therapists understand the unique challenges they will encounter with these students. CP is a very complex experience that subsumes many influences beyond tissue damage or musculoskeletal imbalance.¹⁶ The many complications of CP include central sensitization—neurological changes that lead to abnormal, long-lasting sensitivity to and amplification of pain—which is only one of variety of neuroplastic changes that are related to the development and maintenance of CP. (See Central Sensitization sidebar for details.) Leading scientific experts propose that CP should be understood and treated as a distinct disease process that is quite different from acute pain caused by tissue damage.^{16,17}

Central Sensitization

Central sensitization is a set of changes in the central nervous system associated with the development and maintenance of CP.¹⁸ Specific anatomical alterations, especially at the cellular level, occur in the dorsal horn area of the spinal cord and in the brain. These changes result in three major abnormalities: 1) *allodynia*: the generation of pain sensations from non-harmful stimuli, such as light touch, due to substantive long-lasting increases in the excitability of spinal cord neurons and corresponding lowering of pain thresholds accompanied by reductions in pathways that act to inhibit pain; 2) *hyperalgesia*: heightened sensitivity to and prolonged aftereffects from painful stimuli; and 3) *secondary hyperalgesia*: the production of pain from non-injured tissue due to expansion of the receptive field of a set of neurons. The combination of these various changes leads to “wind up,” a persistent state of high reactivity in the central nervous system that maintains pain even after initial injuries may have healed. Central sensitization is not only a major contributing factor in conditions such as fibromyalgia and irritable bowel syndrome, but is thought to be active to some extent in all CP conditions.

Additional influences, which research indicates predispose individuals to develop CP, are prior experiences of trauma, abuse, or significant anxiety or depression. It is important for yoga therapists to understand that a history of trauma is much more common in people who develop CP than in the wider population.¹⁹ Moreover, even in the absence of such prior experiences, the emotional, cognitive, and social impact of living in constant pain substantially raises the risk of developing mental health disorders.²⁰ Furthermore, due to neurological linkages, heightened emotional reactivity amplifies somatosensory processing of pain.²¹ Other complications come from the fact that CP often impairs memory, concentration, and other cognitive processes and that kinesiophobia

(fear of movement) is highly prevalent in people living with CP, driven by concern that almost any movement will aggravate their pain.^{22,23} An important finding of our survey of women with fibromyalgia was that such fear is a common reason that these women do not attempt yoga exercises.¹⁴

Mindful Yoga

Appropriate asana practice is likely to be therapeutic for people with CP in several ways, including induction of the relaxation response,²⁴ which can alleviate pain and emotional distress, and by generating an invigorating effect on mental and physical energies that can alleviate fatigue and improve balance and strength^{4,25}—two functional deficits that are common in people with CP. However, the manner of teaching asanas needs to be tailored to CP.

During a pause in the posture, we ask: “What do you notice? What waves of sensation, emotions of the heart, stories in the mind?” When a limitation is encountered in a posture, we suggest: “Can you—for a moment—allow this experience to just be here without resisting?”

Beyond asana practice, there is a great deal more that the yoga tradition offers that is very valuable. In *Bhagavad Gita: A New Translation*, author Stephen Mitchell states: “Physical sensations—cold and heat, pleasure and pain—are transient: they come and go; so bear them patiently.”^{26, p48} How does one really live this teaching? And how can we convey this wisdom in a practical, accessible way so that people with CP can discover authentic relief? We believe that the deeper yogic teachings—including how to relate to difficult sensations, thoughts, and emotions—are essential for yoga to be optimally effective for helping people to have fulfilling lives despite CP.

In the following paragraphs we will draw on examples from our Mindful Yoga program that illustrate ways to weave yogic wisdom into yoga therapy sessions. In 2000, inspired by the work of Jon Kabat-Zinn,^{27,28} we developed an eight-

week course called “Yoga of Awareness.” We have conducted rigorous randomized controlled trials of this program at Duke Medical Center and Oregon Health & Science University. These studies have documented reductions in pain, more energy for valued activities, better sleep, and lasting improvements in mood in people living with fibromyalgia and cancer-related pain.^{4,7,29} Furthermore, a recent pilot study we completed provided quantitative sensory-testing evidence of partial reversal of central sensitization in fibromyalgia patients.³⁰

Mindful Yoga as we teach it aligns with the practices of yoga therapy in that it doesn't just teach yoga asana but emphasizes meditation and other practices to cultivate mindful awareness in daily life. We explore traditional topics such as the principles of simple being (*sat*), awareness (*chit*), love (*ananda*), acceptance (*tapas*), and skill in action (*karmasu kaushalam*).

We also address modern concerns, such as the physiological underpinnings of mind–body stress reactivity and how yoga may have beneficial effects on stress-related problems.

Applying Yoga Practices for Optimal Coping

Paul had suffered a work-related injury more than a decade before we met him. The injury led to unremitting chronic pain, primarily in his back and hips, and eventually to permanent disability. He had undergone several extensive spinal surgeries that actually worsened his pain, resulting in the diagnosis of “failed back syndrome.” In addition, he was in a motor vehicle accident that injured his ribs several years after his work-related injury, after which every breath he took hurt. We began at first to work with him one-on-one and focused on very careful guidance to find a breathing rhythm that did not elicit pain.

Being able to comfortably breathe again was a huge relief for Paul. Next he signed up for an eight-session Mindful Yoga group program in which he was introduced to a series of very gentle modified asanas and a meditation practice that cultivates the ability to rest in simple being (the familiar, immediate sense of just being present at any given moment). A turning point happened half-way through the program. During the asana portion of the session our instructions focused on learning to relate to all bodily sensations from a careful, accepting, nonreactive perspective. As Paul was going through a flow movement, suddenly he was gripped by a very intense surge of pain. We asked him to pause just as he was and for a few moments to do his best to let the sensations arise and move in whatever way they might. As he did that, a huge wave of fear arose, and an image of his father's face flashed in his mind's eye. His father had often been physically abusive toward him. Tears flowed for a few moments, and then the pain dropped to a level that was much easier to tolerate. The following week, during the *satsang* portion of the class he shared that as he continued to practice being with whatever was arising, he began to have insight into how his life-long guarding in response to fear of his father was contributing to his pain. Gradually over that week his pain levels dropped significantly, he began to have more energy and to be able to do more, and his mood brightened considerably. He said, “I am learning how to be my own best friend. When I rest in simple being, I can let the anxiety wave wash through and learn how to ride it.”

Paul's story illustrates several important points about what ingredients are required for Mindful Yoga to be deeply therapeutic. First of all, in this approach asana practices are adjusted according to the particular CP concerns of the individual or group. (See Modifications of Poses for a Specific Condition: Fibromyalgia). Most often a titration process is needed, starting with very easy, gentle movements and then very gradually building up the strength, flexibility, balance, skill and confidence necessary for more challenging poses. We have often heard yoga therapists say that the first time they taught a yoga class to people with CP, they had no idea that what they were asking students to do was way too much. This is also reflected in another finding from our fibromyalgia survey: concerns about the

physical demands of postures, including yoga-induced pain, were frequently cited as reasons women quit attending yoga classes.¹⁴ To minimize negative reactions in clients, yoga therapists need to closely monitor and intervene when they notice facial expressions, verbal signals (such as sighs or grunts), or awkward or inhibited movement that indicate students are struggling to execute instructions.

Modifications of Poses for a Specific Condition: Fibromyalgia

In our first fibromyalgia clinical trial, we introduced a series of low-intensity, low-impact yoga poses that were modified for common pathophysiologic changes in fibromyalgia.³¹ The sequence included self-massage, warm-ups, table, mountain, mountain with sun arms, breath of joy, warrior 1 flow, chair pose, downward-facing dog on chair, sphinx, modified locust, child's pose, supine core strengthening, supine pigeon, supine thoracic twist flow, bridge, knees to chest, and corpse. Students were also introduced to a restorative version of legs-on-a-chair with pelvis support and a twist over a bolster. Modifications included minimizing eccentric and repetitive muscle activities to reduce muscle micro-trauma, slow transition from lying to standing due to fibromyalgia-related changes in the autonomic nervous system, and adapting standing poses to sitting or lying poses to minimize peripheral pain generators such as knee osteoarthritis. Foam blocks were used to reduce wrist pain or carpal tunnel symptoms in certain poses. The yoga therapist highlighted the need for gentle practice when one's body is challenged by illness, and students were encouraged to work according to their limits rather than rigidly adhere to concepts about how postures must be performed.

Second, the integration of mindfulness cues and the application of other yogic principles (e.g., noticing simple being) into asana instructions ensures that yoga poses serve not simply as healthy physical movements but also as a forum for developing nonreactive awareness of bodily sensations, including pain. This enhances students' ability to gain insight into reactions such as fear of movement or guarding in the musculature and to shift out of these often subtle patterns. During a pause in the posture, we ask: "What do

you notice? What waves of sensation, emotions of the heart, stories in the mind?" When a limitation is encountered in a posture, we suggest: "Can you—for a moment—allow this experience to just be here without resisting?"

Third, the most crucial element of Mindful Yoga is that asana practice is complemented by substantive engage-

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ment in meditation and other yogic practices. Typically, each 2-hour session includes (1) approximately 40 minutes of gentle poses; (2) 25 minutes of mindfulness meditation; (3) 10 minutes of pranayama techniques (individual tailoring may be needed if breathing hurts); (4) 20 minutes of relevant didactic presentations, including how to "ride the waves" and how to distinguish between actual events and stories our minds have created; and (5) 25 minutes of *satsang*/group discussions of challenges or insights experienced during the week. Emphasis on these additional practices provides people with CP with many effective tools for learning to accept and learn from pain and other stressful experiences, so as to begin to recognize clearly what choices contribute to more wellbeing versus more suffering.

Lastly, deeper yogic teachings are not left as abstractions. A variety of practical strategies are introduced for applying these teachings to shifting ways of relating to pain, fatigue, emotional distress, and other difficulties. Examples of strategies for working directly with pain²⁹ include

- Watching pain sensations in a nonreactive way to see if they shift or remain the same.
- Breathing into the area where the pain or discomfort is felt.
- Reconnecting clearly with simple being, while letting the pain be as it is.
- Engaging attention elsewhere in your here-and-now environment—clearly noticing what you see, hear, touch, or smell-without making any effort to push the pain away.

For people with CP, learning powerful ways to cope is the key that allows them to keep pain at a manageable level and resume pursuing a rewarding and enjoyable life. A comprehensive yoga practice that includes meditation and study of yogic wisdom can re-unite us with an unfathomable source of energy, and bring about a truly liberating shift in how we relate to pain and life itself. **YTT**

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