



Mind-Body Practices

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What Are Mind-Body Practices?

Mind-body practices are activities defined by their focus on interactions between the brain/mind, body, and behavior, and their aim to improve well-being and quality of life, with possible health benefits (Garland et al., 2019). Some of these practices involve body movements (e.g., techniques such as pilates, tai chi, yoga, dance therapy), controlled breathing (e.g., hypnosis, meditation, yoga) and/or therapeutic touch. A commonality of these practices is to work with the ability of the brain and mind to modulate physical functioning or bodily perceptions and promote better health. Some of these practices involve the experience of a non-ordinary state of consciousness (e.g., trance state) (Timmermann et al., 2023), whether this state is an explicit tool of the intervention (e.g., hypnosis, meditation) or more of a by-product the therapist might use or not (e.g., art therapy, guided imagery, yoga). These practices are typically administered or taught by a trained practitioner with encouragements to practice autonomously as they can be used to improve the repertoire of strategies for symptom management and self-care. Importantly, while the potential benefits of mind-body practices are generally acknowledged to improve global well-being, recommendations for their implementation in clinical practice must be based on demonstrated efficacy and, ideally, on empirically supported theories of mind-body interactions. Some of these practices focus more on the Mind, i.e. on cognitions and emotions to improve an individual's physical and psychological function (such as cognitive behavioral therapy (CBT) or more on the Body continuum (such as massage) and are covered in other fact sheets.

Mechanisms of Action of Mind-Body Practices

There are two main approaches to establish mechanisms of mind-body practices for pain management. One focuses on the study of processes engaged by the mind-body intervention itself and aims to provide a broader conceptual framework to explain how the intervention may produce a variety of effects, including improvements in pain. The second is centred on the targeted pain outcomes by providing complementary measurements relevant to the underlying pain-related processes (e.g., nociceptive physiological activity, inflammation) to assess criterion validity, beyond self-reports of pain relief. Scientific understanding of mechanisms underlying the effects of mind-body practices is at its infancy, but notable advances have been made on several fronts.

Given the diversity of mind-body practices, no single unifying scientific theory is likely to account for all possible effects on health. Many approaches involve focused attention on sensations or body movements, including those of respiration, the engagement of the brain executive functions underlying the meta-awareness of mental contents and the cultivation of a non-judgmental stance characteristic of mindfulness-based approaches or other contemplative practices (Timmermann et al., 2023). Accumulating evidence suggests that these practices may produce improvements in the autonomic and hormonal stress responses, in immune, inflammatory, and epigenetic activity, and in telomerase regulation, with changes observed in brain morphology and function occurring with intensive or long-term practice (Muehsam et al., 2017). The available evidence provides a plausible theoretical framework that justifies testing their efficacy in pain management.

One approach that has been investigated more thoroughly over several decades is hypnosis. Specific techniques have been adapted to pain management and are supported by experimental studies exploring the underlying mechanisms. A meta-analysis has provided strong evidence that hypnosis reduces acute pain perception and physiological responses evoked by nociceptive stimuli (Thompson et al., 2019)(Fernandez, Urwicz, Vuilleumier, & Berna, 2022). Functional imaging studies have shown that hypnosis engages brain regions underlying executive control systems and can modulate brain responses to painful stimuli (Landry, Lifshitz, & Raz, 2017). Fewer mechanistic studies have been conducted in chronic pain populations, but the available evidence reveals interesting modulatory effects in the corticolimbic network, a functional system associated with the emotional/motivational aspects of pain and contributing to pain chronicity (Bicego, Rousseaux, Faymonville, Nyssen, & Vanhauzenhuysse, 2022). These studies provide plausible mechanistic evidence that mind-body practices, and hypnosis in particular, may help improve chronic pain management.

Clinical Evidence in Favor of Mind-Body Practices in Chronic Pain

There is a large pragmatic use of mind-body practices in an effort to self-manage pain, despite limited evidence of the benefits (Lee, Crawford, & Hickey, 2014). However, an important variability in the evidence at hand can be underlined, depending on the specific therapy under scrutiny and the treated pain condition, as further detailed below.

Here we will briefly present some of the most validated techniques, as an illustration of the research at hand, and without aiming at being exhaustive. Hypnosis, meditation and yoga have the strongest scientific support among mind-body practices for chronic pain. Research has shown that, when compared with standard care, hypnosis can deliver meaningful pain relief, both in adult (Langlois et al., 2022; Milling, Valentine, LoStimolo, Nett, & McCarley, 2021; Pathak, Sharma, & Jensen, 2020) and pediatric (Tome-Pires & Miro, 2012) patients. There is some evidence of medium size effects on both pain severity and interference in patients with cancer (Sheinfeld Gorin et al., 2012), and on pain intensity and function in adults with knee osteoarthritis (Selfe & Innes, 2009). It is interesting to note that there is some preliminary evidence that a group format could be an effective delivery system for teaching hypnosis for chronic pain management (McKernan et al., 2022). There is also strong evidence for short-term effectiveness and moderate evidence for long-term effectiveness of yoga for chronic low back pain (Anheyer, Haller, Lauche, Dobos, & Cramer, 2022), as well as an impact on frequency and intensity of tension type headaches (Anheyer, Klose, Lauche, Saha, & Cramer, 2020). There is some

low-quality evidence that mindfulness meditation is associated with a small decrease in pain (Hilton et al., 2017), which at least for low back pain, is short lived (Schmidt & Pilat, 2023). A systematic review and meta-analysis of mind-body practices for patients with chronic pain under opioid therapy found moderate to large effect size improvements in pain outcomes for meditation and hypnosis (Garland et al., 2019). A recent systematic review of studies on mind-body practices for fibromyalgia, found some low-quality evidence of favorable effects on pain in comparison to usual care (Theadom, Cropley, Smith, Feigin, & McPherson, 2015). The findings showed very low-quality evidence for biofeedback, relaxation-based, and movement therapies, and no advantage for mindfulness, in comparison to usual care controls for specific groups of patients. Overall, the effect sizes fall in the medium range in pain reduction at best (Theadom et al., 2015).

There are important caveats that must be underscored that involve methodological challenges and optimization (See Factsheet Generation and Appraisal of Evidence for Integrative Approaches to Pain Management). The methodological quality of the studies can be problematic (e.g., small sample size) or reported as such (e.g., request for full blinding or placebo control as in pharmacological trials, although this might not be fully appropriate (Hohenschurz-Schmidt et al., 2023)). For many mind-body approaches, high quality clinical data is still needed to determine efficacy and generalizability across diverse chronic pain populations. However, one should keep in mind that an absence of proof of efficacy on a specific criterion (e.g., pain intensity) is not a proof of inefficacy more globally.

Based on this evidence, different mind-body techniques can be recommended for pain management.

Who are the Practitioners?

Different individuals can be trained in using mind-body practices. In most countries, the titles of mind-body practitioners are unprotected (e.g., any person can call herself or himself “hypnotherapist” or “coach in mindfulness”).

There is a progressive development of standards of practice, university teaching, and professional associations setting strict criteria of practice. The ethical recommendations of these health care professionals’ associations are for the practitioners to remain in their area of training and expertise (e.g., ethical code of the International Society for Hypnosis). Consequently, only practitioners with a knowledge of chronic pain should treat these patients with mind-body practices. This sets a high standard, as depending on the region, it can be difficult to find, for example, a yoga therapist with specific knowledge of chronic pain. Nevertheless, the aim of integrative care is to work at such a level of shared expertise,

or to build it progressively through patient-centered discussions. Patients need to be educated regarding these different levels of understanding of their condition, and supported in decision making, when different practitioners are available.

Finally, while mind-body practices are considered globally safe when practiced by well-trained health care professionals, there are some potential risks of injury in physically demanding practices (e.g., yoga postures). Mental health risks associated with mindfulness interventions have also been discussed in recent years (Britton, Lindahl, Cooper, Canby, & Palitsky, 2021) although not in the specific context of pain therapy.

How Can These Practices be Included in an Integrated Care Approach?

The decision to incorporate mind-body practices into an integrated care approach to manage chronic pain should be based on a careful consideration of risks and benefits, including the needs and preferences of the patient (that are related to her or his beliefs and attitudes about chronic pain and its management). Arguing against or in favor of these practices with the patients and/or the family without informing them of the risks and benefits may compromise the relationship and the treatment outcomes. Therefore, it is important that the patient be part of the team that decides what is best. Moreover, it is key to empower the patient to make decisions and encouraging her or him to report on the results (positive and negative) of these practices so that new, better decisions can be made to help achieve the patient's goals.

Although mind-body practices have been around and widely used in healthcare for decades, their full integration in pain management, especially within primary care, is far from being accomplished. Increased education and training of healthcare professionals to be comfortable and well-equipped with an interprofessional network and dialog is required. In addition, systematic changes to reduce clinic time pressure, and to facilitate reimbursement policies, could also help diminish barriers and facilitate the integration of well-validated mind-body practices into healthcare. Integrative primary care practices or pain clinics, where mind body practices such as hypnosis, mindfulness groups or chi gong classes are on offer for specific EBM-supported pain management indications could also facilitate the access to and integration between practices and practitioners.

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