

EDITORIAL



## Can we just talk our patients out of pain? Should pain neuroscience education be our only tool?

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Over the last 15–20 years, clinicians have been encouraged to shift their management of chronic musculoskeletal pain from a biomedical/biomechanical approach to a more biopsychosocial approach. To perform such shift, the information provided to the patient with chronic musculoskeletal pain has had to evolve from the biomechanics and pathoanatomy of involved structures toward an explanation of the physiological and psychological processes involved in the pain experience [1–3]. The latter has become known as pain neuroscience education (PNE), and the aim is to help patients reconceptualize their pain [4]. But is *educating* patients with chronic pain enough? Can we just talk our patients out of pain? Should Pain Neuroscience Education be our only tool?

Teaching people about the biology and physiology of pain has been called ‘*explain pain*’ [5,6], ‘*therapeutic neuroscience education*’ [7,8], ‘*pain neurophysiology education*’ [9–11], and more recently, ‘*pain neuroscience education*’ or PNE [3,12,13]. The term PNE has been used mostly in clinical practice and in educational sessions, but does not tell us the whole picture. It has the neuroscience component, but contemporary pain education does not just talk of neuroscience. PNE aims to alter patients’ inappropriate beliefs about pain and reduce maladaptive behaviors. This contrasts to the biomedical approach in which pain is seen as the result of (local) tissue damage, implying that the painful region needs to be protected and that patients need to restrict work or activities. All these aspects may reinforce patients’ misbeliefs, negative emotions or fear-avoidance, factors known to strongly favor the maintenance of pain and disability [14–16]. In this editorial, we discuss the role that PNE may have in clinical practice.

### How is PNE used in clinical practice?

PNE refers to educational interventions with the aim of increasing the understanding of the biopsychosocial

nature of pain and the adaptability of the body. During PNE, patients with chronic pain are taught that their problem may have less to do with their tissue health and more to do with the functioning of the nervous system and the brain. Metaphors and stories are used to explain, in simple terms, how pain actually works in order to reconceptualize their pain [4,5,17]. Several topics are covered so that patients will see their pain differently after PNE. It is important to modify the content of the information according to the patient’s individual concern or unhelpful beliefs about pain, so that pain can become less threatening for them [18]. PNE can be delivered in a variety of formats (single versus multiple sessions, one-to-one versus group sessions, written information versus face-to-face contacts with interaction versus online videos, etc.) [3,13,19]. Finally, PNE is usually delivered as part of a comprehensive package that includes exercise, sleep hygiene and goal setting [20].

### What are the effects of PNE?

Multiple studies have shown that PNE significantly impacts patients’ fear-avoidance beliefs and pain catastrophizing [3,13,21]. So PNE seems to achieve the goal of reconceptualizing pain. However, a recent systematic review with meta-analysis found treatment effects for PNE versus control had low clinical relevance in the short and medium term for pain and disability [13]. Hence, the use of PNE as sole intervention is not recommended [5,20]. When PNE is combined with other, more active treatment interventions such as exercise, better results are observed regarding pain and disability [3,9,22]. Although a recent Cochrane review found that the quality of the evidence examining physical activity and exercise for chronic pain was low [23], the studies included in that review did not include PNE or provide any pain education to the study participants. It is evident that if PNE is teaching patients with chronic pain that their tissues/somatic structures are not likely the cause if their



persistent pain problem, and that activity and exercise will provide significant overall health benefits, then PNE+ should encourage them to move or engage in activities of daily living, despite the pain [3,24].

### What are the clinical implications?

PNE should be more than just 'talking to patients about their pain'. When talking to patients about their pain, the goal is to let them understand and appreciate that they can move, they can participate in activities, even if they feel some pain. Pain in these patients is considered to be the result of an overactive pain system, and not the result of continued tissue damage. As clinicians, we cannot simply '*talk the patients out of their pain*'. We need to provide the opportunities for patients to experience activity and exercise without any significant flare up of their pain. They need to be shown they can regain their daily life again. Therefore, it is important to **combine PNE with other treatment modalities such as exercise and even manual therapy, and this has been termed, PNE+** [25,26].

In several studies, PNE was combined with exercise therapy [9,22,27]. A randomized controlled trial from 2002 showed that combining exercise, manual therapy and neurophysiological education is effective for chronic low back pain [28]. A recent systematic review confirmed the importance of a multimodal approach including pain science education to obtain better compliance to exercise therapy with more positive outcomes at long-term follow-up [29]. In other studies, PNE was combined with manual therapy [21,30,31]. Providing manual therapy with PNE may seem somewhat surprising as the goal of PNE is to change the patient's focus from local tissues in the painful region as the source of their pain to the brain, as the latter interprets all inputs. Hence, clinicians have mistakenly believed that PNE should be a fully hands-off approach [25,26]. By providing manual therapy to address any local dysfunction in the painful region, the patient could wrongly interpret this as a confirmation that the problem is a local one (i.e. at the painful region). Although not fully understood as yet, the effects of manual therapy have been attributed to mechanical, neurophysiological and psychological effects [32,33] and not to local/biomechanical effects alone. Indeed, data from a meta-analysis support the central effects of manual therapy, seen as widespread changes (e.g. reduced pressure pain thresholds at remote sites) following manual therapy [34]. It is therefore extremely important to provide a coherent approach to patients when discussing the different treatment modalities. A strategy might be to include a neuroplastic explanation when discussing the proposed effects of manual therapy techniques instead of focusing solely on the biomechanics [31].

### Conclusion

PNE is an excellent tool that can be used in the management of patients with a variety of musculoskeletal pain conditions. It is necessary that clinicians take the time to understand what pain might mean for their patients and talk it with their patients. However, clinicians should be aware that PNE is not a 'magic pill' and that it is only the first step in the management of a patient. The next one is to establish together with the patient a coherent program of care in which the whole panel of physical therapy modalities can be used and make sense.

### Disclosure statement

No potential conflict of interest was reported by the authors.

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