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# Non-pharmacological treatment of chronic widespread musculoskeletal pain

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Individuals with chronic widespread pain, including those with fibromyalgia, pose a particular challenge to treatment, given the modest effectiveness of pharmacological agents for this condition. The growing consensus indicates that the best approach to treatment involves the combination of pharmacological and non-pharmacological interventions. Several non-pharmacological interventions, particularly exercise and cognitive-behavioural therapy (CBT), have garnered good evidence of effectiveness as stand-alone, adjunctive treatments for patients with chronic pain. In this article, evidenced-based, non-pharmacological management techniques for chronic widespread pain are described by using two broad categories, exercise and CBT. The evidence for decreasing pain, improving functioning and changing secondary symptoms is highlighted. Lastly, the methods by which exercise and CBT can be combined for a multi-component approach, which is consistent with the current evidence-based guidelines of several American and European medical societies, are addressed.

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Many clinicians (and patients) continue to consider chronic pain as an extended version of acute pain. As a consequence, treatments frequently focus on 'fixing' the chronic pain rather than upon its management. Reluctance to abandon the allure of a cure [1] has delayed the broad adoption of combined pharmacological and non-pharmacological management of pain – the standard of care for several other chronic illnesses such as diabetes, cardiovascular disease, hypertension and asthma.

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Non-pharmacological interventions do not share the status ascribed to pharmacological approaches. Limited details are provided in most medical school curricula, reimbursement is typically challenging and multi-million-dollar marketing campaigns – common to pharmacological agents – are missing. The term ‘non-pharmacological intervention’ itself defines this set of interventions by what they are ‘not’ rather than by their strengths. The limited profile of non-pharmacological treatment is unfortunate, given that these interventions often have favourable cost–benefit ratios and effect sizes that rival pharmacological interventions in the management of pain [2,3].

Non-pharmacological interventions, such as cognitive-behavioural therapy (CBT), education and exercise, have substantial efficacy for the management of chronic pain conditions including low back pain (LBP) [4], arthritis (e.g., osteoarthritis (OA) and rheumatoid arthritis (RA)), complex regional pain syndrome (CRPS), [5] chronic pelvic pain (CPP) [6] and conditions such as fibromyalgia (FM) and chronic widespread pain (CWP) [7–9].

Under the rubric of non-pharmacological interventions lies much variability. For example, exercise studies in CWP have addressed activities ranging from calisthenics to belly dancing. Similarly, ‘CBT’, has included everything from traditional cognitive restructuring and behavioural change strategies to medication scheduling. This article helps to clarify the types of non-pharmacological treatments that have the best evidence for use in CWP.

## Exercise

The publication of approximately 80 studies evaluating exercise interventions, multiple review papers, meta-analyses and multiple sets of guidelines [7–9] leave little doubt that exercise is broadly considered to be an effective treatment for patients with FM and CWP. Exercise may be particularly important for improving the health and functioning of individuals with CWP, given that deconditioning and obesity are commonly observed in these patients. In a recent study, Okifuji and colleagues reported that 47% of their sample was obese, while another 30% was overweight. In their study, obesity was related to greater pain sensitivity, less physical strength and worse sleep [10]. The successful integration of exercise can take different forms. Evidence-based ‘exercise’ can be aerobic or more focussed on increasing strength and flexibility; it can be of high intensity and frequency or involve only adding a few steps each day. Exercise can be land- or water-based, can range from whole-body exercise to cycling and involve structured approaches such as Pilates and Tai Chi. This article offers an overview of evidence-based exercise options for the treatment of CWP with practical suggestions to promote successful implementation of an exercise programme.

### *Strength training (anaerobic exercise)*

Strength training seeks to improve overall muscle strength. It is usually an anaerobic activity focussed on using resistance (e.g., weights, machines and resistance bands) to oppose muscle contraction in order to build muscle mass. Anaerobic exercise tends to require high-intensity activity, over a discrete period of time, which leads to improved performance in short-duration activities. Weight lifting and resistance training, as well as isometric exercises such as yoga and various forms of martial arts, are included in this category of exercise.

### *Flexibility training*

Stiffness and reduced range of motion are common complaints in patients with CWP. Stretching and bending target increasing in range of motion, decreasing stiffness and/or minimising risk of injury. These programmes include a thorough warm-up period, to loosen muscles, followed by a systematic series of stretching exercises. Participants are usually instructed to stretch each area to the point just before discomfort is experienced and to hold the position for approximately 10–30 s. Following the stretch, the muscles can be ‘shook out’ and the same stretch is usually repeated.

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