# Nonpharmacologic Pain Management in Inflammatory Arthritis

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**KEYWORDS**

• Pain • Inflammatory • Arthritis • Nonpharmacologic • Spondyloarthritis • Rheumatoid • Psoriatic • Ankylosing

**KEY POINTS**

- An integrative approach to pain in inflammatory arthritis improves pain outcomes for patients.
- Many non-pharmacologic modalities of pain management have an evidence base for their efficacy in inflammatory arthritis.
- Maintenance of non-pharmacologic modalities of pain management is often required for ongoing benefit.

## BACKGROUND

Inflammatory arthritis represents a group of chronic conditions comprised of rheumatoid arthritis (RA) and spondyloarthritides (SpA) that together affect approximately 3% of the global population.[1] Uncontrolled symptoms of inflammatory arthritis reduce quality of life in multiple domains; chief among these, in prevalence and degree of effect, is pain.[2–7] Pharmacologic therapies with antirheumatic drugs form a cornerstone of effective treatment of these diseases with a goal of controlling symptoms and arresting irreversible skeletal changes, but pain can prove refractory to antirheumatic drug titration.[5,8–10] Most measures of disease activity in inflammatory arthritis reflect a patients' experience of their disease by incorporating a subjective rating of disease activity, which is strongly influenced by pain.[5] Treating residual chronic pain pharmacologically introduces avoidable risk of potentially serious side effects, begging the question of what nonpharmacologic modalities are best suited to address the symptoms of pain and disability that patients with inflammatory arthritis experience.[11]

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The experience of pain in chronic disease is a complex process that is influenced by multiple domains of health.[12] The biopsychosocial model of health provides a framework through which to address those domains that contribute to pain in inflammatory arthritis.[12] This framework seeks to address the subjective experience of objective biologic events through biologic, psychological, and social lenses.[12] Antirheumatic drugs target the biologic etiologies of lived disease activity, but psychological and social domains require interventions beyond pharmacologic treatment to address appropriately.

## SELF-EFFICACY: THE FOUNDATIONAL PRINCIPLE

Self-efficacy is a mutable, domain-specific belief held by patients in their ability to effectively achieve goals by performing specific behaviors.[13–15] This belief has influences on patients' behaviors, thought patterns, and emotional reactions.[16] A higher degree of perceived self-efficacy has been shown to be correlated with improvements in many factors of health-related quality-of-life measures including pain intensity, coping capacity, response, and adherence to treatment.[17–22] Reduced levels of perceived affect and control (contributors to self-efficacy) have been associated with loss- and potential reversal-of-effect of nonpharmacologic pain treatments.[23] Bandura[13] proposed that self-efficacy is built on four major sources of information: (1) performance accomplishments, (2) vicarious experience, (3) verbal persuasion, and (4) physiologic states. These foundational sources of information can be fostered to improve self-efficacy, with ripple effects to improve perceived pain, disability, and ability to engage with other nonpharmacologic treatments.[13,24]

Self-efficacy's multifactorial cause offers choice in approaching its development. Implementation of a system of patient-centered communication has been shown to significantly improve self-efficacy.[25] Group activities, such as structured walking programs in patients with arthritis, promote self-efficacy via vicarious experience and personal achievement, demonstrating self-efficacy benefit at 6 weeks compared with similar, self-directed programs.[26,27]

Some psychosocial therapies targeted at pain management have shown correlation with benefit to self-efficacy, although teasing out the cause-effect relationship in this case is particularly difficult given the feedback loop between effective effortful therapies and self-efficacy.[14,28] Development of self-efficacy via personal experience has the added benefit of generalizability to other situations previously compromised by preoccupation with personal inadequacies.[13] Both cognitive behavioral therapy (CBT) and mindfulness-based interventions (MBI) have shown significant benefit in this domain.[14]

## COGNITIVE BEHAVIORAL THERAPY

CBT is a form of therapy that seeks to modify thoughts and behaviors to give patients a sense of control over their emotions and symptoms.[29] It typically encompasses a series of individual or group sessions in which coping skills, such as relaxation, imagery, activity pacing, cognitive restructuring, and goal setting, are taught so that they can be used in the clinical and home settings.[12,30]

### *Rheumatoid Arthritis*

CBT is among the most well-studied psychological pain interventions and demonstrates more robust evidence for pain control than MBIs or patient education (PE).[28] CBT has shown significant improvement in pain and self-efficacy in

patients with RA.[28,31–33] Systematic review has found this effect only in therapy plans that include 6 or more weeks of CBT with conflicting evidence of persistent benefit at long-term follow-up of 6 to 12 months.[33,34] Prolonging the effects of CBT may be possible through "booster" sessions months after completing initial therapy.[30,35]

Internet-based CBT has been developed to improve accessibility to patients who are unable to engage with traditional CBT.[36] Patients with RA have shown improvements in quality of life and self-efficacy after pain-focused Internet-based CBT, but evidence has not shown improvements in disability, mood, or pain.[37–39]

### *Spondyloarthritides*

There are little data looking at CBT in SpA specifically. One small study of patients with ankylosing spondylitis (AS) treated with CBT showed a moderate beneficial effect on subjective ratings of pain.[40] Fibromyalgia shows significant overlap with psoriatic arthritis (PsA) and other forms of SpA, and has been shown to see short- and long-term improvement in pain with pain-directed CBT.[27,41–43] CBT has shown benefit in chronic pain generally but proving its efficacy in SpA requires further study.[44,45]

## MINDFULNESS-BASED INTERVENTIONS

MBIs typically take the form of training programs that seek to equip patients with the tools to practice nonjudgmental awareness of one's present experience and encourage openness, curiosity, and acceptance of that experience.[46] The underlying principal is to reduce reactivity to unpleasant internal phenomenon and promote a reflective engagement with one's experience.[46] Two of the most common MBIs are mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT), which typically follow an 8-week format of weekly meetings that incorporate meditation and talk-therapy to build skills that can continue to be practiced at home.[46]

### *Rheumatoid Arthritis*

Several forms of MBI have demonstrated improvement on pain in patients with RA. Internal family systems therapy and mindful awareness and acceptance therapy have directly measured improvement in pain scores in this population.[24,47,48] These interventions take different approaches to a similar goal, internal family systems focusing on fostering an internal dialogue by treating one's parts as subpersonalities, and mindful awareness and acceptance therapy focusing on building skills to reduce the effect of pain and enhance positive affect.[47,49] A head-to-head trial of mindful awareness and acceptance therapy against CBT in patients with RA found that CBT offered a greater effect on pain except for in patients with comorbid depression, which showed greater effect from mindful awareness and acceptance therapy.[48]

Studies of MBSR in patients with RA have shown improvements in self-efficacy, well-being as measured by the Psychological Well-Being Scales, patient global assessment score, tender joint count, swollen joint count, and disease activity.[14,50,51] Although these studies did not measure effect on pain directly, pain is an important contributor to patient global assessment, providing a potential proxy for pain's measure.[52]

There is a paucity of evidence regarding the effect of MBCT on pain directly in patients with RA. In fact, many MBCT trials on patients with chronic pain focus on measuring changes in patients' interactions with pain (eg, pain catastrophizing, pain acceptance) rather than direct pain scale.[53,54] MBCT does show improved patient

interaction with pain and several measures of self-efficacy (eg, control over disease) in cases of chronic pain.[53–55] An Internet-delivered module of MBCT has demonstrated similar benefit, expanding access and reducing barriers to engagement.[55] Dalili and Bayazi[56] showed improvement in patients with RA after MBCT with regard to illness perception as measured by the Illness Perception Questionnaire and psychological symptoms in patients with RA but did not measure pain outcomes directly.

### *Spondyloarthritis*

Data on MBIs, specifically on patients with SpA, are limited, and neither MBSR nor MBCT have been evaluated in a randomized trial setting in patients with SpA. A study of mixed inflammatory arthritis patients including patients with AS and PsA treated with an MBI called Vitality Training Programme (a program that incorporated 15 weeks of semiweekly therapy and a 6-month "booster" session to incorporate creativity into mindfulness-based teaching) showed evidence of significantly improved self-efficacy, but not pain.[57]

Illness perception, which is improved by MBCT in patients with RA, is correlated with back pain in patients with axial spondyloarthropathy (AxSpA).[56,58] If the gains in illness perception are generalizable to the SpA population, MBCT may prove an effective avenue of pain control in SpA. A case-report describes one patient with PsA who experienced subjectively improved pain control and ability to manage pain 6 months after an 8-week MBSR course.[59] Although this report did not conduct an objective comparison of pretreatment and post-treatment measures, in the absence of additional evidence of MBIs effect in SpA, it provides guidance toward potentially fruitful avenues of further investigation.

## PATIENT EDUCATION

Disease-focused PE provides tools for patients to develop self-management skills, use lifestyle changes, and claim responsibility for day-to-day symptom management.[60] EULAR recommends disease-centered education routinely in inflammatory arthritis.[61]

### *Rheumatoid Arthritis*

Data are conflicting on whether patients with RA derive significant improvement in pain and self-efficacy from disease-based PE.[12,62–64] When improvements in pain are observed after disease-based PE the effect size is generally smaller than that of CBT or MBI.[12,65] Structured self-management programs that incorporate self-regulation and coping tools teaching with PE show greater improvements in pain compared with group education alone.[14]

Programs such as the Arthritis Self-Management Program and Self-Management Arthritis Relief Therapy mail-based program promote increased self-efficacy by providing tools for patients to engage with their disease through teaching a combination of behavioral and discussion-based techniques.[14,15,66,67] Their use has been shown to significantly improve pain, disability, and self-efficacy in patients with RA.[67,68] The benefit of these programs is long standing, with one study suggesting that the Arthritis Self-Management Program may show pain benefit for 4 years after completion.[69] The generalizability of this finding is questionable because a systematic review of 31 randomized controlled trials evaluating PE in RA found no significant effect on pain at follow-up.[30] Whether that loss of long-term effect is caused by heterogeneity of PE programs or reversion to a mean is difficult to determine based on the available evidence.

### *Spondyloarthritis*

There is a dearth of evidence regarding the effect of PE on pain in SpA.[61,70] What evidence does exist suggests that there is a significant unmet need for SpA-based PE as measured by an Educational Needs Assessment Tool.[70,71] Generally, women with inflammatory arthritis display an increased desire for education over men.[70,72] Mixed cohorts of patients with assorted inflammatory arthritides found small short-term improvements in pain and self-efficacy after PE programs.[73,74] Further study into effective forms of PE in SpA may aid with program selection to achieve optimal effect.

## BIOFEEDBACK

Biofeedback is a form of therapy in which patients are provided with information regarding the intensity of a physiologic response under autonomic control to develop the ability to modulate that response.[12,34] Biofeedback, with and without CBT, has been shown to increase self-efficacy in nonspecific chronic pain.[75]

### *Rheumatoid Arthritis*

Thermal biofeedback provides skin temperature information to patients to assist with development of control over peripheral temperature via vasodilation.[76] Effectively developing this ability requires training, but when focused on temperature elevation at their most painful joint, patients with RA have shown improved measures of pain.[32,34,76,77] Technological advancement continues to introduce new modalities through which to deliver biofeedback with one study of virtual reality–based biofeedback in a small, RA-predominant cohort of patients with rheumatologic disease showing improved pain scores after virtual reality biofeedback training.[78]

### *Spondyloarthritis*

As with many other nonpharmacologic interventions, there is a paucity of SpA-specific research regarding biofeedback. Conflicting evidence exists regarding the efficacy of biofeedback in controlling psoriatic skin disease, but some studies have shown that biofeedback, either with or without concomitant CBT, have improved skin disease in psoriasis subjectively and as measured by Psoriasis Area and Severity Index.[79–81] Skin and joint disease activity do not correlate well in psoriatic disease, but skin activity is included in some experimental measures of disease activity in PsA, and biofeedback's potential efficacy in skin disease provides an open avenue for further investigation in its effect on rheumatic manifestations of psoriatic disease.[82]

## EXERCISE AND PHYSICAL ACTIVITY

Physical activity and exercise are routinely recommended in the treatment of RA, PsA, and AxSpA.[2,9,83] The benefits of exercise extend beyond pain associated with inflammatory arthritis, but the appreciable benefit it can offer to patients with inflammatory arthritis pain can serve as an additional motivation to engage with this generally health-enhancing behavior. In patients with chronic pain exercise should follow a slow and gradual progression to reduce the risk for flares of pain that may lead to loss of program engagement.[30]

### *Rheumatoid Arthritis*

Aerobic exercise has shown a small but significant improvement in pain in patients with RA, whereas resistance training showed a statistically insignificant trend in the same

direction.[84–86] Under supervised conditions these programs were not found to cause deleterious effects, such as short-term increased pain, debility, or joint damage.[84] A combination of modalities has been shown to offer long-lasting benefit, with one mixed aerobic exercise and resistance training program combined with weekly group-based discussions showing an improvement in pain that persisted at 2-year follow-up.[87] Low-impact modalities, such as hydrotherapy, yoga, and tai chi, have conflicting evidence that shows either no or small effects on pain scores in patients with RA.[12,88]

### *Spondyloarthritis*

Although some physical activity is beneficial in SpA, patients with AS with jobs requiring dynamic flexibility consisting of bending, twisting, stretching, and reaching showed greater functional limitations compared with patients without those demands.[89] Exercise programs have low-quality evidence for pain control in SpA, although they can show improvement in physical function and disease activity.[89,90] The benefits offered by exercise are generally greater when performed in a supervised group setting, such as physiotherapy, as opposed to independent at home.[89] Intensive, residential spa-based multidisciplinary exercise therapy showed strong results that persisted for 6 months, although the time and cost required for these therapies may prove prohibitive for some patients.[90] Low-impact exercise modalities, such as hydrotherapy and Baduanjin (a form of mindfulness-based physical movement akin to tai chi) have shown improvement in patient-reported pain in patients with AS, although the amount of evidence is limited.[91,92]

## MASSAGE

Massage is a form of manual physical manipulation that seeks to improve pain and physical function through reducing muscle tension, increasing circulation, and stimulating the parasympathetic system.[12] It has been shown to improve pain scores immediately after intervention in noninflammatory chronic pain conditions, although there is little support for long-term effect.[93]

### *Rheumatoid Arthritis*

Joint-targeted aromatherapy massage showed improvement in pain scores after 6 weeks of treatment in patients with RA, although there was no long-term follow-up.[94] Similar effects on pain have been seen in adult and juvenile RA after shorter courses of massage therapy, sometimes to near resolution immediately postintervention, although again, these studies lack long-term follow-up data.[94–96] Although patients with RA have derived pain benefits in hand- and knee-targeted massage, foot-targeted massage has not demonstrated similar effect.[94,95,97] The intensity of massage may be related to the effect size, because moderate-intensity massage has been shown to be superior to light massage in improving pain.[95] There is ancillary benefit to range of motion, mood, and anxiety after massage.[93] The long-term effect of massage on these domains has not been well-studied in this population and warrants further investigation.

### *Spondyloarthritis*

Case and small cohort studies have shown improvements in pain, fatigue, and stiffness in patients with AS.[98,99] Deep tissue massage showed a comparatively large improvement in lower back pain in patients with AS as compared with lower intensity therapeutic massage.[99] Massage has not been studied specifically in patients with

other SpAs, but is recommended conditionally by the American College of Rheumatology based on data supporting its use in osteoarthritis and RA.[83,100] There have been case reports that describes disastrous cervical spinal cord injury in patients with AS during massage leading to paralysis and death, but these are rare events and massage is generally considered safe when medical conditions are disclosed and appropriate precautions are taken (eg, avoiding the cervical area in patients with AS or atlantoaxial instability).[101–103]

## ORTHOTICS/SPLINTS

On the whole, evidence for the efficacy of supportive garments, such as wrist splints or foot orthoses, in inflammatory arthritis is conflicting.[104,105]

### *Rheumatoid Arthritis*

Studies have showed that resting and active wrist splinting offers little benefit in the short to medium term in patients with RA.[104] Despite this lack of improvement, patients generally prefer to continue wearing wrist splints after 2 months of use.[104] A single, small study with longer follow-up has shown significant improvement in hand pain that emerged at 90 days of treatment with night splinting in patients with RA, raising the possibility that the effect is simply delayed rather than not present.[106] In patients with RA, certain types of orthotics (extradepth shoes with semirigid insoles) have shown improved pain when walking and climbing stairs, and more pain-free walking time compared with control subjects, whereas other types of orthotics have shown no improvement.[104,105]

### *Spondyloarthritis*

There is no evidence evaluating the use of orthoses in patients with SpA.[107,108] Splinting has been used in juvenile PsA with positive effect on maintaining joint position, but its effect on pain was not directly evaluated.[109]

## BALNEOTHERAPY

Balneotherapy (also known as spa therapy or mineral baths) involves soaking in an indoor pool at a temperature between 31°C and 36°C and is sometimes combined with heated mud or other natural peloid packs.[110,111] Balneotherapy is generally safe and has been used for centuries as part of treatment of orthopedic and musculoskeletal conditions.[110]

### *Rheumatoid Arthritis*

There is inconsistent evidence regarding pain improvement after balneotherapy in patients with RA.[112] Effect seems influenced by selection of liquid medium, with mineral baths showing significant improvement in pain that persisted at 8 weeks, and radon-carbon dioxin baths showing delayed improvement in pain that only surfaced 6 months after therapy, whereas Dead Sea salt water and tap water baths did not show a similar effect.[110] The quality of evidence supporting these findings is low, hampered by small sample sizes and methodologic flaws (eg, lack of intention to treat analysis, lack of double blinding).[110]

### *Spondyloarthritis*

Balneotherapy has been found to improve pain and mobility in patients with AxSpA to a greater and more consistent degree when compared with patients with peripheral inflammatory arthritis.[111] Patients with AS and PsA have shown balneotherapy to be

an effective adjuvant for pain treatment, whereas patients with enteropathic arthritis have shown improvements in global activity scores.[111,113] Selection of balneotherapy modality is less well associated with degree of effect in SpA as compared with RA.[111] The benefits of balneotherapy in SpA disappear over 6 to 15 months.[89] It should be noted that balneotherapy should be avoided in acute arthritides, such as reactive or gouty arthritis.[111]

## ACUPUNCTURE

Acupuncture is a millennia-old practice that originated in ancient China.[114] It operates on the principle that energy called *qi* flows through the body and can cause illness through imbalance.[114] The goal of acupuncture is to correct the flow of *qi* along channels called meridians with the use of hair thin needles placed in the skin.[114] In chronic pain generally there is conflicting evidence for the efficacy of acupuncture.[115,116] Although acupuncture is generally safe, there are reports of rare, potentially serious complications of acupuncture, such as infection or, in a worst-case scenario, death secondary to pneumothorax, making trained, experienced practitioner selection particularly important.[114]

### *Rheumatoid Arthritis*

The study of acupuncture in patients with RA is more robust in the Chinese population than in the Western world.[117] Western-focused systematic reviews have found conflicting evidence regarding acupuncture's effectiveness in controlling pain in patients with RA.[118,119] The quality and number of western studies available for review was limited.[118,119] A similar systematic review incorporating Chinese studies showed a preponderance of reported improvements in pain in Chinese, but not western studies, which may indicate a lack of generalizability.[117]

More recently, a well-powered randomized controlled trial of verum (traditional, meridian based) acupuncture against sham (nonmeridian based) acupuncture and a waiting list nontreatment group showed improvement in pain in sham and verum acupuncture, with a dramatically increased degree of effect in verum-arm patients.[120] Verum acupuncture via nontraditional means, such as laser or bee venom therapy, has demonstrated improvements in pain, suggesting the location of therapy is an important part of the observed effect.[121,122] The long-term effect of acupuncture after completion is unclear, as is the duration of treatment necessary to consistently see effect, although benefit has been observed after 4 weeks of twice-weekly treatment, and 4 to 10 sessions should be considered an adequate trial.[117,120,123]

### *Spondyloarthritis*

The American College of Rheumatology conditionally recommends acupuncture in patients with PsA because of low-quality case-report-level evidence of its benefit.[83,124] Systematic reviews have found that patients with fibromyalgia find improvements in pain after acupuncture, an effect that may be generalizable to some degree in patients with PsA based on the high prevalence of fibromyalgia in that population.[42,125] Again, studies in western literature are lacking with regard to acupuncture in patients with other types of SpA.

## SLEEP

Poor sleep and chronic pain have a bidirectional relationship, in which the exacerbation of one condition often contributes to exacerbation of the other.[126] Addressing

sleep, even in the absence of chronic pain, involves evaluation of physiologic disorders and engagement with cognitive and behavioral therapies that require proactive home practice.[126]

### *Rheumatoid Arthritis*

There is a high prevalence of sleep disturbance (45%–70%) in patients with RA, with patients experiencing higher disease activity demonstrating poorer quality sleep.[127–129] Poorer quality sleep reduces pain threshold and increases pain intensity in patients with RA.[127,130] Sleep is, in turn, negatively affected by RA-associated pain, with up to 42% of that sleep disturbance attributable to RA when compared with noninflammatory disease matched control subjects.[131]

Pharmacotherapy for sleep disturbance lacks consensus or evidence-based algorithms, but nonpharmacologic sleep treatments have been shown to offer large improvements in sleep quality in patients with chronic pain.[127,132] Exercise and biofeedback-based relaxation techniques have shown improvements in sleep quality in patients with RA, and insomnia-focused CBT in patients with RA is currently being investigated, supported by evidence that shows effectiveness in patients with chronic pain.[77,132–134] Brief Behavioral Treatment for Insomnia is another psychological therapy that involves fewer, shorter sessions than CBT and has shown sleep improvement in cases of insomnia, but has not been studied in inflammatory arthritis specifically.[12,135]

### *Spondyloarthritis*

Patients with SpA experience significantly more frequent sleep disturbance than control populations, with poor quality sleep in 84% of patients with PsA and 80% of patients with AS.[136–138] Pain and degree of sleep disturbance are directly linked in PsA, although causality is difficult to determine.[139,140] Nighttime pain in inflammatory arthritis creates a feedback loop with sleep disturbance, and patients with AxSpA experience more subjectively severe nighttime stiffness and pain as compared with patients with RA.[141]

Treatments to improve sleep quality in SpA have not been well assessed. Exercise has been shown to improve sleep quality in patients with AxSpA, although the evidence for long-term effect is mixed, and the size of the effect seems to be small.[136,142]

## DEPRESSION

Depression is a common comorbidity in patients with RA and SpA, with prevalence far outstripping that of a healthy age-matched population.[143–145] Depression negatively influences pain experience and interferes with coping.[12] Complementarily, pain is one of the strongest predictors of depression in RA, and patients with inflammatory arthritis with comorbid anxiety and depression are more likely to experience increased symptom burden including pain.[12] Depression treatment is beyond the scope of this review but referral for treatment of comorbid depression synergistically improves pain management in patients with inflammatory arthritis.

## INEFFECTIVE THERAPIES

### *Magnets*

Static magnet therapy is marketed as providing pain relief in chronic pain conditions, and one survey of patients with RA, osteoarthritis, and fibromyalgia suggests that up to 28% of that pooled cohort has trialed static magnetic therapy.[146] Systematic review of comparable, randomized, placebo-controlled studies of static magnets in chronic

pain did not provide evidence of analgesic benefit.[147] Studies evaluating static magnet therapy in patients with RA specifically showed a difference in baseline versus 4-week pain scores in patients with unipolar and quadrapolar static magnetic field therapy for the knee without any statistical significance between the two.[148] These interventions were not compared with sham treatment, limiting the evaluation of potential placebo effect.[148] Static magnet therapy has not been directly evaluated in SpA, but in the absence of evidence for its efficacy in other chronic pain conditions there is little rationale for its use unless the evidence base changes.

### *Chiropractic*

There is inadequate evidence to support the effectiveness of chiropractic adjustment in controlling pain in inflammatory arthritis, although patient satisfaction is reportedly higher in chiropractic intervention than acupuncture, osteopathic medicine, and massage.[30] Given the lack of evidence for improved outcomes in chiropractic treatment, the consequences of poorly controlled SpA or RA can lead to disastrous results during chiropractic adjustment, such as vertebral fracture or dislocation.[102,149,150] Patients with inflammatory arthritis should undergo chiropractic adjustment, particularly involving the cervical spine, with exceptional caution.

## SUMMARY

Nonpharmacologic modalities offer a diverse bevy of options to address pain in inflammatory arthritis, allowing patients and providers to engage in shared decision making to find options that are enticing and accessible. Many nonpharmacologic interventions offer the added benefit of developing self-efficacy by offering opportunities for patients to claim ownership over management of the symptoms of their disease. Self-efficacy potentiates the effect of self-directed nonpharmacologic interventions, creating a virtuous cycle of building effective patient self-management.

There is a general paucity of research regarding nonpharmacologic treatment effects on pain in SpA, a ripe opportunity to discover differential effects between SpA and RA as seen with balneotherapy. Effective nonpharmacologic interventions effect on patients' pain, and the effect's duration (when studied) was typically less than 12 months. Some interventions that have used booster sessions have shown extension of that effect, suggesting that nonpharmacologic interventions require maintenance in chronic diseases, much like their pharmacologic counterparts.

## CLINICS CARE POINTS

- It is of paramount importance to have an action plan that includes multidisciplinary, integrative management of pain in patients with inflammatory arthritis.
- There is evidence for improved pain in patients with RA with CBT, MBI, biofeedback, aerobic or combined exercise, massage, hand splints, orthotics, and balneotherapy.
- There is evidence for improved pain in patients with SpA with physiotherapy, massage, and balneotherapy.
- Investigation has been unable to demonstrate strong evidence of impact on pain with static magnet therapy or chiropractic adjustment in patients with SpA or RA.
- Addressing chronic pain modulating issues, such as sleep and depression, is an important part of pain management in patients with inflammatory arthritis.

## DISCLOSURE

No disclosure.

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