

Supplementary file 3. Included systematic reviews

Acronyms: RCT - randomized controlled trial.

Author, Year	Objective # included studies	Population	Intervention Comparator	Results	AMSTAR 2 overall confidence
Cramer et al., 2013	To systematically review and meta-analyze the effectiveness of yoga for low back pain. 10 RCTs, all on yoga	SAMPLE: 967 participants with chronic low back pain. COUNTRIES WHERE THE STUDIES WERE CONDUCTED: Not informed.	TYPE OF YOGA: Integrated approach to yoga therapy (1); Iyengar yoga (3); Hatha yoga (2); Viniyoga (2); not reported (2). Recommended for regular yoga practice at home + booklets + CD + practice manual + usual care. DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: varied from 30 min to 60 min, between 3 to 24 weeks, with yoga sessions held weekly, once or twice a week. TYPE OF CONTROL: Usual care (2); education (7); self-directed standard medical care (1).	Low back pain A meta-analysis (6 trials, 584 participants) showed evidence in favor of yoga in reducing low back pain in the short and long term. Small magnitude effect. Back-specific disability A meta-analysis (8 trials, 689 participants) showed evidence in favor of yoga in reducing short and long-term back-specific disability. It had a small magnitude effect. Quality of life The results did not show statistical significance for improving health-related quality of life. Adverse events Yoga was not associated with serious adverse events.	Low
Cramer et al., 2017	To systematically assess and meta-analyze the effectiveness of yoga in relieving chronic neck pain. 3 RCTs, all on yoga.	SAMPLE: 88 patients with chronic non-specific neck pain. COUNTRIES WHERE THE STUDIES WERE CONDUCTED: Germany (1), United States (1),	TYPE OF YOGA: Iyengar Yoga (physical postures) (2); yogic mind sound resonance technique (meditation) + physiotherapy (1). DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: Iyengar yoga - Weekly 90 minutes sessions during 9 weeks. Yogic mind sound resonance technique - Daily 20 minutes sessions plus 30 minutes physiotherapy sessions, during 10	Chronic neck pain The meta-analysis revealed evidence of short-term effects for yoga, in comparison with usual care, on the intensity of neck pain and neck pain-related disability. Quality of life and mood There was also an improvement in quality of life and mood, related to improvement in pain. Adverse events Two trials reported adverse events, none severe.	Low

		India (1).	days.		
			TYPE OF CONTROL: Usual care plus self-care manual for 9 weeks (2), 20 minutes of daily supine rest plus 30 minutes of physiotherapy for 10 days (1).		
Langhorst et al., 2013	To conduct a systematic review with meta-analysis of the efficacy and safety of meditative movement therapies (Qigong, Tai Chi and Yoga) in fibromyalgia syndrome. 7 RCTs, 2 on yoga.	SAMPLE: Total not informed. In yoga studies, 83 participants (one of the studies did not declare the number of participants). COUNTRIES WHERE THE STUDIES WERE CONDUCTED: Brazil (1), Spain (1), United States (3), Sweden (2).	TYPE OF YOGA: Yoga of Awareness (yoga + meditation + breathing exercises + group discussion) + DVD + home practice (1); yoga breathing exercises in warm water (1). DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: Yoga of Awareness - Weekly 120 minutes group class during 8 weeks, totalizing 16 hours of intervention. Additional 20 to 40 minutes daily home training, by DVD, performed once a week for 8 weeks. Yoga breathing exercises in warm water - 60 minutes sessions, 4 times a week, during 4 weeks. Total of 16 hours of intervention. TYPE OF CONTROL: Delayed treatment control (1); usual treatment (1).	Pain related to fibromyalgia syndrome Yoga as a meditative therapy with movement, in the analysis of subgroups (2 trials, 88 participants) had beneficial effects in reducing pain related to fibromyalgia. Quality of life and mood It had a significant effect on health-related quality of life and depression (1 trial, 53 participants) at the end of treatment. Adverse events No serious adverse events were reported.	Moderate

Lee et al., 2014	<p>To examine the quantity and quality of research on self-care movement therapies and determine the evidence for their efficacy and safety in the treatment of chronic pain symptoms (ie, severity/intensity of pain).</p> <p>30 RCTs, 13 on yoga.</p>	<p>SAMPLE: Population of yoga studies: 1150.</p> <p>HEALTH CONDITIONS: Patients with chronic low back pain, fibromyalgia, migraine, osteoarthritis, carpal tunnel syndrome or irritable bowel syndrome.</p> <p>COUNTRIES WHERE THE STUDIES WERE CONDUCTED: Not informed.</p>	<p>TYPE OF YOGA: Not informed.</p> <p>DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: There was a wide variety of yoga dosages, ranging from 1 to 72 hours, in periods that varied from 1 day to 24 weeks; one study did not report the dosage.</p> <p>TYPE OF CONTROL: Exercise and self-care book (1); wait list control (2); usual care/standard medical care (4); physical movements plus non-yogic breathing (1); educational self-care group (1); stretching plus self-care book (1); no treatment (1); education control (1); standard care plus use of wrist splint (1).</p>	<p>Chronic low back pain, fibromyalgia and osteoarthritis No meta-analysis was performed. Five studies reported that yoga, in comparison with a passive control condition, proved to be more effective in reducing chronic symptoms of low back pain and pain associated with fibromyalgia. One study demonstrated that both yoga and a stretching program were equally more efficient in reducing chronic low back pain than a self-care group. Two low quality studies showed that yoga was most efficient in reducing osteoarthritis pain and chronic lower back pain when compared to, respectively, no treatment and one educational group. Only one study found that neither yoga nor usual care was effective in lowering chronic lower back pain symptoms.</p> <p>Pain in carpal tunnel syndrome A low quality study found that an intervention based on yoga plus standard care, together with the use of a splint on the wrist, were equally effective in the treatment of pain in carpal tunnel syndrome.</p> <p>Pain in irritable bowel syndrome One study reported that yoga was not an effective option for treating pain in irritable bowel syndrome.</p> <p>Adverse events Two studies reported increased pain and herniated disc.</p>	Critically low
Li et al., 2019	<p>To quantify the efficacy of yoga for treating chronic nonspecific neck pain.</p> <p>10 studies: 2 quasi-randomized</p>	<p>SAMPLE: 686 patients with chronic neck pain.</p> <p>COUNTRIES WHERE THE STUDIES WERE CONDUCTED:</p>	<p>TYPE OF YOGA: Yogasanas (1), Kundallini yoga (1), Hatha yoga (1), Iyengar yoga (1), or not specified (4), yogic mind sound resonance technique + physiotherapy (1), Jyoti meditation (1).</p> <p>DURATION OF SESSION,</p>	<p>Intensity of cervical pain In the subgroup analysis of the meta-analysis of yoga compared to exercises (9 studies, 488 participants) there was a significant difference in favor of yoga. The effects of the comparison between the yoga and pilates groups were not significant, as well as</p>	Critically low

	clinical trials and 8 RCTs, all on yoga.	Germany (3), China (1), Korea (1) United States (1), India (1), Sweden (1), Turkey (1).	<p>FREQUENCY AND/OR DOSAGE: The duration of interventions ranged from 10 days to 12 weeks.</p> <p>TYPE OF CONTROL: Pilates plus isometric exercise (1); pilates plus tai chi and isometric exercise (1); exercise (3); strength training plus evidence-based counseling (1); pilates plus exercise (1) only home-based exercise (1); warm acupuncture (1); physiotherapy plus non-guided supine rest (1).</p>	<p>as yoga compared to complementary and alternative medicine.</p> <p>Disability related to cervical pain</p> <p>In the subgroup analysis of the meta-analysis of yoga compared to exercises (7 studies, 363 participants) there was a significant difference in favor of yoga.</p> <p>There was no significant difference in the comparison between yoga and pilates, as well as between yoga and complementary and alternative medicines.</p> <p>Quality of life and mood</p> <p>There was an improvement in quality of life (3 trials, 434 participants), but there was no significant difference in physical quality of life analyzed in the subgroup (3 trials, 217 participants). There was also an improvement in mood found between yoga and exercise (4 trials, 351 participants).</p>
Morone; Greco, 2007	To evaluate the viability, safety, and evidence for pain reduction in older adults with chronic non-malignant pain in the following mind-body therapies: biofeedback, progressive muscle relaxation, guided meditation, imagery, hypnosis, tai chi, qi gong and yoga.	<p>SAMPLE: 188 participants aged 50 years and over, 2 studies with people aged ≥ 65 years and 6 studies with people under 50 years old.</p> <p>COUNTRIES WHERE THE STUDIES WERE CONDUCTED: Not informed.</p>	<p>TYPE OF YOGA: Yoga (3); yoga + relaxation + education (1).</p> <p>DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: Intervention period/dosage was not specified or varied between 8 and 12 sessions.</p> <p>TYPE OF CONTROL: Wait-list (1); not specified (1); exercise sessions and self-care book (1); usual care sessions plus wrist splint (1).</p>	<p>Pain in osteoarthritis Critically low</p> <p>No meta-analysis was performed. The results were presented in a narrative form and showed evidence that yoga is safe and can reduce pain in older adults.</p> <p>A study (11 participants) showed improvement in pain and physical function measures in the WOMAC Osteoarthritis Index (Western Ontario and McMaster Universities). Another study on pain in osteoarthritis (26 participants) showed improvement in joint sensitivity and hand pain during yoga activity.</p> <p>Three studies on low back pain showed that yoga improves pain, an effect that can persist for up to 3 months.</p> <p>Quality of life and mood</p> <p>Significant changes were found in the quality of life measures.</p>

	20 studies: 3 RCTs and 1 pre-post trial on yoga.				
Skelly et al., 2018	To assess which noninvasive nonpharmacological treatments for common chronic pain conditions improve function and pain for at least 1 month after treatment. 7 non-randomized clinical trials and 1 RCT, all on yoga	SAMPLE: Sample sizes ranged from 60 to 313 (total sample = 1466) of participants with chronic pain. COUNTRIES WHERE THE STUDIES WERE CONDUCTED: United States (5), United Kingdom (1), India (1).	TYPE OF YOGA: Iyengar yoga (4); Viniyoga (2); Hatha yoga (2). Recommended for regular yoga practice at home + booklets + CD + DVD + practice manual + usual care. DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: The duration of yoga therapy varied between studies from 4 to 24 weeks and the number of sessions, from 4 to 48. TYPE OF CONTROL: Exercise (4), wait-list or usual care (2), attention control (education) (5).	Chronic low back pain Meta-analysis showed a favorable result for yoga in pain control, when compared to attention control or wait list, in short (5 trials) and medium term (2 trials). Yoga compared to exercise showed no statistically significant differences in short-term pain. Quality of life When comparing yoga to an attention control, there was no difference in quality of life results. Adverse Events One study reported a case of cellulite in a patient who participated in the yoga intervention.	Moderate
Slade et al., 2007	To determine the effect of exercises to facilitate movements without load on the results of people with chronic non-specific low back pain. 1 RCT, 5 case-control studies. 2 studies on yoga.	SAMPLE: 830 participants. COUNTRIES WHERE THE STUDIES WERE CONDUCTED: Not informed.	TYPE OF YOGA: Viniyoga (1); Iyengar yoga + lectures; handouts + newsletters + home program (1). DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: Not informed. TYPE OF CONTROL: Aerobic and trunk strengthening or without exercises (1); no exercises plus educational booklet (1).	Nonspecific chronic low back pain Meta-analysis (2 trials, 88 participants) showed that yoga, when compared to education/self-care and no exercise, had an effect of great magnitude in medium term (26 to 32 weeks) to control pain, as well as to improve back function.	Critically low

Ward et al., 2013	To examine the effectiveness of yoga on primary outcomes of functional capacity, pain and psychosocial outcomes in musculoskeletal conditions. 17 clinical trials, all on yoga.	SAMPLE: 1626 patients with clinically diagnosed musculoskeletal condition. COUNTRIES WHERE THE STUDIES WERE CONDUCTED: Not informed.	TYPE OF YOGA: Yoga of Awareness (1), Iyengar/Hatha (2), IYT: integrated yoga therapy (1), Hatha (3), Iyengar-based (1), Iyengar (3), Viniyoga (2), IAYT: integrated approach to yoga therapy (2), not reported (2). Ten studies engaged home practice as a component of yogic intervention, providing written instructions, yoga props and audiovisual aids (CD or DVD). DURATION OF SESSION, FREQUENCY AND/OR DOSAGE: The duration of interventions varied between 1 to 24 weeks. Individual yoga: sessions between 40 to 120 minutes, between 1 to 7 times a week. TYPE OF CONTROL: Education (2), wait list and usual care (3), just usual care (4), therapeutic exercise (1), social environment (1), therapeutic exercise or self-care book (1), conventional stretching or self-care book (1), physical therapy exercise (2), standard medical care (1), not reported (1).	Pain in osteoarthritis Two primary studies (276 participants), with a high risk of bias, showed results in favor of yoga compared to therapeutic exercises or usual care. Low back pain Four studies on low back pain were included in the meta-analysis. There was a moderate overall effect in favor of yoga interventions. Functionality in low back pain and fibromyalgia Eight studies were included in the meta-analysis. There was a moderate effect in favor of yoga. Quality of life and mood Positive results of quality of life and mood were found in mild to moderate low back pain groups. Adverse events A herniated disc was reported as a serious adverse effect potentially associated with yoga. Also, increased low back pain has been reported in some patients.	Critically low
Wieland et al., 2017	To evaluate the effects of yoga in the treatment of chronic non-specific low back pain, in comparison to no specific treatment,	SAMPLE: 1080 adults with chronic non-specific low back pain. COUNTRIES WHERE THE	TYPE OF YOGA: Iyengar yoga (5), Iyengar-based yoga (1), Hatha yoga (2), Viniyoga (2), not specified (2). All interventions included meditation, relaxation or breathing exercises, in addition to physical yoga poses. DURATION OF SESSION,	Specific back function A meta-analysis showed favorable results for yoga in comparison to no exercise in the period of 4 to 6 weeks, 3 to 4 months (7 trials; 667 participants; evidence of low confidence), at 6 months (6 trials; 630 participants; evidence of moderate confidence), and at 12 months (2 trials; 365 participants; evidence of low confidence). There was no	Moderate

a minimal intervention (e.g. education), or other active treatment, focusing on pain, function and adverse events.

12 RCTs, all on yoga.

STUDIES WERE CONDUCTED: United States (7), India (3) and the United Kingdom (2).

FREQUENCY AND/OR DOSAGE: For all studies except one, the yoga intervention consisted of one to three yoga classes per week, each class lasting from 45 to 90 minutes. For the remaining study, the yoga group practiced about two hours of yoga postures a day, as well as meditation, breathing, and chanting, and were given lectures on yogic lifestyle. Some studies, in combination with yoga, carried out other interventions: receiving a booklet and usual care (2), usual care (3), usual medical care and usual medications, plus receiving a book about back pain (1), access to medical care (2).

TYPE OF CONTROL: Usual care plus receiving a booklet containing information about handling low back pain (1); no treatment (1); waiting list plus receiving a educational booklet about back pain (1); individually prescribed exercises (1); usual care (3); exercise classes or receiving a evidence-based book with information about self-care strategies (1); exercise classes or receiving a book about back pain (1); intensive one week residential programme of non-yogic physical exercises (1); occupational therapy sessions (1); receiving weekly newsletters about back care (1).

statistically significant difference in the comparison between yoga and exercises regarding back-related function.

Low back pain

A meta-analysis showed results in favor of yoga when it was compared to no exercise in the periods of 4 to 6 weeks (2 trials, 40 participants; evidence of very low confidence), 3 to 4 months (5 trials, 458 participants; evidence of moderate confidence), and at 6 months (4 trials, 414 participants; evidence of low confidence). At 12 months the results showed no statistically significant differences (2 trials; 355 participants; evidence of low confidence). The results indicated a favorable response to yoga in comparison to exercise at 1 week (1 trial; 80 participants), 4 weeks (1 trial; 54 participants), and 7 months (1 trial; 54 participants). The evidence is considered to be of very low confidence due to a very serious risk of bias and imprecision.

Clinical improvement

A meta-analysis showed favorable results for yoga when compared to no exercise in 4 to 6 weeks (2 trials, 141 participants; evidence of low confidence), at 3 months (3 trials, 168 participants; evidence of low confidence), and 6 months (1 trial, 128 participants; evidence of low confidence). There was no statistically significant differences regarding clinical improvement in the comparison between yoga and exercise.

Quality of life and mood

There was an improvement in the quality of life and mood in the practice of yoga compared to other interventions, however the methodological quality of the studies was considered low.

Adverse events

Some studies reported adverse events, but the link between adverse events and yoga was not consistently evaluated. A meta-analysis (6 trials; 696 participants; evidence of moderate confidence) showed that people who practiced yoga had greater risk of adverse events than those in non-yoga groups. There were no statistically significant differences in the comparison between yoga and exercise regarding adverse events. Three studies did not inform the existence or the absence of adverse events.