

**Practitioner-based  
complementary and  
alternative therapies  
for the treatment of  
rheumatoid arthritis,  
osteoarthritis,  
fibromyalgia and  
low back pain**



# Who are we and what do we do?



Arthritis Research UK is the charity leading the fight against arthritis. We're the biggest funder of research in the UK into the cause, treatment and cure of all forms of arthritis and related musculoskeletal conditions. Our work takes the pain away from people with arthritis, keeping them active and doing the things they love. We'll do this by funding high-quality research, providing information and campaigning.

Everything we do is underpinned by research.

*Our report, [Practitioner-based complementary and alternative therapies for the treatment of rheumatoid arthritis, osteoarthritis, fibromyalgia and low back pain](#), is the second in a series of ongoing, commissioned reports in areas of public interest.*

At the back of the report you'll find a glossary of some of the commonly used words. We've [underlined](#) these when they're first used.

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# What's inside?

<b>Executive summary</b>	<b>5</b>
<b>Introduction</b>	<b>6</b>
The use of complementary and alternative medicines and therapies	6
What conditions are considered in this report?	6
How was the information in this report gathered?	7
Classification of complementary therapies	7
What does each section mean?	9
<b>Section 1: Review of evidence</b>	<b>11</b>
Acupuncture	12
Alexander technique	15
Aromatherapy	16
Autogenic training	17
Biofeedback	18
Chiropractic (spinal manipulation)	20
Copper bracelets	22
Craniosacral therapy	23
Healing therapies	24
Hypnotherapy	26
Imagery	28
Magnet therapy (static magnets)	30
Massage	32
Meditation	34
Music therapy	36
Osteopathy (spinal manipulation)	38
Qigong (internal qigong)	40
Reflexology	42
Relaxation therapy	44
T'ai chi	46
Yoga	48
<b>Section 2: Other therapies</b>	<b>51</b>
Crystal healing	52
Feldenkrais	53
Kinesiology (applied kinesiology)	54
Shiatsu	55
<b>Summary</b>	<b>56</b>
<b>References</b>	<b>57</b>
<b>Glossary</b>	<b>65</b>
<b>Contributors</b>	<b>66</b>





## Executive summary

A recent survey found that each year approximately one quarter of the UK population uses complementary or alternative medicine in one form or another, and around one in eight will consult a complementary or alternative practitioner (an osteopath, chiropractor, acupuncturist or massage therapist, for example). Evidence also suggests that the use of complementary or alternative medicine is higher among people with pain or musculoskeletal conditions such as arthritis.

A previous report commissioned by Arthritis Research UK, *Complementary and alternative medicines for the treatment of rheumatoid arthritis, osteoarthritis and fibromyalgia*, focused on products taken by mouth (such as glucosamine, fish oil and various nutritional supplements) or applied to the skin (such as capsaicin gel). Concentrating on the same three conditions, plus chronic low back pain, this second report focuses on treatments delivered by complementary therapists and therapies that use 'devices' (for example, copper bracelets or magnets). We aim to help people with musculoskeletal conditions and healthcare professionals by providing information on the scientific evidence about the effectiveness and safety of these therapies, which are all currently available in the UK.

The report scores each therapy according to their effectiveness, with 1 indicating that the evidence suggests the treatment isn't effective and 5 indicating that there's consistent evidence, from several high-quality trials, that the therapy is effective. Effectiveness is measured in terms of improvements in pain, disability or quality of life. In addition, the safety of each therapy is graded using a 'traffic-light' classification, from green (therapies which we consider relatively safe) to red (therapies for which we would advise caution). No therapies included have a red classification.

Twenty-five therapies are considered in this report, although only 21 have evidence based on randomised controlled trials (RCTs) among patients with the conditions of interest. For those that have been studied, many have only been tested in a single or just a few trials. This makes it difficult to make a definitive conclusion as to whether the therapy is effective or not.

### Rheumatoid arthritis

Rheumatoid arthritis is the least studied of the four conditions examined in this report, with 24 trials including just over 1,500 participants across nine different therapies. Only a little evidence suggests biofeedback, relaxation therapy and T'ai chi are effective, with each gaining an effectiveness score of 2. The other six therapies scored just 1, but all therapies have a green score for safety.

### Osteoarthritis

There were 53 trials, examining 14 different therapies, among nearly 6,000 people with osteoarthritis. Twelve therapies scored 1 or 2, but the evidence is much stronger in support of T'ai chi and acupuncture (which scored 4 and 5 respectively), suggesting that patients may benefit from them in terms of in pain, disability or quality of life. All therapies also scored green for safety, except chiropractic, which has an amber rating.

### Fibromyalgia

There were 50 trials, examining 17 different therapies, among over 3,000 patients with fibromyalgia. Thirteen of the therapies scored either 1 or 2, but there's some promising evidence to suggest that T'ai chi and relaxation therapy may be effective (both had an effectiveness score of 3). Acupuncture and massage were rated even higher, with scores of 4 and 5. All therapies are also rated green for safety except chiropractic, which has an amber rating.

### Low back pain

Low back pain is the most studied of the four conditions examined in this report, with 75 trials, including over 11,600 participants, across 14 different therapies. Eight therapies scored only 1 or 2, but the evidence for Alexander technique and relaxation therapy is promising, with both receiving a score of 3. These therapies are also considered to be safe, and were given a green rating.

Osteopathy was also given a score of 3, but it was given an amber safety rating. This wasn't because of an increased risk of serious side-effects but because minor side-effects are more common. There's also good evidence in support of yoga and acupuncture (effectiveness scores of 4 and 5), and both are considered to be safe, and were given a green rating.

# Introduction

## The use of complementary and alternative medicines and therapies

The World Health Organization (WHO) defines complementary or alternative medicine as ‘a broad set of health care practices that are not part of that country’s own tradition and are not integrated into the dominant health care system’.<sup>1</sup> It has been estimated that Britons spend over £450 million per year on complementary or alternative medicines and treatments, and The Health Survey for England 2005 found the following information:

- 44% of respondents reported using complementary or alternative medicines at some time.
- 26% had used them in the past 12 months.
- 12% had consulted a practitioner in the last 12 months.<sup>2</sup>
- 51% of respondents with pain and 17% of those with various forms of arthritis reported using complementary or alternative medicine in the past 12 months.<sup>3</sup>

In addition, we know that people who choose to use complementary or alternative medicines are more likely to:

- be female, university educated and in employment
- have a longstanding illness
- suffer from anxiety and depression
- regularly use vitamins/supplements.<sup>2</sup>

Although complementary therapies are commonly used, there are still many questions about their effectiveness and safety. Our first review, *Complementary and alternative medicines for the treatment of rheumatoid arthritis, osteoarthritis and fibromyalgia*, focused on products that are taken orally or applied to the skin. This second report considers practitioner-based therapies such as acupuncture, chiropractic, osteopathy and hypnotherapy, and other therapies such as magnet therapy and copper bracelets. The purpose is to provide a resource for patients and healthcare professionals by summarising current evidence on the effectiveness and safety of commonly used complementary or alternative therapies available within the UK.

## What conditions are considered in this report?

As in the first report, we’ve focused on the two most common forms of arthritis, rheumatoid arthritis and osteoarthritis, as well as the chronic musculoskeletal pain disorder fibromyalgia. We’ve introduced information on low back pain for this second report.

**Rheumatoid arthritis** – the most common inflammatory arthritis – is a chronic disease that affects the joints, often in the wrists, fingers and feet. Common symptoms include pain, stiffness and fatigue.

**Osteoarthritis** is an extremely common joint condition and is often referred to as ‘wear and tear’. The joint surface is damaged and the surrounding bone grows thicker. Osteoarthritis most commonly affects the knees, hips, hands and spine.

**Fibromyalgia** is one of the most common reasons for being referred to a rheumatologist. Symptoms include widespread pain, fatigue and sleep disturbance. The condition doesn’t result in any damage to the joints or muscles that can explain the symptoms.

**Back pain** is the most common type of regional pain, and around 80% of the population will experience symptoms at some point. Unlike the other conditions, there are no internationally standardised ways of classifying or diagnosing back pain, so the estimated cases of back pain vary. However, a recent review found that between 18 and 50% of individuals will report back pain in any 12-month period.<sup>4</sup>

For the report, we’ve focused on low back pain. Where possible, we also focus on chronic low back pain (pain that has lasted for three months or longer).

## How was the information in this report gathered?

There are numerous reports of successful treatment using complementary or alternative medicines, and every practitioner has users who are satisfied with the treatment they received. However, this isn't scientific evidence that these therapies work. The only way to scientifically test whether these treatments are effective is to use a randomised controlled trial (RCT), where participants are put into different treatment groups at random. Treatment groups should be similar in all ways except for the treatment of interest (so they should contain the same proportion of men and women, and of employed/unemployed people etc).

RCTs provide the best type of evidence on whether any treatment works. Other types of trial, where participants choose the treatments they take, are very difficult to interpret because those with more serious disease might have opted for one treatment and others with milder disease another. Also, participants who choose their treatment do so because they believe it'll be effective, which might influence how they respond to and evaluate it.

We've conducted a detailed search of published scientific literature and considered all papers on appropriate RCTs published in English before the end of May 2011. We've looked at trials that compared complementary or alternative therapies against the following:

- another therapy
- placebo treatments (where possible)
- usual GP care.

If a number of trials have been conducted, the information may be summarised in a good-quality review. Some reviews gather published trials and comment on the overall weight of the literature in a particular area. However, it's often difficult to find out whether the review authors followed any system when they were searching for information or if their search was in depth, so we used reviews as sources to find any trials that our own search hadn't picked up.

In contrast, a systematic review aims to identify and summarise all literature in a particular area. Although researchers conducting systematic reviews try hard to make sure that all trials have been found, it can sometimes be difficult to figure out exactly what was done, and how. Where there are two or more reviews in one area, the number of trials included may vary depending on the method of finding literature and the dates of the searches.

A Cochrane review is a systematic review and meta-analysis (a technique used to combine the results of several trials to provide one statistical estimate of whether a treatment is effective or not) performed to the highest standards.

How a Cochrane review is carried out, and its publication, are governed by an international consortium of experts in health research.<sup>5</sup> They're considered the best evidence on whether a treatment is effective.

In the current report, where we've identified high-quality reviews, which were conducted using clear and robust methods, rather than reinvent the wheel, we've based our conclusions on these previously published reviews – updating them with information from more recently published trials, where this data exists. Full details can be found in the 'References' section at the back of the report.

The search and assessment of the literature was done by experts in evidence evaluation, rheumatology, and complementary medicine. It also included input from a patient representative. Details of those involved are given in the section 'Contributors'.

## Classification of complementary therapies

### Are complementary therapies effective?

For each complementary therapy, we've looked at whether evidence suggests the treatment is effective. Many of the trials measured different outcomes – for example pain, disability or fatigue – and often the results show a treatment to be effective for one outcome but not another. We've taken 'effectiveness' to mean an improvement in pain, disability or quality of life, but this doesn't necessarily mean that the therapy was effective for all outcomes.

The quality of RCTs can vary, which affects the reliability of the results. The trials included in this report were judged based on a scoring system called the Jadad scale.<sup>6</sup> This system is commonly used to evaluate the quality of published RCTs in the field of complementary medicine. The Jadad scale has levels from 1 (very poor quality) to 5 (very good quality). To make it easier to use, we've collapsed the scale into two categories:

- good/high quality (Jadad score 3 or above)
- low quality (Jadad score below 3).

We've marked trials of low quality with the symbol ‡. These were given a lower weighting when we came to our conclusions about the therapy.

Where this symbol is attached to a review, systematic review or Cochrane review, it shows that one (or more) of the trials in the review is of low quality, not the review itself. Where it's used in reference to multiple trials, we've identified these by name.

Trials with many participants aren't necessarily of higher quality than those with fewer people, but where a treatment is genuinely more effective than another it's more likely to be detected in a large trial. In addition, a large high-quality trial is considered to give more reliable results than a trial of equal quality but with fewer participants.

Based on the evidence available from trials, we've categorised each therapy into one of six categories:

<b>No evidence</b>	No trials have been identified, so we can't make a judgement about whether the therapy is effective or not.
<b>1</b>	Overall, there's no evidence to suggest that the therapy works or only a little evidence which is outweighed by much stronger evidence that it doesn't work.
<b>2</b>	There's only a little evidence to suggest the therapy might work. The evidence in this category often comes from one or two low-quality trials which have reported positive results, and there are therefore important doubts about whether or not it works.
<b>3</b>	There's some promising evidence to suggest that the therapy works. The evidence will be from more than two low-quality trials, or from a large, high-quality trial; however, there may also be some trials showing that it doesn't work. Therefore, we're still uncertain whether therapies in this category work or not.
<b>4</b>	There's some consistency to the evidence, which will come from at least three trials (one of high quality), to suggest that the therapy works. Although there are still doubts from the evidence that it works, on balance we feel that it's more likely to be effective than not.
<b>5</b>	There's consistent evidence across at least two high-quality trials to suggest that the therapy is effective.

The score only relates to any evidence for the conditions that we focus on in this report. Trials into different diseases often confirm our findings, but sometimes they don't.

Because of the nature of RCTs, the effectiveness of the treatment is judged on the average effect among all participants receiving a particular therapy. When we say a therapy is effective, participants in treatment groups experienced a greater benefit compared to people in the other groups, on average. This doesn't mean that it's the best treatment available or that it'll work for everyone.

When assessing effectiveness, we've looked for statistically significant results. This means that we're fairly sure that the differences between groups didn't happen just by chance, but it doesn't necessarily mean that these differences (e.g. with respect to improvement in pain) are large.

To show the weight of evidence for each therapy, we've also provided the number of trials and participants that our classification is based on. The number of participants includes everyone who took part, not just those in the treatment group (which will typically be approximately half of this number, depending on the number of groups in each trial). It doesn't take account of participants who dropped out of the trial.

## Are complementary therapies safe?

We've also categorised therapies according to their safety. This rating is mostly based on reported side-effects from both the trial data and prior knowledge, but a separate literature search was done to find all studies that have examined the safety of acupuncture, chiropractic and osteopathy.

We've classified the therapies using a traffic-light system:

<b>Green</b>	Therapies in this category are reported to have mainly minor and infrequent side-effects. A green classification doesn't mean that the compound has no reported side-effects.
<b>Amber</b>	Therapies with an amber rating have commonly reported side-effects (even if they're mainly minor symptoms) or more serious side-effects.
<b>Red</b>	Therapies with a red rating have serious reported side-effects.

While we've commented on the safety of all therapies considered in this report, we've only given a formal safety rating where there are trials available.

Regardless of the safety information given here, we would strongly advise using a qualified practitioner who is registered with the appropriate governing body, where this exists. It's also important to tell your doctor of all complementary therapies you're using, even if there are no reported side-effects.

A number of the therapies are protected by title, so it's against the law for individuals to call themselves a chiropractor or an osteopath unless they're registered with the appropriate governing body. This doesn't necessarily mean that other people can't use the same procedures – only the title is protected, not of the practice of techniques.

## The complementary medicine I want information about isn't covered in Section 1. Why?

Only therapies which have suitable evidence from at least one RCT are listed in Section 1. If the therapy that you're searching for doesn't appear here, that means we couldn't find any reports of an RCT testing it, or that any trials found don't give enough information, which means it's not possible for us to tell whether it works or not. We list some commonly used therapies not featured in Section 1 in Section 2.



## What does each section mean?

Each section has been written in the same format to allow comparison between therapies. An explanation of each section is below.

## Name of therapy



In the heading bar we give the most commonly used name for the treatment and an indication of the condition(s) for which we have been able to find some research evidence (RA = rheumatoid arthritis, OA = osteoarthritis, FM = fibromyalgia and LBP = low back pain). When a condition is given in bold orange text, a summary of evidence in this area is given.

### What is this therapy?

This section briefly explains what the therapy is and what a treatment session/course may involve. The description of each therapy is based on those in *Complementary therapies for pain management: an evidence-based approach*, a standard textbook on complementary therapies.<sup>7</sup>

### How might it work?

This section explains how the treatment is believed to work and whether any scientific evidence supports these theories.

### Where do I get it from?

This section comments on the availability of treatment. Information has been taken largely from the governing bodies for each therapy, where these exist, and we've listed websites where further information is available. The sites we refer to were accessible on 10 May 2012, although websites are often revised or even removed. Others are often available, and we don't endorse or rank the quality of information they provide.

## What is the evidence that it works?

This section, firstly, makes a general statement about the size of the body of evidence; and, secondly, reviews the evidence, with respect to treatment effectiveness, for rheumatoid arthritis, osteoarthritis, fibromyalgia and low back pain in turn. All trials that were found into the conditions considered in this report are included, although some don't give evidence that allowed us to consider them when we came to our conclusion about the therapy (for example, because of the way the results were analysed). These results have been separated into an 'Excluded trial' section at the end of the relevant condition.

### Is it safe?

We make a general comment about the safety of the treatment. It's mostly based on the included trials, but in acupuncture, chiropractic and osteopathy it's based on a more in-depth review because of initial safety concerns.

### Conclusion

We give a brief summary about the effectiveness and safety of the treatment.

### Classification

In this table we give our grading of the effectiveness of this therapy, for each condition, on the scale from 1 to 5 and the traffic-light safety rating. We also give information about how many trials and participants our conclusions are based on.

In the example below, for Alexander technique, we rated the effectiveness as 3 (some promising evidence to suggest that the therapy is effective) and the safety as green (any side-effects are minor and infrequent). This was based on data from 579 participants from one RCT.

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	3	Green	1 (579)



Section 1

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# **Review of evidence**

# Acupuncture

RA OA FM LBP

## What is acupuncture?

Acupuncture is a traditional Chinese medicine technique where fine needles are inserted at points of the body to aid the recovery of health and improve well-being. Acupuncture can also be used to deactivate 'trigger points' that are thought to be causing pain. Needles can be left in position for up to 20 minutes (often less for trigger-point acupuncture), and in some cases a small electrical current is added (electro-acupuncture). Treatment is typically given weekly, although this can vary. When symptoms begin to ease, the time between treatments may be increased until a course of about six to 12 sessions is completed.

## How might it work?

A central feature of traditional acupuncture is the control of an underlying life-energy called 'qi' (pronounced 'chi') that mainly moves through the body along 12 channels known as meridians. Acupuncturists claim to make a diagnosis based on acupuncture theory and then balance the qi by inserting needles at appropriate points along the meridians.

Acupuncture can also be understood in terms of what happens in the nervous system. Acupuncture points may relate to particular features such as nerve junctions and connective tissue. Stimulating an acupuncture point affects physiology (e.g. nerve conduction) and biochemistry (e.g. endorphins, the body's natural painkillers), which may help relieve pain.

## Where do I get it from?

Use of acupuncture on the NHS is limited, although some physiotherapists and physicians are able to provide it (see [www.aacp.org.uk](http://www.aacp.org.uk) and [www.medical-acupuncture.co.uk](http://www.medical-acupuncture.co.uk) for information). Most people pay for private treatment with professional acupuncturists.<sup>1</sup>

The British Acupuncture Council has around 3,000 members and lists professional acupuncturists in local areas on their website ([www.acupuncture.org.uk](http://www.acupuncture.org.uk)).

## What is the evidence that it works?

Acupuncture is one of the most researched complementary therapies available in the UK. Five systematic reviews were identified, as well as a number of individual RCTs, across each condition.

## Rheumatoid arthritis

**Systematic review** – A systematic review was identified that summarised the results of eight trials involving a total of 606 participants.<sup>2</sup> In the trials, the number of treatment sessions varied from 1–60 sessions, and the number of participants ranged from 20–240.

- Four trials compared the effectiveness of manual or electro-acupuncture with sham acupuncture. They all failed to show the benefits of acupuncture on pain.
- Three trials tested acupuncture combined with moxibustion (a traditional Chinese medicine technique that involves burning a small, aromatic herb to help healing) against conventional medication. These trials also failed to show that acupuncture and moxibustion was better than medication in terms of pain reduction and joint swelling.
- Only one trial, which compared manual acupuncture with medication, reported results in favour of acupuncture.

Overall, the review concluded that trials in acupuncture failed to show specific effects of acupuncture for pain control in patients with rheumatoid arthritis.

Another review published in the same year, also of eight trials (six of which were featured in the previous review) had similar conclusions.<sup>3</sup>

**Trial 1 †** – One additional trial was identified in which 22 participants were randomised to receive auricular electro-acupuncture (acupuncture with electrically stimulated needles attached to the ear) and 22 to receive autogenic training (postural training/exercises/meditation) once a week for six weeks.<sup>4</sup>

- Both groups reported a decrease in pain and disability over the course of treatment, which remained three months after treatment had finished.
- There was also some evidence that the improvement in symptoms was greater in the electro-acupuncture group than in among those who received autogenic training.

## Osteoarthritis

**Cochrane review** – A Cochrane review was identified that included 16 trials with 3,498 participants.<sup>5</sup> Twelve trials only included participants with osteoarthritis of the knee; three only osteoarthritis of the hip; and one involved both knee and hip osteoarthritis.

- Compared to sham treatment, acupuncture was associated with significant, although small, improvements in pain and function after eight weeks and in the longer term (26 weeks).
- Benefits of acupuncture were also observed when comparing the treatment to waiting list (usual care) control treatment.

In addition, eight trials were identified that weren't included in the above review:



**Trial 1** – In this large trial involving 560 people aged 50 or older with knee osteoarthritis, participants were randomised to one of the following groups:

- a traditional Chinese acupuncture using transcutaneous electrical nerve stimulation (TENS) treatment group
- a sham acupuncture group, where minimal electrical stimulation was provided with shallow needles in points considered not to have any therapeutic effect
- a waiting list control group.<sup>6</sup>

The first two groups received ‘treatments’ twice weekly for 6 weeks.

- At the end of treatment, and at the three-month follow-up, those in groups one and two reported an improvement in pain and function compared to the waiting list controls.
- However, there were no differences between the real (TENS) and the sham acupuncture groups.

**Trials 2–8 †** – The seven other trials were all relatively small, ranging from 20–68 participants. Two were of low quality (Lu et al. and Itoh et al.). Generally speaking, all showed positive effects: acupuncture was found to result in an improvement in pain and function compared to usual care and sham acupuncture. However, the trials didn’t consistently demonstrate that these effects continued in the longer term.<sup>7–13</sup>

## Fibromyalgia

**Systematic review** – This review included seven trials with a total of 385 participants.<sup>14</sup> The length of treatment ranged from 2–15 weeks, with an average of nine treatment sessions. Electro-acupuncture was performed in two trials and manual acupuncture in five trials.

- The review’s authors concluded that there was strong evidence for pain reduction at the end of acupuncture treatment, but no evidence for improved fatigue, sleep disturbance or function.
- There was no evidence of an improvement in pain or function in the longer-term follow-up.
- The pain-reducing effect of acupuncture was only found in poor-quality trials, so the authors concluded that acupuncture can’t be recommended for the treatment of fibromyalgia.

**Trial 1** – One additional trial, of reasonable quality, was identified.<sup>15</sup> The 58 female participants were randomised to receive acupuncture plus antidepressants and exercise, or antidepressants and exercise alone. Those who received acupuncture had two 20-minute sessions a week for 10 weeks. At the end of the treatment, the acupuncture group reported a greater improvement in pain and number of tender points than the control group.

## Low back pain

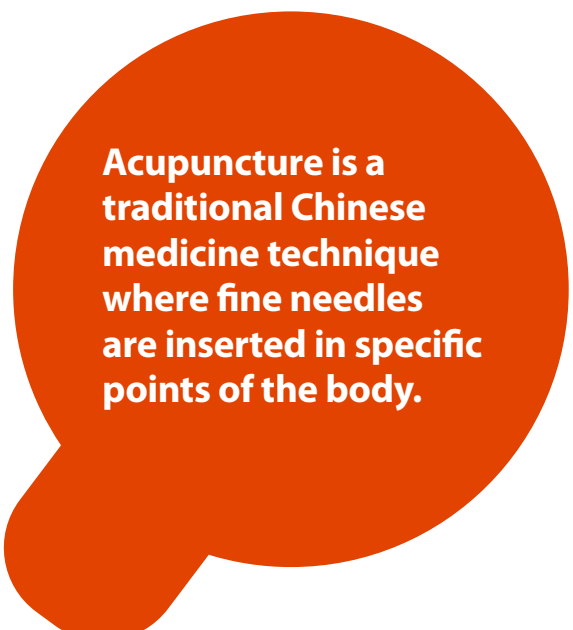
**Systematic review 1** – The review summarised the results of 35 trials that were published before 2003. In 24 trials (1,718 people), the majority of the participants had chronic low back pain.<sup>16</sup> The review’s authors came to the following conclusions:

- Compared to no treatment or sham acupuncture, acupuncture was more effective for pain relief and functional improvement both immediately after treatment and in the short term.
- The authors concluded that although acupuncture may be a useful add-on to other therapies (such as exercise, mudpacks or infrared heat therapy), it wasn’t necessarily better than conventional or other alternative treatments.
- While most participants had chronic low back pain, it’s not possible to tell the difference between effects in those with chronic and those with short-term (acute) symptoms.

**Systematic review 2** – A second review summarised the results of 23 trials, including five on chronic low back pain, that were published after 2003.<sup>17</sup> The authors of this review concluded that acupuncture was no more beneficial than sham acupuncture but – similar to the previous review – that it was more beneficial than no treatment, and also a useful add-on to conventional care.

Two further trials not included in the above reviews also tested the effectiveness of acupuncture in the treatment of low back pain.

**Trial 1** – In the first trial, 638 participants were randomised to four groups: acupuncture (specific to low back pain), acupuncture (not specific to low back pain), sham acupuncture (using toothpick needles) or usual care.<sup>18</sup> Ten courses of treatments were provided over seven weeks.



**Acupuncture is a traditional Chinese medicine technique where fine needles are inserted in specific points of the body.**

- There was significant improvement in function and symptoms in all the acupuncture groups compared to the usual care group; however, improvements among the three acupuncture groups were not significantly different from one another.
- The results were similar when participants were followed up after a year.

**Trial 2 ‡** – In the second trial, 84 men were randomly assigned to receive the following treatment for five weeks: 30 mg per day baclofen, a muscle relaxant medication; acupuncture; a combination of acupuncture and medication; or no pain-reduction treatment (control group).<sup>19</sup>

- After five minutes of treatment, there was significant reduction in pain in the acupuncture and combination group compared to the control group.
- The acupuncture group also had significantly greater improvement in pain compared to the medication group, and this effect remained until the 10-week follow-up.
- The improvement was greater among those who received the combined therapy of acupuncture and medication.

### Is it safe?

Because the therapy involves needles being inserted through the skin, there are a number of potential safety concerns with acupuncture. Bleeding is a common minor side-effect, and rare occurrences of nausea, dizziness, fainting and vomiting have been reported. A large trial in the UK of over 34,000 acupuncture treatments reported 43 minor side-effects of the types listed above, a rate of 1.3 for every 1,000 treatments (0.13%).<sup>20</sup> Other trials have reported bleeding or haematoma (bleeding under the skin) in 3–6% of consultations.<sup>21,22</sup> For this reason, people with blood-clotting disorders need to be particularly cautious. Pain at the site of needling is also not uncommon: several trials have reported an occurrence in 1–2% of consultations.<sup>21–23</sup>

More serious side-effects from acupuncture, such as injuries to internal organs or major infections, seem to be very rare. Cases have been reported in the medical literature where such injuries or infections have resulted in death<sup>24</sup>, although this is rarer still. In a large trial of 229,230 participants who received over 10 treatment sessions on average, around 2 in 100,000 patients reported a major infection.<sup>22</sup> Approximately 1 in 100,000 suffered a pneumothorax (an abnormal collection of air outside the lungs), although many of the participants wouldn't have received acupuncture needling to the chest wall so this is probably both an underestimate of the risk associated with acupuncture to the chest or upper back and an overestimate of the risk associated with acupuncture generally.

### Conclusion

Acupuncture is a treatment that involves the insertion and manipulation of needles in various locations in the body. It's one of the most studied complementary therapies in the area of musculoskeletal disease, with over 70 trials, many of them high quality, made up of over 12,000 participants. Serious side-effects are rare and even minor effects are fairly uncommon.

The evidence suggests that acupuncture isn't effective in rheumatoid arthritis, but there's consistent evidence that it's effective in easing some of the symptoms of osteoarthritis, low back pain and, to a slightly lesser extent, fibromyalgia. In addition, it's worth noting that, as a result of the weight of evidence accumulating on acupuncture for low back pain, the current guidelines from the National Institute for Health and Clinical Excellence (NICE) now recommend acupuncture for the treatment of persistent non-specific low back pain.<sup>25</sup> Interestingly, however, NICE consider that there's not enough consistent evidence of clinical or cost effectiveness to allow a firm recommendation on the use of acupuncture for the treatment of osteoarthritis<sup>26</sup>, although these guidelines, reported in 2008, are currently being updated.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	1	Green	9 (650)
OA	5	Green	24 (4,317)
FM	4	Green	8 (443)
LBP	5	Green	31 (7,061)

## Alexander technique



### What is the Alexander technique?

The Alexander technique is a self-care method that helps people to move, sit and stand with less strain and greater ease. Lessons are based on the assumption that the way we carry out our daily lives may have long-term consequences for our health. Alexander teachers show how to focus on head poise, release muscle tension, and avoid ways of reacting and moving that may cause or increase pain. Users learn how to make smoother movements with less effort and how to apply this to everyday life.

A typical lesson lasts 30–45 minutes, during which time the teacher provides gentle guidance via touch and words. Around 20–30 lessons are often recommended for learning the basic concepts and gaining the skill and understanding to apply them successfully.

### How might it work?

The underlying workings of the Alexander technique aren't yet well understood. There's evidence that training in the technique can lead to reduced stiffness and improved postural muscle activity, coordination and balance.<sup>1</sup> Practitioners believe that musculoskeletal pain related to the habitual under-use of some muscles and over-tightening of others is likely to reduce when coordination improves.

### Where do I get it from?

There are currently about 1,000 teachers of the technique in the UK. The largest professional organisation is the Society of Teachers of the Alexander technique, which has about 850 members. More information about the organisation and how to find a teacher can be found at [www.stat.org.uk](http://www.stat.org.uk)

### What is the evidence that it works?

One trial investigated the Alexander technique for low back pain.

### Low back pain

**Trial 1** – This trial included 579 participants with chronic or recurrent low back pain.<sup>2</sup> Approximately one quarter of participants were randomised to each of the following groups:

- normal GP care
- six lessons of the Alexander technique
- 24 lessons of the Alexander technique
- massage.

Participants' pain was reassessed at three months. (Note: the group receiving 24 lessons of the Alexander technique were still having treatment at this point.)

- At the three-month follow-up, compared to the usual GP care group, those who received massage reported a significant reduction in low back pain-related disability and in the number of days in pain.
- The improvement in disability wasn't long term, although the number of days in pain was still significantly reduced, compared to the control group, at the one-year follow-up.
- Compared to those who received normal care, participants in the Alexander technique groups reported a significant improvement in disability and a decrease in the number of days of pain in the previous four weeks. These improvements remained after 12 months.
- Although the improvement was greater in the 24-lesson group, no formal comparison between the two therapy groups was presented, so we can't say for certain whether extra lessons gave additional benefit.

**Excluded trials** – A review was identified that examined the effectiveness of the Alexander technique in several medical conditions.<sup>3</sup> It includes an unpublished trial among patients with chronic mechanical low back pain, but it was produced before the trial described above.<sup>4</sup> The authors of the review concluded, based on this earlier trial, that there was promising evidence for the effectiveness of Alexander technique lessons but further thorough trials were needed before a conclusion could be made. As the trial cited in this review is unpublished, it's not been possible to assess its quality, so it has been excluded when considering our recommendation in this report.

### Is it safe?

The technique is considered safe to practise. No side-effects associated with the Alexander technique were reported in the above trial.

### Conclusion

The Alexander technique teaches users to improve poise and posture, and to move with less physical effort. It's safe to practise, and the evidence – based on one large, high-quality trial – suggests that the Alexander technique is effective for low back pain. There's currently no evidence for rheumatoid arthritis, osteoarthritis or fibromyalgia.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	3	Green	1 (579)

# Aromatherapy



## What is aromatherapy?

Aromatherapy is the systematic use of oils extracted from herbs, flowers and plant parts for therapeutic purposes.<sup>1</sup> Often called ‘essential oils’, they’re commonly massaged into the skin, added to baths, inhaled with steaming water or spread throughout a room with a diffuser. Some oils may be bought over the counter, or they may be administered by a practitioner. Essential oils are selected according to the patient’s medical history and preference of scents. The frequency of sessions, which typically last for an hour, can vary depending on the patient, practitioner and condition.

## How might it work?

Essential oils are made up of aromatic molecules. The scent from the oil activates the sense of smell and is believed to have psychological and physiological effects, either relaxing or stimulating, depending on the oil. Essential oils can be absorbed through the skin and some laboratory studies have suggested that the molecules can affect the way organs (e.g. the heart, lungs, liver and gut) work, although the clinical relevance of these findings isn’t clear.<sup>2</sup>

## Where do I get it from?

Several associations offer information about treatment with aromatherapy and the availability of practitioners. One of the UK’s leading associations for aromatherapy is the Aromatherapy and Allied Practitioners’ Association, which represents qualified therapists and training colleges. Their website ([www.aapa.org.uk](http://www.aapa.org.uk)) and the site for the Complementary and Natural Healthcare Council ([www.cnhc.org.uk](http://www.cnhc.org.uk)) give information on qualified practitioners.

## What is the evidence that it works?

Two trials were identified that evaluated the benefits of aromatherapy in the treatment of fibromyalgia.

### Fibromyalgia

**Trial 1** – In the first trial, 43 women were randomly given a mixture of aloe vera, eucalyptus, lemon, orange, camphor, rosemary and peppermint (024 essential oil) or peppermint oil, which has no supposed therapeutic quality but smells the same as the treatment oil.<sup>3</sup> Participants were asked to exercise three times a week, once with an instructor and twice at home, for 12 weeks. Both groups were trained in how to apply the oils before exercise, and, on exercise days, last thing at night. At the end of the trial, they were assessed to find out whether the oils had any effect on the number of days exercised, ease of exercise, and pain.

- Neither oil resulted in an improvement in pain or the ability to exercise.
- There were no differences between the two groups.

**Trial 2** – The second trial also investigated the effectiveness of 024 essential oil.<sup>4</sup> The 153 participants were randomised to use 024 essential oil or peppermint oil every four hours, as needed for pain, for one month.

- At the end of the one-month treatment period, no significant difference between the groups was found in relation to overall disease impact.
- Significant improvements were seen in the patients using 024 oil with regard to night-time pain, number of tender points and level of pain tolerance compared to those who used peppermint oil.

## Is it safe?

There are no major safety concerns associated with aromatherapy, although some people may experience a mild allergic reaction or nausea. Users are advised to avoid sensitive areas such as near the eyes or open wounds. The oils can be very concentrated and should never be applied to the skin undiluted. They may be harmful in large quantities, particularly to pregnant women.

In one trial, a woman (with a history of migraine) reported having migraines that began during the trial.<sup>3</sup> In another, a number of participants reported smell sensitivity and skin irritation, although the same numbers of those in the treatment group and control group were affected.<sup>4</sup>

## Conclusion

Aromatherapy is based on the use of aromatic oils, usually massaged into the skin, added to baths or inhaled. Although care should be taken in the use of oils – particularly among those with sensitive skin, or on sensitive parts of the body – it’s considered a safe treatment. However, the limited evidence suggests that it’s not effective in the treatment of fibromyalgia. There’s currently no evidence for rheumatoid arthritis, osteoarthritis and low back pain.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	2	Green	2 (196)
LBP	No evidence		



## Autogenic training



### What is autogenic training?

Autogenic training is made up of a series of mental exercises, involving relaxation and autosuggestion. Users are taught a set of simple meditative activities to focus the mind on the body's experience of relaxation with the aim of switching off the normal 'fight-or-flight' stress response at will and replacing it with a more relaxed and passive reaction. Supporters of the therapy believe that the body's natural self-healing processes can only occur when a person is in this passive state.

Autogenic training usually is taught individually over 8–10 weeks, but group sessions are also available. After a lot of practice, users can guide themselves without the need for a teacher.

### How might it work?

Autogenic training is believed to be particularly effective for conditions where stress plays an important role, and practitioners believe that it supports the way the body heals itself.<sup>1</sup> It's supposed that encouraging relaxation can cause a spontaneous release of physical and emotional tension, which can allow the individual to have a different experience of their symptoms and improve sleep. Training is expected to be a lifelong skill, which is an important aspect of current attitudes to patient care. The ways autogenic training is thought to work are so far unproven.

### Where do I get it from?

Autogenic training is available on the NHS at the Royal London Homeopathic Hospital ([www.rlhh.eu](http://www.rlhh.eu)). For everywhere else in the UK, the British Autogenic Society ([www.autogenic-therapy.org.uk](http://www.autogenic-therapy.org.uk)) provides a list of qualified practitioners and their locations.

### What is the evidence that it works?

One trial was found on the use of autogenic training in rheumatoid arthritis. Two trials were found for fibromyalgia, although one was excluded when we considered our recommendations.

### Rheumatoid arthritis

**Trial 1 †** – One trial was identified in which 22 participants were randomised to receive autogenic training (postural training/exercises/meditation) and 22 to receive auricular electro-acupuncture (acupuncture with electrically stimulated needles attached to the ear) once a week for six weeks.<sup>2</sup>

- Both groups reported a decrease in pain and disability over the course of treatment, which remained three months after treatment had finished.
- There was also some evidence that the improvement in symptoms was greater in the electro-acupuncture group than in among those who received autogenic training.

### Fibromyalgia

**Trial 1** – For this RCT, 13 participants were randomised to have autogenic training and 14 to have instruction in various self-help techniques, including cognitive behavioural strategies, relaxation and physical exercises.<sup>3</sup>

- After three months, the autogenic training group reported a decrease in average pain intensity, compared to the control group.
- No differences were observed between the two groups with respect to any other outcomes, including medication consumption, sleep quality and general health.

**Excluded trials** – A second fibromyalgia trial<sup>4</sup> was discussed in a review about complementary and alternative medicine in musculoskeletal conditions<sup>5</sup> and in a meta-analysis concerning clinical outcomes of autogenic training.<sup>6</sup> The review articles were inconsistent in their description and the trial wasn't available in English, so a quality assessment/data extraction couldn't be carried out. For this reason, the trial has been excluded when considering our recommendation in this report.

### Is it safe?

The side-effects of autogenic training haven't been well studied, but mild side-effects may occur, such as unusual sensations. Increased depressive symptoms were reported in participants with fibromyalgia. No side-effects were reported in the rest of the available evidence.

### Conclusion

Autogenic training is a 'mind and body' technique that promotes relaxation and body awareness. Some minor side-effects have been reported, but it's considered safe to practise. The available evidence suggests that it's not effective for rheumatoid arthritis and there's only a little evidence that it's effective in fibromyalgia, so there are still major doubts as to whether it works. There's currently no evidence for osteoarthritis and low back pain.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	1	Green	1 (44)
OA	No evidence		
FM	2	Green	1 (27)
LBP	No evidence		

# Biofeedback



## What is biofeedback?

Biofeedback is a form of self-regulation that trains users to improve their health by controlling bodily processes that normally happen automatically (for example heart rate, blood pressure, skin temperature and muscle tension). During biofeedback therapy, the user is asked to perform a task (involving a particular muscle group, for example). Electrodes are attached to the skin above the muscles and the user receives information about their muscle activity and/or the performance of the task from these electrodes, often on a computer monitor.

The three most commonly used forms of biofeedback therapy are:

- electromyography (EMG), which measures muscle tension
- thermal biofeedback, which measures skin temperature
- electroencephalography (EEG; sometimes referred to as neurofeedback), which measures brainwave activity.

Initial treatment usually lasts about 60–90 minutes, although sessions after that may vary.

## How might it work?

Biofeedback is based on the belief that the mind and body are linked, and an individual can become more aware of bodily activities and learn to regulate them.<sup>1</sup> It's thought that biofeedback is helpful in teaching users to recognise this mind/body link so they can gain control of their own healing by providing measurable feedback and monitoring progress and learning.

## Where do I get it from?

Most biofeedback practitioners are trained in other fields, such as psychology, physiology or social work, so it can be difficult to find someone who specialises in it. Some NHS centres and private clinics may offer biofeedback therapy. Information about the availability of the therapy can be found at the following websites:

- [www.biofeedbackclinic.org](http://www.biofeedbackclinic.org)
- [www.peakmind.co.uk](http://www.peakmind.co.uk)
- [www.york-biofeedback.co.uk](http://www.york-biofeedback.co.uk)
- [www.symphonicmind.com](http://www.symphonicmind.com)

## What is the evidence that it works?

A systematic review included two trials into the effects of biofeedback on rheumatoid arthritis. A further two trials investigated its role in osteoarthritis of the knee. For fibromyalgia, three trials examined the effectiveness of EEG biofeedback and five looked at EMG biofeedback, although one was excluded when we came to our conclusion about the therapy. A review into low back pain treatment

identified four RCTs on biofeedback. We also found five separate RCTs, two of which weren't included in the review and three from after the review was published.

## Rheumatoid arthritis

**Systematic review** – The review examined the effectiveness of a number of different therapies in the treatment of rheumatoid arthritis, including two trials of biofeedback.<sup>2</sup> In the first trial, 18 patients were randomised to a thermal biofeedback group or to a waiting list control group. Those receiving biofeedback were encouraged to relax and to allow increased blood flow to the skin (which would increase the skin's temperature). They were also given progressive relaxation training and cognitive pain management strategies.

- After six weeks of treatment, the biofeedback group reported a significant decrease in pain and emotional attitude towards pain, and had improved mobility, compared to the control group.
- There were no differences between the treatment group and the control groups at the 18-month follow-up assessment.

In the second trial, 53 patients were randomised to one of three different groups: five sessions of combined therapies, including thermal biofeedback, group relaxation training, and training in goal-setting and self-reward; social support; or standard medical care.

- After treatment, significant decrease in pain behaviour and disease activity was seen in the treatment group compared to the other two groups.
- These improvements weren't sustained in the long term.

It's not possible to say the short-term improvements were caused by the biofeedback alone as opposed to the other parts of the therapy.

## Osteoarthritis

**Trial 1 †** – The first trial involved 50 women with osteoarthritis of the knee who received either electrical stimulation or exercises using biofeedback.<sup>3</sup> Both treatment programmes were carried out five days a week for four weeks. Although participants in both groups showed improvement, there were no differences in terms of pain, physical function, muscle strength or functional performance at the end of the treatment.

**Trial 2 †** – The second trial investigated the effectiveness of EMG-biofeedback. Forty participants were randomised to receive a muscle-strengthening programme with or without biofeedback for three weeks.<sup>4</sup> At the end of the treatment, significant improvements were seen regarding pain, stiffness, knee muscle strength, and the ability to walk and use stairs, but there was no difference between the groups.

## Fibromyalgia

**Trial 1 (EEG biofeedback) ‡** – In the first trial, 40 women were randomised to receive either 20 sessions of EEG biofeedback training or antidepressant medication.<sup>5</sup> At each time point (from 2–24 weeks), those receiving biofeedback training reported significantly lower pain and fatigue scores.

**Trials 2 and 3 (EEG biofeedback)** – Two further trials, one with 34 participants<sup>6</sup> and one with 64<sup>7</sup>, compared EEG biofeedback with sham biofeedback. The groups received 22 sessions, and in both trials all participants reported improvements in pain and fatigue over the course of the treatment. However, in both trials, there was no difference between groups.

**Trial 1 (EMG biofeedback) ‡** – In this trial, 119 patients were randomised to receive EMG biofeedback/relaxation training (29 people); exercise; a combination of exercise and biofeedback; or an educational control (30 people each).<sup>8</sup> There were no differences in pain behaviour or disease severity either immediately after treatment, or three, 12 or 24 months after treatment.

**Trial 2 (EMG biofeedback) ‡** – In the second trial, 143 women were randomised to receive EMG biofeedback training (56 people), fitness training (58 people) or usual GP care (29 people).<sup>9</sup> No difference was observed in pain, fatigue or general health status between the groups at 24-week follow-up.

**Trial 3 (EMG biofeedback) ‡** – Thirty participants received EMG biofeedback or sham biofeedback for six days.<sup>10</sup> The biofeedback group reported a significant reduction in the number of tender points on clinical examination, but there was no difference in terms of pain score or the impact of the condition on daily activities.

**Excluded trial ‡** – In this small trial, 12 participants were randomised to get EMG biofeedback or sham biofeedback.<sup>11</sup> Both groups received 15 twice-weekly sessions.

- Significant improvements were seen in biofeedback group in relation to pain, tender points and morning stiffness.
- Participants receiving sham biofeedback reported no improvement except in tender points.

No formal comparison was made between treatment groups, so it's not possible to conclude whether one treatment resulted in a significantly better outcome than the other. For this reason, this trial has been excluded when considering our recommendations.

## Low back pain

**Review 1** – A recent high-quality review summarised the results of 30 trials examining the effectiveness of various behavioural treatments in treating chronic low back pain.<sup>12</sup> The review included four trials, involving 64 patients, comparing EMG biofeedback with waiting list controls.

- Pooling the data across the three trials, the authors demonstrated that biofeedback resulted in a significant short-term improvement in pain.
- Two of the trials demonstrated no associated improvement in function compared to participants in the waiting list control groups.
- Two of the trials also examined functional status. The authors showed that EMG biofeedback wasn't associated with any improvement in function compared to waiting list controls.

**Trials 1–5 ‡** – Two RCTs that weren't included in the above review were also identified.<sup>13,14</sup> One demonstrated significant benefits of EMG biofeedback over sham biofeedback and waiting list control in terms of pain duration and intensity. The other reported that biofeedback is no more effective than qigong (see page 40) in pain reduction in people with chronic low back pain.

Three trials were published after the above review.<sup>15–17</sup> One trial investigated the effectiveness of respiratory feedback and the other two used biofeedback alongside other therapies, such as exercise and cognitive behavioural therapy. These trials revealed that biofeedback was no more effective than sham therapy and had no additional benefits when combined with the other treatments.

Of these five trials, Flor et al., Zhuo et al. and de Fonesca Lopes de Sousa et al. were of low quality.

## Is it safe?

Occasional reports have associated biofeedback with acute anxiety, dizziness, disorientation and floating sensations.<sup>18</sup> Minor side-effects such as increased pain, fatigue and tiredness during the trial period were reported in some of the above trials.<sup>7,17</sup>

## Conclusion

Biofeedback is a technique where users receive feedback (usually electronic) about a bodily function – movement, for example – in order to learn how better to control that function. Some minor side-effects have been reported, but it's considered safe to practise. There's only little evidence that it's effective in rheumatoid arthritis and low back pain, but data suggests that it's not effective for osteoarthritis or fibromyalgia.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	2	Green	2 (71)
OA	1	Green	2 (90)
FM	1	Green	6 (430)
LBP	2	Green	8 (370)

# Chiropractic (spinal manipulation)

RA OA FM LBP

## What is chiropractic?

Chiropractic is concerned with the diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system. A key feature is the use of spinal manipulation (although many chiropractors will offer treatment for many different disorders, from asthma to high blood pressure, as well as spinal conditions). Spinal manipulation is used by a number of different therapists, including osteopaths, physiotherapists and some doctors, but in this section we only consider evidence relating to treatment that includes some element of spinal manipulation performed by a chiropractor.

Chiropractors may use a number of different tests to make a diagnosis, including blood pressure measurements or x-rays and, in addition to various hands-on techniques, may offer advice about activity, lifestyle and work.

## How might it work?

Chiropractors believe that the way the whole body works, and the spine in particular, contributes to health and rehabilitation, and that if any of the joints aren't in the right place, it may stop the body running smoothly. For example, it's thought that various intestinal disorders may be caused by pressure on nerves connected to the intestines because the spine isn't in the right position, and manipulation at that particular part of the spine could ease symptoms.<sup>1</sup> However, there's no good evidence to support this theory. It's also thought that, although chiropractors often aim to relieve compression or nerve irritation, the manipulations they use may also help pain caused by incorrect positioning or other mechanical stress.

## Where do I get it from?

There are approximately 3,000 chiropractors in the UK and, by law, they need a licence to practise. The therapy is regulated by the General Chiropractic Council (GCC), and all chiropractors must be registered with the GCC to be able to use the title 'chiropractor'. A few chiropractors work in the NHS, but most are in private practice so patients usually have to pay, although some healthcare insurance policies may cover treatment. A referral letter from a GP isn't necessary.

Further information about practitioners can be found at [www.gcc-uk.org](http://www.gcc-uk.org) or the British Chiropractic Association ([www.chiropractic-uk.co.uk](http://www.chiropractic-uk.co.uk)).

## What is the evidence that it works?

One trial was identified which looked into the use of chiropractic for osteoarthritis. A systematic review containing two trials for fibromyalgia was also found, as well as a Cochrane review of two trials for low back pain.

## Osteoarthritis

**Trial 1 ‡** – In this trial, 252 patients with osteoarthritis of the spine were treated with moist heat packs for 15 minutes, two or three times per week, for 20 sessions, and were randomised to receive either no additional treatment or chiropractic care, including manipulation.<sup>2</sup>

- At the end of the trial, both groups reported an improvement in pain and range of motion.
- Those who received chiropractic care reported a greater improvement in pain and range of motion than the other group.

## Fibromyalgia

**Systematic review ‡** – The review examined the effectiveness of chiropractic treatment in two trials.<sup>3</sup> In the first trial, 27 women were randomly allocated to either chiropractic treatment or a control group.<sup>4</sup> Both groups completed 16 weeks of resistance training, twice a week, consisting of 10 different exercises designed to increase muscle strength. The chiropractic group had spinal manipulation, twice a week, over the same period. At the end of the trial, chiropractic treatment resulted in no greater improvement in pain perception, strength or physical function.

In the second trial, 21 patients were randomly allocated to either chiropractic care, including spinal manipulation, soft-tissue therapy, passive stretching and education, or to a waiting list control group.<sup>5</sup> At the end of the trial, there were no differences in pain, disability or number of tender points between groups.

## Low back pain

**Cochrane review ‡** – This review included 12 trials (2,887 participants) with back pain, but only the two trials that clearly focused on chronic low back pain were included from this report.<sup>6</sup> In the first, 30 participants were randomly allocated to either chiropractic care, including manipulation, or normal pain management, including standard drug therapy, injections and use of transcutaneous electrical nerve stimulation (TENS) machines.<sup>7</sup> Treatment was given over eight weeks with a maximum of 16 treatment sessions per participant. Eight weeks after the start of treatment, those given chiropractic treatment reported greater improvements in pain and disability than the control group.

In the second trial, 235 participants were randomised into either a chiropractic group or a control (physical therapy) group.<sup>8</sup> After four weeks, those who received chiropractic reported greater improvements in pain compared to controls. However, this benefit wasn't reported in the longer term, and no significant improvement was seen in disability or general health status.<sup>9</sup>



### Is it safe?

A number of side-effects have been associated with chiropractic treatment, such as headaches, tiredness, increases in pain, and dizziness. These events are relatively common, with some trials showing that as many as half of patients reported some short-lived symptoms following treatment.<sup>10-12</sup> Estimates vary, but several trials have shown that these side-effects last only a matter of hours or, at most, a couple of days.<sup>12-14</sup>

Several very rare but serious side-effects have been attributed to chiropractic manipulation, including cauda equina syndrome (a condition that causes partial or complete loss of function of nerves below the base of the spinal cord), vertebrobasilar artery (VBA) stroke (a stroke which is caused by partial or complete rupture of some of the arteries serving the brain) and even death. In 10 large trials, no serious side-effects were reported in 19,362 participants receiving chiropractic treatment.<sup>10,12,14,15-21</sup> Others have estimated that, among people under 45 years old, the rate of VBA stroke that can be linked to chiropractic manipulation of the neck is around 1.3 events for every 100,000 individuals.<sup>22</sup>

In addition, a large Canadian study found that people who experienced VBA stroke were three times more likely to have visited a chiropractor in the three days before their stroke compared to others who hadn't had a VBA stroke. However, the relationship between stroke and chiropractic visits was only observed in patients under 45 years old, and these patients were also approximately three times more likely to have visited their family doctor.<sup>23</sup> No formal statistical comparison was made between chiropractic consultations and family doctor consultations, so it's not possible to say for certain whether the risk in one group was greater than that in the other. This means there's still reasonable doubt as to whether or not chiropractic manipulation actually causes VBA stroke.

### Conclusion

Chiropractic is the assessment and treatment of ill-health, especially musculoskeletal disorders and in particular those relating to the spinal column, and is characterised by the use of spinal manipulation. Minor side-effects are common, including headaches, tiredness and dizziness. Although more serious side-effects have been linked to chiropractic treatment, existing evidence suggests that these events are very rare and not actually caused by the therapy itself.

There are serious doubts as to whether chiropractic works for the conditions considered here: the trial evidence suggests that it's not effective in the treatment of fibromyalgia and there's only little evidence that it's effective in osteoarthritis or chronic low back pain. There's currently no evidence for rheumatoid arthritis.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	2	Amber	1 (252)
FM	1	Amber	2 (48)
LBP	2	Amber	2 (265)



# Copper bracelets

RA OA FM LBP

## What are copper bracelets?

Many people wear copper bracelets (sometimes rings and anklets) to relieve pain. They're very popular, are purchased by patients directly, rather than being prescribed, and can look like and be worn like normal jewellery.

## How might it work?

Copper is essential for human health as it forms part of a number of enzymes, helps the make blood protein, and is important in the maintenance and repair of skin and blood vessels.<sup>1</sup> It's believed that the metal has anti-inflammatory properties and wearing copper jewellery lets the copper seep in through the skin, directly targeting painful areas.<sup>2,3</sup>

## Where do I get it from?

Copper bracelets are available over the counter in many high-street stores. They can be also bought over the internet.

## What is the evidence that it works?

One trial was identified which looked at the effects of copper bracelets on osteoarthritis.

## Osteoarthritis

**Trial 1** – In this RCT, 45 participants with osteoarthritis in the hips, knees, wrists or hands were randomly assigned to wear either a copper bracelet, a magnetic wrist strap, a weak magnetic wrist strap or a demagnetised wrist strap for 16 weeks.<sup>4</sup> At the end of the treatment, no differences were found between the four groups in terms of pain reduction, stiffness, physical function or painkiller use.

## Is it safe?

No serious complications or side-effects have been reported. However, the use of copper bracelets may cause temporary rashes or discoloration of the skin, and may cause skin irritation in some individuals.

## Conclusion

Copper bracelets can be bought on the high street and are commonly worn round the wrist with the intention of reducing the symptoms of arthritis. They're considered safe to wear, although evidence suggests that copper bracelets aren't effective in the treatment of osteoarthritis. There's currently no evidence with respect to rheumatoid arthritis, fibromyalgia and low back pain.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	1	Green	1 (45)
FM	No evidence		
LBP	No evidence		

Many people wear copper bracelets, rings or anklets to relieve pain. They can look and be worn like normal jewellery.





# Craniosacral therapy



## What is craniosacral therapy?

Also known as cranial osteopathy or sacro-occipital technique, craniosacral therapy is a gentle form of treatment where the therapist lightly touches the participant's head and/or other areas, supposedly to sense the body's rhythms.<sup>1</sup> This touch is believed to help re-establish the normal movements of the bones of the skull and release restrictions.<sup>2</sup>

The first session may take approximately one hour but following sessions tend to be shorter. The number of sessions depends on the problem and how severe it is.

## How might it work?

Supporters of craniosacral therapy believe that, as well as the rhythm of the pulse, other rhythms in the body's tissues and fluids also play an important role in health. It's thought that the unrestricted motion in these 'micro-rhythms' is central to the body's healing capabilities. Practitioners claim to sense these motions in a similar way to the pulse. However, there's no accepted scientific basis behind craniosacral therapy.<sup>1</sup>

## Where do I get it from?

Craniosacral therapy may be performed by a number of different therapists in the UK. There are several hundred registered practitioners, who may also be registered as physiotherapists, chiropractors, dentists, massage therapists, and osteopathic, medical or naturopathic physicians, as well as other regulated and unregulated healthcare practitioners. The Craniosacral Therapy Association of the UK website ([www.craniosacral.co.uk](http://www.craniosacral.co.uk)) provides a regularly updated list of qualified practitioners.

## What is the evidence that it works?

Several RCTs were identified in osteopathy in which practitioners could perform a number of techniques, including craniosacral therapy. However, because the effectiveness of craniosacral therapy can't be separated from osteopathic treatment generally, we haven't used the trials here when we came to our conclusion.

One trial was identified that evaluated the benefits of craniosacral therapy in the treatment of fibromyalgia.

# Fibromyalgia

**Trial 1** – In this RCT, 104 participants were randomly assigned to receive either craniosacral therapy or sham ultrasound treatment, twice weekly, for 25 weeks.<sup>2</sup>

- Ten weeks after the end of treatment, the group who received craniosacral therapy reported improvements in pain, anxiety, sleep quality, physical function and general health compared to baseline and the sham ultrasound group.
- Some improvements were shown over six and 12-month follow-ups, although no significant differences were observed between groups in terms of pain or quality of life.

## Is it safe?

The side-effects of craniosacral therapy aren't known, largely due to the lack of evidence from clinical trials, but temporary worsening of symptoms and mild discomfort is possible.<sup>1</sup> No side-effects were reported in the trial for fibromyalgia.

As craniosacral therapy is often delivered as part of osteopathic or chiropractic treatment, the safety information in these sections should also be checked.

## Conclusion

Craniosacral therapy is a gentle hands-on treatment where the therapist touches the head or sacrum. Some users experience a temporary worsening of symptoms, but it's considered safe to practise. There's currently only little evidence that craniosacral therapy may be effective in the treatment of fibromyalgia and no evidence with respect to rheumatoid arthritis, osteoarthritis or low back pain.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	2	Green	1 (104)
LBP	No evidence		



## Healing therapies



### What are healing therapies?

'Healing therapies' cover a broad range of approaches related to healing, including spiritual, mental, distant and faith healing, as well as prayer, reiki and therapeutic touch. These therapies involve channelling of healing 'energy' through the hands, and/or with thought, from one or more healers to another person, without the use of any medicines or remedies.<sup>1</sup>

### How might it work?

Various theories have been suggested to explain how these techniques may work. Some healers suggest that illness is caused by imbalances in the body and that channelling energy may be therapeutic. The healer is generally not considered to be the source of healing energy but rather serves as a vehicle for conducting higher forms of energy or power. Some healers describe this as religious energy; others don't. There's no scientific evidence to support any of these theories.

### Where do I get it from?

In the UK, local and regional spiritual healing organisations are registered. The largest membership organisation is the Healing Trust, originally known as the National Federation of Spiritual Healers (NFSH). Approximately 1,250 registered healers can be found on their website ([www.thehealingtrust.org.uk](http://www.thehealingtrust.org.uk)).

### What is the evidence that it works?

The trials identified reported on the use of several different types of spiritual healing. One trial for was found for rheumatoid arthritis, another for osteoarthritis of the knee and a further two for fibromyalgia.

Although several reviews were identified, none used participants with the conditions considered in this report.

### Rheumatoid arthritis

**Trial 1 †** – In this trial, 29 participants were visited by a doctor four times over six months. One group also saw a spiritual healer between 13 and 24 times for sessions of between 20 minutes and two hours during the same period.<sup>2</sup> During these visits, the healer passed their hands over the patient's body without actually touching them. At the end of the trial, there were no improvements in pain, grip, early morning stiffness or any clinical outcomes in either group.

### Osteoarthritis

**Trial 1 †** – This trial investigated therapeutic touch, a directed process of 'energy exchange', during which a practitioner uses their hands to aid healing. The 31 participants in this trial were randomised to one of three groups: six weekly sessions of either therapeutic touch or sham therapeutic touch, or standard care.<sup>3</sup> Pain was measured using different methods and the results differ.

- Using one approach, those who received therapeutic touch reported a greater improvement in general activity, and a reduction in pain severity and interference than the other two groups.
- Using another method, there was no difference between the groups in terms of the change in pain score after treatment.

### Fibromyalgia

**Trial 1 –** The subject of this trial was reiki, where the healer channels 'universal life energy' to the patient through light touch and thought.<sup>4</sup> The 93 participants were randomised to one of four groups: hands-on or hands-off reiki, delivered by a reiki master, or hands-on or hands-off sham reiki, delivered by an actor. Treatments were provided twice a week for eight weeks. No significant improvements were seen in the reiki groups compared to the control groups.

**Trial 2 †** – Participants in this trial were randomised to receive therapeutic touch (10 participants) or to listen to an audio tape about complementary therapies (five participants) weekly for six weeks.<sup>5</sup> No significant improvements were seen in the therapeutic touch group compared to the control group.

### Is it safe?

Sensations of heat or tingling under the hands of the healer have been reported, but healing therapies are widely considered to be safe. In one of the fibromyalgia trials, 41% of participants reported excess energy or feelings of anxiety, and 18% reported worsening of sleep and disturbed mood.<sup>5</sup> Overall, the reviews on healing therapies reported few side-effects.

### Conclusion

Healing therapies include a number of different therapeutic approaches, most of which involve the channelling of energy from the healer to the patient. Some users report odd sensations, although healing therapies are widely considered to be safe. However, the available evidence suggests that they're not effective in the treatment of rheumatoid arthritis, osteoarthritis or fibromyalgia. There's currently no evidence with respect to low back pain.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	1	Green	1 (29)
OA	1	Green	1 (31)
FM	1	Green	2 (108)
LBP	No evidence		

# Hypnotherapy

RA OA FM LBP

## What is hypnotherapy?

Hypnotherapy is a treatment carried out by bringing about a trance-like state to promote relaxation. It's believed that hypnosis can allow an individual to reach an altered state of consciousness in which it's possible to communicate with their subconscious mind. A typical session lasts 30–90 minutes, and an average course is made up of 6–12 weekly sessions, but this may vary according to the individual.<sup>1</sup>

## How might it work?

The aim of hypnotherapy is to achieve self-control over behaviour, emotions or physiological processes through 'hypnotic induction'. This refers to shifting attention away from the external environment towards a narrow range of objects or ideas suggested by the therapist. The shift in focus is thought to allow easier access to the unconscious mind, which is believed to be more welcome to suggestion (enhanced suggestibility) than the conscious mind. The therapist can make suggestions with the aim of treating psychological and medical conditions and influencing behavioural changes, yet the individual remains under their own control and not under that of the therapist.

Through hypnosis, patients are able to control normally involuntary processes such as skin temperature, heart rate and gut secretions. However, there's no known scientific basis for this.<sup>1</sup>

## Where do I get it from?

Several hypnotherapy associations offer access to practitioners. The National Council for Hypnotherapy (NCH) represents over 1,800 hypnotherapy professionals, and registered hypnotherapists can be found through their website ([www.hypnotherapists.org.uk](http://www.hypnotherapists.org.uk)). The British Association of Medical Hypnosis ([www.bamh.org.uk](http://www.bamh.org.uk)) also provides contact details of its members.

## What is the evidence that it works?

One review on hypnotherapy was identified that contained three relevant trials, one for each of osteoarthritis, fibromyalgia and low back pain.<sup>2</sup> A further trial was found for fibromyalgia.

### Osteoarthritis

**Trial 1 †** – Participants with hip or knee osteoarthritis were randomised to one of three groups: hypnosis (13 participants), relaxation (13 participants) or a control group (10 participants).<sup>3</sup> The eight weekly, 30-minute sessions were made up of a standard relaxation introduction followed by positive imagery for the hypnosis group, and standard relaxation techniques and gradual tensing/relaxing of their muscles for the relaxation group. The control group received no treatment and only attended the initial evaluation sessions.

- At the end of treatment, the hypnosis and relaxation groups reported greater improvements in pain score than the control group, although there was no difference between the former two groups.
- At the six-month follow-up, no significant difference was observed between any of the three groups.

### Fibromyalgia

**Trial 1 †** – Participants in this trial were randomised to receive either hypnotherapy or physical therapy, with 20 patients in each group.<sup>4</sup> The hypnotherapy group had eight 30-minute sessions to strengthen the ego, improve pain control, aid relaxation and improve sleep disturbance. The physical therapy group received massage and muscle relaxation training for one to two hours per week. After three months of treatment, and three months after that, those who received hypnotherapy reported significantly greater improvements in pain, fatigue, sleep and general health, compared to the physical therapy group.

**Trial 2 †** – In this trial, 45 participants were randomly assigned to receive one session of either hypnosis with relaxation suggestions; hypnosis with pain-relief suggestions; or relaxation.<sup>5</sup> Both hypnosis groups received instructions to lead them into a deep hypnosis for about 10 minutes. The groups then did the following tasks for 20 minutes.

- The relaxation suggestions group were asked to imagine a relaxing image, things related to the image that could excite the senses, and associated sensations of relaxation and well-being.
- The pain-relief suggestions group were asked to imagine a liquid or blue painkiller stream that filtered through their skin, reaching different parts of the body, with suggestions of the liquid soothing the pain, getting rid of tension and creating feelings of well-being.
- The relaxation group were shown how to relax various parts of the body for five minutes, then were asked to focus on their breathing for 10 minutes, with feelings of well-being and relaxation being suggested for five minutes.

At the end of the session, all groups reported improvements in pain intensity, although the pain-relief suggestions group reported greater benefit than either of the other two groups.

### Low back pain

**Trial 1 †** – Seventeen participants were randomly assigned to attend eight weekly sessions of either self-hypnosis or relaxation.<sup>6</sup> Both groups were given a general introduction to using self-hypnosis/relaxation as a means of pain control and a discussion of their allocated treatment, followed by either hypnosis or progressive relaxation training with a specific focus on lower back muscles. All participants were taught self-hypnosis/relaxation and urged to practise at home.

At the end of the treatment and at a three-month follow-up, significant improvements in pain, quality of life and depression were observed in both groups. However, neither group was superior to the other.

### Is it safe?

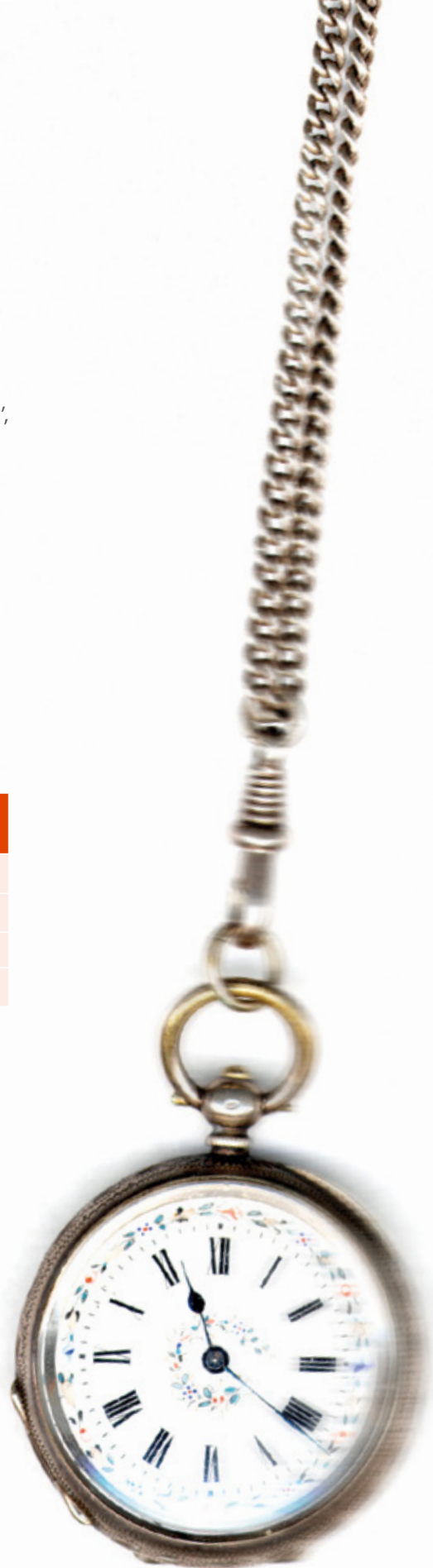
Hypnotherapy is believed to be relatively safe when practised by a trained professional.<sup>1</sup> Reports suggest that psychological problems may be made worse because repressed memories may be recovered, and some trials have reported false memory syndrome. In one trial, some participants were frightened by the idea of the hypnotherapy and three patients withdrew after three sessions because they were 'dissatisfied with the treatment', although no further details are given.<sup>4</sup>

### Conclusion

The treatment of musculoskeletal conditions with hypnotherapy involves the use of suggestion, under hypnosis, to bring about changes in pain perception, or illness-related function or behaviour. It's generally considered safe to practise, but the evidence suggests that it's not effective for low back pain. There's only a little evidence for osteoarthritis and fibromyalgia, so there are still important doubts as to whether it works. There's currently no evidence with respect to rheumatoid arthritis.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	2	Green	1 (36)
FM	2	Green	2 (85)
LBP	1	Green	1 (17)



# Imagery

RA OA FM LBP

## What is imagery?

Imagery, also called visualisation, is a mind-body relaxation technique that uses the imagination to promote relaxation and physical healing, and bring about a change in attitude or behaviour.<sup>1</sup> During the therapy, the practitioner will lead patients to build a detailed image in their mind according to their specific medical condition, such as picturing their body free of the problem, or picturing places in which they feel calm, safe, happy and relaxed.<sup>2</sup> Scripts on audio tapes are also commonly used so that the patient can practise in a location of their choice. The session is often accompanied by the gentle background music to help patients maintain a relaxed state. A typical session lasts for 20–30 minutes and weekly sessions for several weeks are usually recommended.

## How might it work?

The healing power of imagery is based on the idea that the mind can affect the body's functions. Similar to meditation, the practice of imagery may stimulate the brain which, in turn, may influence the hormonal and nervous systems, as well as the immune system.<sup>3</sup> However, there's little scientific evidence to support these theories.

## Where do I get it from?

Guided imagery is available from various professional groups. According to a database of worldwide complementary and alternative therapists, there are 15 UK practitioners who offer guided imagery, although others may be available. Further information about the availability of the therapy can be found at [www.worldwidehealthcenter.net](http://www.worldwidehealthcenter.net)

## What is the evidence that it works?

One trial has been identified that researched the use of imagery in rheumatoid arthritis. Another two were found for osteoarthritis, and a further four for fibromyalgia (although one trial into each condition was excluded when we made our recommendations about the therapy). A single RCT was also found for low back pain.

## Rheumatoid arthritis

**Trial 1 †** – In the trial, 68 participants were randomised to either a relaxation training group for five weeks followed by five weeks of imagery techniques for pain reduction, or a control group.<sup>4</sup>

- There were no improvements in pain, function or mobility after treatment.
- Those who received imagery and relaxation reported greater improvements than the control group in mobility and arm function after six months.
- It's not possible to determine whether the relaxation, imagery, or combination of both treatments caused this effect.

## Osteoarthritis

**Trial 1 †** – Thirty participants were randomised to receive guided imagery with relaxation or a sham treatment.<sup>5</sup> In the imagery group, patients listened to an audio-taped guided script. The sham group were asked to rest. Both sessions' groups performed their tasks for 12 minutes, twice a day for four months.

- At the end of the trial, the imagery group reported a significant reduction in pain and an improvement in mobility, compared to the sham group.
- Differences were also observed in terms of medication use.
- It's not possible from this trial to determine whether the observed effect is due to the guided imagery or the relaxation, or whether it is the combination of the two that elicits benefit.

**Excluded trial †** – A second trial for osteoarthritis was also identified in which the authors reported a reduction in pain and mobility difficulties<sup>6</sup>, and an improvement in quality of life<sup>7</sup> among patients receiving a guided imagery treatment (listening to audio-taped scripts for 10–15 minutes, twice a day, for 12 weeks), compared to those receiving usual care. However, the quality of this trial is poor and it's even difficult to work out how many participants were included, so this RCT has been excluded when considering our conclusion.

## Fibromyalgia

**Trial 1 †** – In this trial, 55 participants were randomised to either guided pleasant imagery (beautiful, natural settings on nice summer days), guided attention imagery (their body's internal pain control systems) and a control group (usual care).<sup>8</sup> After four weeks of treatment, a significant reduction in pain was found for the pleasant imagery group compared with either of the other two groups.

**Trial 2 †** – In the second trial, 24 participants were randomised to receive usual care plus guided imagery, and 24 to usual care alone.<sup>9</sup> After six weeks of treatment, there was no difference in pain reporting between the two groups; however, those receiving guided imagery reported significant benefits in functional status and belief in their own abilities compared to those receiving usual care.

**Excluded trial** – The authors of Trial 1 also conducted this low-quality RCT of 58 participants with fibromyalgia. They compared the effectiveness of guided imagery with patient education and with discussion sessions where they were encouraged to 'talk freely and emotionally' about their condition.<sup>10</sup> After 30 minutes of treatment, the education and imagery groups reported a reduction in pain. However, no formal comparison was made between treatment groups, so it's not possible to conclude whether one treatment resulted in a significantly better outcome than the other. For this reason, the trial has also been excluded when considering our recommendations.



## Low back pain

**Trial 1 ‡** – The 94 participants of this trial were randomised to an experimental group (receiving medication and behavioural therapy, including imagery) or to a control group (medication only) for 12 weeks.<sup>11</sup>

- After 12 weeks of treatment, the imagery group reported a significant improvement in pain and function compared with the control group.
- Participants in the imagery group were followed up at six months and their symptoms still appeared to be improved; however, the lack of follow-up in the medication group means we can't say whether imagery is superior in the long term.

### Is it safe?

No side-effects have been associated with the use of guided imagery; however, those with mental illnesses such as psychosis and personality disorder should be cautious as these may become worse with [introspection](#).<sup>1</sup>

### Conclusion

Imagery is a 'mind and body' technique used to promote relaxation and physical healing, and bring about a change in attitude or behaviour. It's considered safe to practise, but the evidence suggests that it's not effective rheumatoid arthritis or osteoarthritis. There's only little evidence that it's effective in the treatment of fibromyalgia and low back pain, so there are still important doubts as to whether it works.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	1	Green	1 (68)
OA	1	Green	1 (30)
FM	2	Green	2 (103)
LBP	2	Green	1 (94)

**Imagery, also called visualisation, is a mind-body relaxation technique that promotes relaxation and physical healing.**



## Magnet therapy (static magnets)

RA OA FM LBP

### What is (static) magnet therapy?

Sometimes called magnetic therapy or magnotherapy, static magnet therapy is a treatment approach in which magnetic fields are administered by placing magnets on the skin, or by incorporating them into jewellery, belts, arm and leg wraps, mattress pads or shoe inserts.

### How might it work?

It has been claimed that magnetic fields exist in the blood, organs and other parts of the body, and that people become ill when their magnetic fields have decreased. Some experiments suggest that magnets might affect how cells work.<sup>1</sup> It has also been reported that magnetic fields promote increased blood flow through the skin and body tissues, which reduces pain.<sup>2</sup> There's little scientific evidence to support these claims.

### Where do I get it from?

There's no reliable source of information about the availability of static magnet therapy. Most magnets are bought over the counter without any consultation with a healthcare practitioner, and annual worldwide sales exceed £2.5 million.<sup>3</sup>

### What is the evidence that it works?

Three trials examined the effectiveness of static magnet therapy for osteoarthritis of the knee, using magnets at the site of pain, while two further trials examined magnets worn on the wrist, regardless of the site of pain. There were also two trials for fibromyalgia (one of which was excluded when we came to our conclusions about the therapy), two for low back pain and one for rheumatoid arthritis.

### Rheumatoid arthritis

**Trial 1 †** – This trial compared the effect of Megabloc Device, a static magnet device with a strong magnetic field (190 milliteslar, or mT), with a control device of weaker magnetic strength (72 mT) in 64 participants with knee arthritis.<sup>4</sup> Participants were randomised to wear one of the magnets around their knee for one week.

- Although both groups reported a significant reduction in pain over the course of the week, there was no significant difference between the high- and low-strength magnet groups.
- The high-strength group reported a significant improvement in the overall assessment of their disease, compared to the control group.

### Osteoarthritis

**Trial 1** – In the first trial, 29 participants with osteoarthritis of the knee were randomised to wear knee sleeves with high (4–85 mT) or low magnetic strength (0.065 mT), six hours a day, for six weeks.<sup>5</sup>

- After four hours of treatment, patients using higher strength sleeves reported reduced pain compared to the corresponding group.
- By the end of the six weeks, the trial found no difference in reporting of pain, stiffness and physical function between the two groups.

**Trial 2** – The second trial examined the effectiveness of magnetic knee wraps among 50 participants with knee osteoarthritis.<sup>6</sup> Participants were randomised to wear either a magnetic knee wrap (35 mT) or a sham wrap for 12 weeks. The wraps were worn on the painful knee while the patients were awake, except when bathing.

- After the treatment period, a significant increase in the strength of the leg and across the knee joint, and a decrease in disease-related disability, was seen in participants wearing the magnetic wrap compared to the control group.
- There was no difference between the groups in terms of pain score.

**Trial 3 †** – In the third trial, 43 patients with knee osteoarthritis were randomised to wear magnetic pads (40–56 mT) or identical sham pads for two weeks.<sup>7</sup> At the end of the treatment, significant improvements were seen in terms of pain, physical function and walking speed in the magnet group compared to the treatment group.

**Trial 4** – In this trial, 194 participants with hip and knee osteoarthritis were randomly assigned to wear either a standard-strength static magnet bracelet (170–200 mT); a weak magnetic bracelet (21–30 mT); or a non-magnetic steel bracelet.<sup>8</sup>

- Following the treatment, participants wearing standard magnets had significant reduction of pain and stiffness, and improvement in physical function compared to those who wore non-magnetic bracelets.
- The improvements were similar between those who wore strong and weak magnetic bracelets.

**Trial 5** – The 45 participants of this trial had osteoarthritis of the hips, knees, wrists or hands. They were randomised to wear four different devices: a magnetic wrist strap; a weak magnetic wrist strap; a demagnetised wrist strap; or a copper bracelet. These were worn in random order for 16 weeks.<sup>9</sup> At the end of the treatment, no differences were found between the four groups in terms of pain reduction, stiffness, physical function and painkiller use.

## Fibromyalgia

**Trial 1** – Over a six-month period, 119 participants were randomised to receive a new mattress containing magnets designed to expose the individual to a uniform 395 mT magnetic field; magnets designed to expose the individual to a varying 75 mT magnetic field; inactive magnets; or to a fourth group who received usual care (no new mattress).<sup>10</sup>

- After six months of treatment, participants in all groups showed a reduction in pain and an improvement in function.
- None of the comparisons revealed that any treatment had a significantly greater improvement than another.

**Excluded trial** – A second trial into fibromyalgia was identified in which 30 female participants were randomised to sleep on either a magnetic mattress (20–60 mT) or on an identical but non-magnetic mattress for 16 weeks.<sup>11</sup>

- Those who slept on magnetic mattresses had significant benefits in pain, sleep quality, fatigue and tender points.
- No such benefits were observed in those who slept on non-magnetic mattresses.

No formal comparison was made between treatment groups so it's not possible to conclude whether one treatment resulted in a significantly better outcome than the other. For this reason, the trial has been excluded when considering our recommendations.

## Low back pain

**Trial 1** – The first trial randomised 20 participants into two groups. One group applied a rubber-like flexible magnetic device on their skin (30 mT) and another applied an identical but non-magnetic device. Both groups did this six hours a day for three days.<sup>12</sup> At the end of the treatment, the trial found no difference in reduction of pain intensity and stiffness between the groups.

**Trial 2 †** – In the second trial, 12 participants were randomised to wear a magnetic belt with either high (1,200 mT) or low (500 mT) magnetic strength.<sup>13</sup> They were advised to wear the belts for as long as possible, including when sleeping. After four weeks of treatment, no significant difference was found between the two groups with respect to pain intensity, function and lumbar flexibility.

### Is it safe?

While exposure to high magnetic fields can be dangerous, static magnet therapy is generally considered safe. Side-effects are rare, but skin reddening where the magnet was applied has been reported. No side-effects were reported in any of the above trials, with the exception of one case of skin irritation while wearing a knee wrap.<sup>6</sup>

Those who use medical devices like pacemakers or insulin pumps should consult their doctor before using this therapy as some magnets may interfere with the equipment.<sup>14</sup>

## Conclusion

Static magnet therapy is a treatment in which magnets are placed on or near the skin with the intention of reducing the symptoms of arthritis and rheumatism. High-strength magnets may interfere with medical devices, although most therapeutic magnets aren't strong enough to cause any problems. Aside from this, it's considered a safe treatment. There's little evidence that magnet therapy is effective in osteoarthritis, and the evidence suggests that it's not an effective treatment for rheumatoid arthritis, fibromyalgia or low back pain.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	1	Green	1 (64)
OA	2	Green	5 (361)
FM	1	Green	1 (119)
LBP	1	Green	2 (32)

# Massage



## What is massage?

Massage is a method of manipulating muscle and connective tissue using pressure, traction and touch to reduce pain and encourage relaxation and well-being.<sup>1</sup> There are various types of massage, including Swedish massage (which includes both massage and exercises), Thai massage (which includes stretching and deep massage), and connective tissue massage and manual lymphatic drainage (which are more passive for the patient). The techniques used in massage include stroking, kneading, friction, rhythmic tapping, joint mobilisation, vibration and shaking, and therapists often use oil to help their hands move smoothly over the patient's body. A typical session lasts for 30–60 minutes, and usually one to two sessions per week are recommended for four to eight weeks.

## How might it work?

Massage may help to reduce inflammation, encourage muscle relaxation and stimulate healing of connective tissues or damaged muscles.<sup>2</sup> Mechanical pressure and friction from the therapist's hands can increase blood circulation. Deep mechanical massage and connective tissue massage have been reported to increase blood flow, and reduce tension and anxiety, although the biological mechanisms aren't fully understood.<sup>1</sup>

## Where do I get it from?

Massage is practised by a number of healthcare professionals, including aromatherapists, chiropractors, osteopaths and physiotherapists, as well as massage therapists. A list of practitioners can be found on the websites for the Complementary and Natural Healthcare Council ([www.cnhc.org.uk](http://www.cnhc.org.uk)) and the General Council for Massage Therapies ([www.gcmt.org.uk](http://www.gcmt.org.uk)).

## What is the evidence that it works?

One trial has been identified examining the use of massage for osteoarthritis. A review article summarised the results of seven trials for fibromyalgia, and a Cochrane review identified 13 trials for low back pain. Two further low back pain trials were published after the review.

## Osteoarthritis

**Trial 1 †** – In this trial, 68 adults with osteoarthritis of the knee were assigned either to massage treatment or waiting list control.<sup>3</sup> The treatment group was provided a Swedish massage session twice a week for four weeks, then weekly for a further four weeks. At the end of treatment, significant improvements in pain, stiffness and physical function were seen in the massage group compared to the control group.

## Fibromyalgia

**Review** – The trials included in this review had a range of 19–50 participants.<sup>4</sup> Treatment sessions lasted 20–60 minutes, and the number of sessions ranged from 10–15.

- Five out of six of the trials reported greater benefits of massage therapy with respect to a reduction in pain, compared to the corresponding control groups.
- There was some evidence across the trials of improved stiffness, fatigue, depressive symptoms and quality of life, although these weren't consistent.
- In some of the trials, longer-term follow-up showed that the effectiveness of massage had decreased, suggesting the treatment only has short-term benefit.

**Excluded trial** – A seventh trial which was also included in the above review compared massage with standard care and follow-up phone calls from a nurse. The treatment group showed some improvement after five weekly massage sessions, but because the authors didn't make any formal comparison to determine whether such an improvement was greater than that in the control group, it's not possible to draw conclusions from this trial.

## Low back pain

**Cochrane review** – In total, 1,596 patients with acute, sub-acute and chronic low back pain were involved in the 13 trials identified in this review.<sup>5</sup> The number of participants in each trial ranged from 24–262 and the number of massages provided varied from a 1–10 sessions over a period of one to eight weeks. The type of massage provided also differed across the trials: two compared massage with sham treatment; two compared different massage techniques; and the remaining trials compared massage with other active treatments such as relaxation, physical therapy, self-care education or acupuncture. Five trials examined massage as an adjunct to another treatment; others examined massage as an alternative to another treatment.

The authors of the review concluded that:

- massage was beneficial in treating sub-acute and chronic low back pain
- massage was more effective when combined with exercise and education
- the beneficial effects of massage for chronic low back pain may last for more than a year after the end of the treatment.

**Trial 1** – This trial included 579 participants with chronic or recurrent low back pain.<sup>6</sup> Approximately one quarter of participants were randomised to each of the following groups:

- normal GP care
- massage
- six lessons of the Alexander technique
- 24 lessons of the Alexander technique.



Participants' pain was reassessed at three months. (Note: the group receiving 24 lessons of the Alexander technique were still having treatment at this point.)

- At the three-month follow-up, compared to the usual GP care group, those who received massage reported a significant reduction in low back pain-related disability and in the number of days in pain.
- The improvement in disability wasn't long term, although the number of days in pain was still significantly reduced, compared to the control group, at the one-year follow-up.
- Compared to those who received normal care, participants in the Alexander technique groups reported a significant improvement in disability and a decrease in the number of days of pain in the previous four weeks. These improvements remained after 12 months.
- Although the improvement was greater in the 24-lesson group, no formal comparison between the two therapy groups was presented, so we can't say for certain whether extra lessons gave additional benefit.

**Trial 2 ‡** – The 36 participants in this trial were randomly allocated to receive a 30-minute session of either Thai massage or control (bed rest) for one session.<sup>7</sup>

- Massage was associated with a significant reduction in pain intensity, anxiety and muscle tension, and improvements in flexibility immediately after treatment.
- Any longer-term effects – even a few hours after treatment – weren't investigated.

Note: This trial focused on 'back pain'. Although low back pain isn't mentioned explicitly, this trial has been included because the massage approach focused on the low back.

### Is it safe?

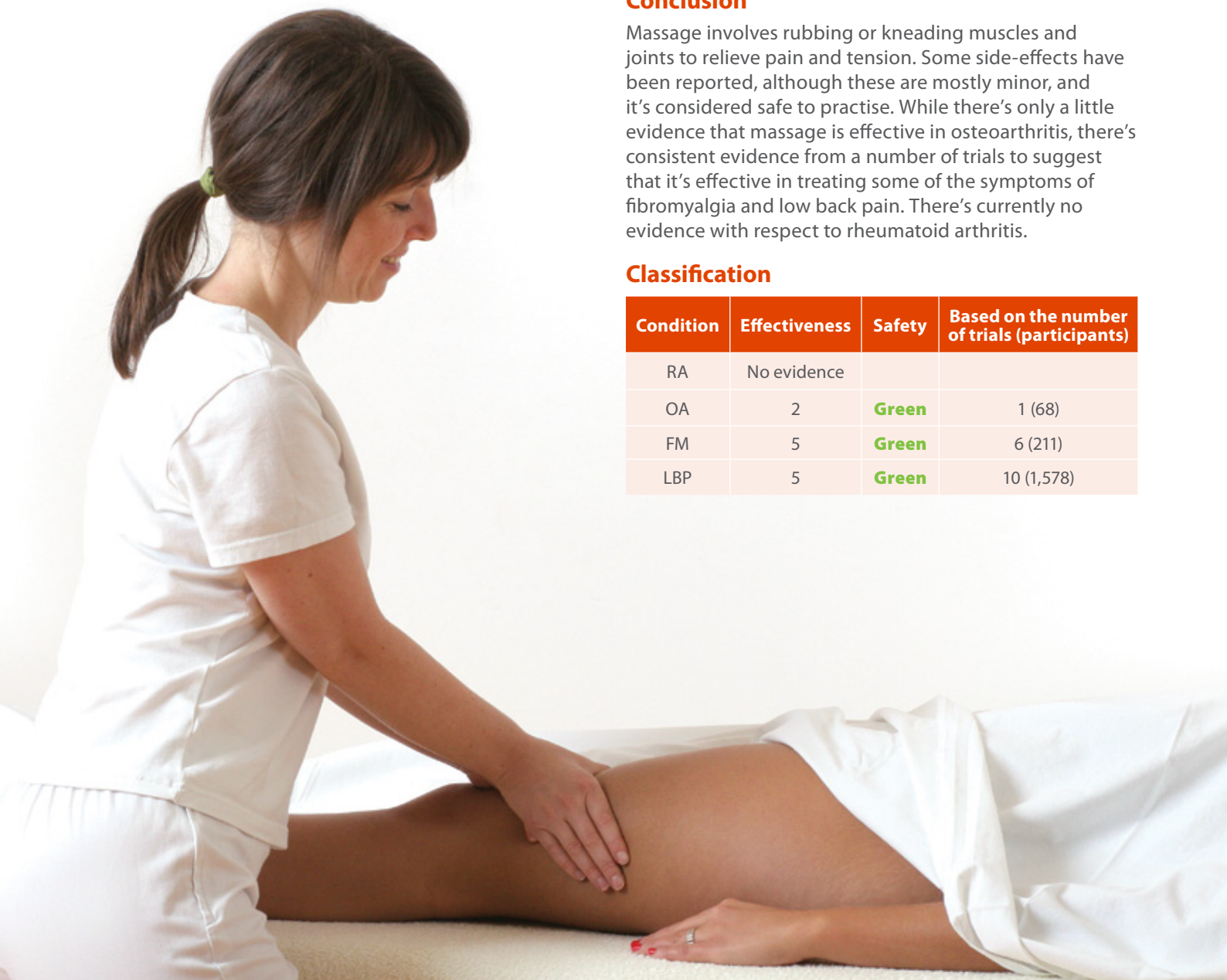
A systematic review of the safety of massage concluded that while the therapy isn't completely risk-free, side-effects are rare (although more common when performed by an untrained individual) and serious side-effects are more rare still.<sup>8</sup> Some cases of muscle soreness during or after the treatment have been reported, as have minor skin irritations and increased pain. Massage oil may cause allergic reactions.<sup>5</sup>

### Conclusion

Massage involves rubbing or kneading muscles and joints to relieve pain and tension. Some side-effects have been reported, although these are mostly minor, and it's considered safe to practise. While there's only a little evidence that massage is effective in osteoarthritis, there's consistent evidence from a number of trials to suggest that it's effective in treating some of the symptoms of fibromyalgia and low back pain. There's currently no evidence with respect to rheumatoid arthritis.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	2	Green	1 (68)
FM	5	Green	6 (211)
LBP	5	Green	10 (1,578)



# Meditation



## What is meditation?

Meditation includes a varied range of techniques that help to focus attention and bring a state of self-awareness and inner calm. It's a personal experience and is most often done without any external involvement. Meditation practice can be divided into two major classes:

- Concentration meditation involves restricting attention to a single point or object, such as listening to the breath, repeating a chant (mantra) out loud or to oneself, or holding a visual object in the mind for extended periods (usually 20–60 minutes).<sup>1</sup>
- Mindfulness meditation involves observing sensations, thoughts or emotions without making judgements about them. It's concerned with developing moment-to-moment awareness during the meditative process as well as in everyday life.

Meditation may refer to the process of reaching this state or to the state itself. Some believe that positive health effects from meditation build up from daily practice, and those who practise are recommended to do so for 15–20 minutes, twice daily.

## How might it work?

Previous trials have demonstrated that meditation can bring generalised reduction in specific physiological and biological functions such as oxygen use, breathing and heart rate, stress hormones and brain activity.<sup>2</sup> These changes are considered as the characteristics of a deep state of relaxation. It's possible that physiological changes that occur during the state of relaxation could have positive health effects, but specific mechanisms remain unknown.

## Where do I get it from?

Meditation can be done privately or under instruction (either individually or in classes). It's mainly taught by religious or quasi-religious groups, although users don't need to be religious. Further information about mindfulness meditation is available from [www.getselfhelp.co.uk/mindfulness.htm](http://www.getselfhelp.co.uk/mindfulness.htm)

## What is the evidence that it works?

Two trials that examined the use of meditation in rheumatoid arthritis were found, as well as a further two for fibromyalgia and three for low back pain (one of which was excluded when we made our recommendations about the therapy).

## Rheumatoid arthritis

**Trial 1** – In the first trial, participants were randomised to eight weeks of either cognitive behavioural therapy (52 people); mindfulness meditation and emotion regulation therapy (48 people); or education only (44 people).<sup>3</sup>

- After eight weeks of treatment, participants in all groups reported a significant decrease in pain.
- There was no evidence to suggest that the meditation group did any better – or worse – than those in either of the other two groups.

**Trial 2** – In the second trial, 31 participants were randomised to an initial eight-week mindfulness-based stress-reduction programme, followed by three refresher courses over the following four months.<sup>4</sup> A further 32 participants were randomised to a waiting list control group.

- There were no significant differences between the two groups in disease activity score, which was based on a mixture of participants' assessment of disease, and various clinical outcomes (such as number of tender and swollen joints and clinical indicators of inflammation) two and four months after the start of treatment.

## Fibromyalgia

**Trial 1** – In the first trial, a total of 177 female participants were randomised to eight weeks of one of the following:

- a mindfulness-based stress-reduction programme, where they practised mindfulness meditation and mindfulness yoga
- an active control group, where they were given the combination of activities (such as education, relaxation and stretch exercise) without the mindfulness element
- a waiting list group.<sup>5</sup>

Eight weeks after treatment, no significant difference in the overall health-related quality of life, disease impact, pain perception and sleep was found between the three treatment groups.

**Trial 2 †** – In the second trial, 128 participants were randomly assigned to a mind-body programme that combined mindfulness meditation training with qigong (see section 'Qigong'), or to an education (control) group.<sup>6</sup> The programme was delivered weekly for eight weeks and each session lasted for two-and-a-half hours.

- At the end of the treatment, and at a 24-week follow-up, there was significant reduction in pain and disease-related disability in both groups.
- There was no evidence to suggest that the meditation group did any better than those in the control group.

## Low back pain

**Trial 1 ‡** – In this trial, 36 participants were randomly separated into equal groups. Half received breath therapy and half physical therapy.<sup>7</sup> At the end of treatment, and at a six-month follow-up, there was no difference between the groups in terms of a reduction in pain, disability or general health.

**Trial 2 –** A total of 37 participants were randomised to either an eight-week mindfulness-based meditation programme or to a waiting list control group.<sup>8</sup>

- At the end of the treatment and at a three-month follow-up, no significant difference was found between the two groups in terms of pain and disease-related disability or quality of life.
- Other outcomes, such as pain acceptance, engagement in activities and physical function, were significantly improved in the meditation group compared to the control group.

**Excluded trial –** A third low back pain trial was identified in which 43 participants were randomised to receive either standard care (25 people), or eight weekly 90-minute group sessions of loving-kindness meditation (18 people).<sup>9</sup>

At the end of treatment, although significant improvements in pain and psychological distress were reported in the loving-kindness group, no formal comparison was made between treatment groups, so it's not possible to conclude whether one treatment caused a significantly better outcome than the other. For this reason, the trial has been excluded when considering our recommendations.

## Is it safe?

No significant side-effects of meditation were reported in the trials. Isolated accounts suggest pre-existing depression may become worse, and there's a risk that the therapy may cause epileptic fits and schizophrenic episodes, but these are rare. Meditation is generally considered to be safe to practice.

## Conclusion

Meditation is a technique that helps to focus attention, and bring about a state of inner calm and relaxation. It's generally considered safe to practise, but the evidence suggests that it's not effective in the treatment of rheumatoid arthritis or fibromyalgia, and only limited evidence supports its use in low back pain. There's currently no evidence with respect to osteoarthritis.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	1	Green	2 (207)
OA	No evidence		
FM	1	Green	2 (305)
LBP	2	Green	2 (73)



# Music therapy

RA OA FM LBP

## What is music therapy?

Also known as acoustic or auditory stimulation, music therapy is the methodical use of music to achieve physical and psychological relaxation.<sup>1</sup> A wide range of settings and music can be tailored according to the needs and goals of the individual. Users can also be actively involved in the music; for example, by playing instruments, writing songs and discussing the lyrics. Music therapy techniques can be included in other psychotherapy/rehabilitation practices. There's no time limit for a typical session, and the course of treatment may vary depending upon the condition.

## How might it work?

Relaxation brought about by music therapy is believed to affect breathing and heart rate, and blood pressure. In addition, it may ease pain because stress levels and stress hormone production are reduced. No musical talent or experience is needed, but the therapy's effect may depend upon individual music preferences.

## Where do I get it from?

Music therapy is available in some NHS clinics, community-based services and through private referrals. More information on availability can be found via the Association of Professional Music Therapists ([www.apmt.org](http://www.apmt.org)).

## What is the evidence that it works?

One trial was found that investigated the use of music therapy in osteoarthritis. A second looked at fibromyalgia.

### Osteoarthritis

**Trial 1 ‡** – In this trial, 33 participants were randomised to listen to music (Mozart) and 33 were asked to sit in a 'quiet, comfortable place' for approximately one hour, every morning, for 14 days.<sup>2</sup> Pain was measured after 20 minutes of treatment on the first, seventh and 14th day.

Participants in the music group reported significantly reduced pain at all three time points, compared to the control group, although no longer-term pain data was collected.

### Fibromyalgia

**Trial 1 ‡** – A trial investigated the immediate effect of music and musical vibration on tender-point pain in 26 participants with fibromyalgia.<sup>3</sup> Participants were randomly assigned to a musical vibration group, which listened to high-frequency music, or a control group, which listened to low-frequency music. Both groups listened to the music for 30 minutes.

- Music showed no significant benefit for pain reduction.
- Significant improvements in the reduction of tender points after the treatment were demonstrated in both groups at the end of the treatment.

## Is it safe?

No potentially harmful effects of music therapy have been reported in the above trials. It's believed to be risk free.

## Conclusion

Music therapy involves the use of music to achieve physical and psychological relaxation. Although it's considered safe to practise, there's only little evidence to suggest that it's effective in the treatment of osteoarthritis and fibromyalgia. There's currently no evidence with respect to rheumatoid arthritis and low back pain.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	2	Green	1 (66)
FM	2	Green	1 (26)
LBP	No evidence		





## Osteopathy (spinal manipulation)



### What is osteopathy?

Osteopathy is a system of diagnosis and treatment for a wide range of medical conditions. It works with the structure and function of the body, and is based on the principle that well-being depends on the skeleton, muscles, ligaments and connective tissues all functioning together smoothly. Osteopathy focuses on total body health by treating and strengthening the musculoskeletal framework, which includes the joints and muscles, particularly those around the spine.

Treatment commonly includes a detailed consultation, self-help advice, and education about the problem and its management, but a key feature of osteopathy is spinal manipulation. In this report, we've only considered evidence relating to treatment that included some element of spinal manipulation which was performed by an osteopath. (Chiropractors and physiotherapists may use similar techniques.)

A typical osteopathy session lasts about 45 minutes, and a full course of treatment is usually lasts between three and six sessions, although more may be recommended.<sup>1</sup>

### How might it work?

Osteopathy follows the principle that the body has the ability to repair and defend itself. The body is treated as a single unit, so problems in one part are thought to affect the rest, and for it to work well, its structure must also work well. Osteopaths work to restore the body to a state of balance using touch, manipulation, stretching and massage to increase joint mobility, relieve muscle tension, improve blood and nerve supply to tissues, and help the body's own healing processes. They may also provide advice on posture and exercise to aid recovery, promote health and prevent symptoms returning. Osteopathic treatment doesn't alter a patient's disease, but it may help to ease side-effects, such as pain experienced through muscle spasms.

### Where do I get it from?

Osteopathy is available in the NHS in a limited number of areas – general practitioners and Primary Care Trusts can often advise whether it's available locally – but most osteopaths are accessed privately. Anyone practising as an osteopath must be registered with the General Osteopathic Council. Their website provides further information about osteopathy and includes a search facility for finding a practitioner ([www.osteopathy.org.uk](http://www.osteopathy.org.uk)).

## What is the evidence that it works?

The trials identified for osteoarthritis and fibromyalgia have been excluded when we came to our conclusion about the use of osteopathy for these conditions, but details of the trials can be found below. Three trials were identified that examined the therapy for low back pain.

### Osteoarthritis

**Excluded trial** – While there were no trials solely among people with osteoarthritis, 73% of the participants in a trial of people undergoing hip or knee surgery had hip or knee osteoarthritis.<sup>2</sup> One group of patients (25 with osteoarthritis) were randomised to receive osteopathic manipulative treatment; the other patients (19 with osteoarthritis) received a manual osteopathic-like treatment which didn't aim to improve bodily function. Both groups also received usual care.

- At the time of discharge from hospital, there was no difference between the groups in terms of pain or disability.
- Because it's not possible to examine the osteoarthritis group alone, this trial has been excluded when considering our recommendation in this report.

### Fibromyalgia

**Excluded trial** – In this trial, 24 female participants were randomised to receive either osteopathic manipulation; osteopathic manipulation plus educational material on how to self-treat tender points; the application of moist heat packs to their tender points; or no additional medication or treatment.<sup>3</sup>

- The authors state that they found significant findings in terms of pain and disability.
- No formal comparison was made between treatment groups, so it's not possible to conclude whether one treatment resulted in a significantly better outcome than the other. For this reason, the trial has been excluded when considering our recommendations.

### Low back pain

**Trial 1** – In the first trial, 239 participants were randomly assigned to one of three groups: osteopathy (79 people); one-to-one physiotherapy (80 people) or group exercise (80 people).<sup>4</sup> At a six-week follow-up, participants in all groups reported a reduction in pain-related disability.

**Trial 2** – In the second trial, participants were randomised to receive either osteopathic manipulative treatment (48 people); a light manual touch treatment that aimed to provide minimal therapeutic effect (sham osteopathy, 23 people); or no treatment (20 people).<sup>5</sup>

- At a one-month follow-up, those receiving osteopathy reported a significant improvement in pain and physical functioning compared to the no-intervention control group.
- While the improvement in pain remained at the three- and six-month follow-up assessments, the improvement in physical functioning didn't.
- The sham osteopathy group also reported significant improvement in pain and functioning at both follow-up points, compared to the no-intervention control group.
- There were no significant differences between the real and sham osteopathy groups.

**Trial 3** – A total of 178 participants were randomised to receive either osteopathic treatment (93 people) or standard care (85 people).<sup>6</sup>

At the 12-week follow-up, there was no significant difference found between standard care and osteopathic care in terms of pain or disability. However, the osteopathy group reported lower medication use and less physical therapy than the control group.

**Excluded trials ‡** – In this trial, 109 participants were randomised to receive osteopathy (41 people), short-wave diathermy (34 people) or sham diathermy (34 people).<sup>7</sup> No formal comparison was made between treatment groups so it's not possible to conclude whether one treatment resulted in a significantly better outcome than the other. For this reason, this trial has been excluded when coming to our conclusion about the therapy.

### Is it safe?

Very few trials provide information on the rates of side-effects in osteopathy, but the symptoms might be similar to chiropractic. Although these treatments involve a slightly different range of approaches, there is overlap: one trial of 465 participants who received chiropractic, osteopathy or physiotherapy found no difference in the likelihood of minor side-effects between chiropractic and osteopathy.<sup>8</sup> No serious side-effects were reported.

Common side-effects include tiredness, headaches, nausea, and mild pain at the site of manipulation, but they don't last long.<sup>8</sup> Sometimes a clicking noise can be heard during spinal manipulation. None of the above-mentioned trials reported any side-effects. In addition, a trial of osteopathic manipulation for short-term spinal pain reported no side-effects in 92 participants.<sup>9</sup> A second trial of 29 participants receiving osteopathy for acute neck pain reported that one person said their arm 'felt funny'.<sup>10</sup>

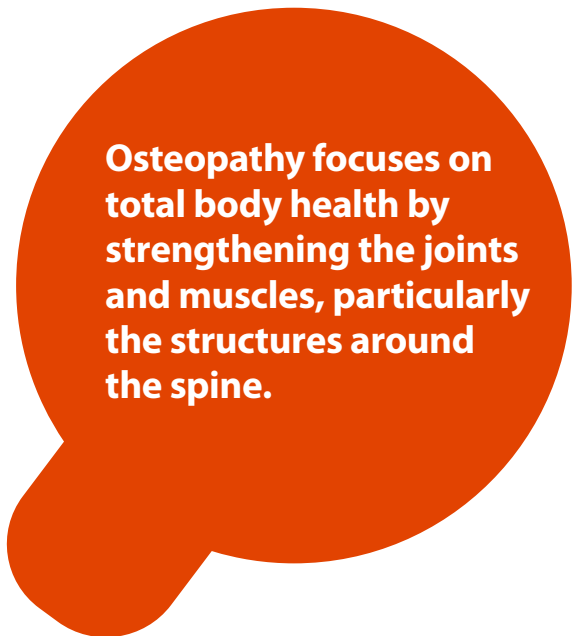
Several rare, serious side-effects have been attributed to spinal manipulation, but most of the evidence relates to spinal manipulation of the neck performed by chiropractors rather than osteopaths. This evidence is reviewed in the section on chiropractic.

### Conclusion

Osteopathy is the assessment and treatment of ill-health, especially musculoskeletal disorders and in particular those relating to conditions of the spinal column. Serious side-effects have been associated with spinal manipulation, although there's very little evidence relating to osteopathy specifically. However, minor side-effects are common and include pain, tiredness and nausea. There's currently no evidence with for rheumatoid arthritis, osteoarthritis and fibromyalgia, although there's promising evidence to suggest that it's effective in the treatment of low back pain.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	3	Amber	3 (508)





# Qigong (internal qigong)

RA OA FM LBP

## What is qigong?

Qigong is an Asian healing art that uses slow, graceful movements, controlled breathing and concentration on oneself and one's body to promote the circulation of 'qi' (life energy, pronounced 'chi') to improve health, vitality and healing.<sup>1</sup> Qigong has been described as 'a way of working with life energy' and is intended to work in harmony with the natural rhythms of the environment.<sup>2</sup> It's also known as chi gung, qui gong, ki gong, qi training and qi therapy.

Qigong consist of two different types of practice:

### Internal qigong

Internal qigong is self-directed and can be practised with or without a teacher.<sup>3</sup> The two main aspects of the practice are controlled or deep breathing with slow body movements as an aerobic exercise, and relaxation.<sup>4</sup> It often includes five steps:

1. meditation
2. cleansing
3. recharging/strengthening
4. circulating qi
5. dispersing qi.

Each step involves specific exercises, meditations and sounds. It's recommended that qigong is practised daily to achieve the greatest benefit. Individual sessions usually last for 30 minutes, and the best time to practise is said to be early in the morning or late in the evening.<sup>2</sup>

### External qigong

External qigong is performed by a trained practitioner who uses their hands and other body part to direct qi onto (or into) the patient.<sup>2</sup> The basis of external qigong is the belief that, after many years of practice, a user can develop the ability to manipulate qi outside their body.<sup>3</sup> However, external qigong is generally unavailable in the UK, so we haven't considered it in this report.

## How might it work?

According to Traditional Chinese medicine, ill health can be caused by blockages or imbalances of qi in the body. The exercises in internal qigong provide physical stimuli that are believed to improve balance, coordination and heart (cardiovascular) function. There's also some evidence that suggests they may improve hormone balance and immune function.<sup>5</sup>

## Where do I get it from?

The Health Qigong Federation UK (HQFUK) is the only professional organisation in Great Britain that's fully recognised by the Chinese Health Qigong Association (CHQA). Further information about the therapy, and its availability, can be found on the organisation's website ([www.healthqigong.co.uk](http://www.healthqigong.co.uk)).

## What is the evidence that it works?

Two trials were identified that investigated the effectiveness of internal qigong in the treatment of knee osteoarthritis. Its therapeutic effect for fibromyalgia was investigated in four trials, and one small trial examined its role among patients with low back pain.

### Osteoarthritis

**Trial 1** – In the first trial, 44 elderly subjects were randomised to an eight-week T'ai chi/qigong training programme (60 minutes per session twice a week) or a waiting list control group.<sup>6</sup>

- At the end of treatment, the qigong group reported a significant improvement in both physical and mental health compared to the control group, as well as a greater reduction in pain.
- It's difficult, however, to judge whether it was the T'ai chi or qigong, or both, that caused the results.

**Trial 2** † – In the second trial, 28 participants were randomised into equal groups of qigong or control.<sup>7</sup> The qigong group followed taped instructions for five 30-minute classes a week, over eight weeks, whereas the control group received no treatment.

- Compared with the control group, those who received qigong reported a significantly greater reduction in pain and stiffness, and an improvement in physical function.
- No significant difference between the groups was found in overall rating of quality of life.

### Fibromyalgia

**Trial 1** – In this trial, 30 children with fibromyalgia were randomised to a 12-week intervention of qigong (16 participants) or aerobic exercise (14 participants).<sup>8</sup>

- Those who received aerobics reported significant improvements in physical function, fatigue and quality of life, compared to the qigong group.
- There was no clear difference between the groups in terms of pain.

**Trial 2** † – In the second RCT, 29 participants were randomised to receive qigong therapy and 28 to waiting list control.<sup>9</sup> Those receiving qigong attended nine group sessions of 'Lotus method' qigong (He Hua Qigong) over 7 weeks and were encouraged to practise at home with the aid of audio-taped songs by Buddhist monks and nuns. This was a fairly small and poor-quality trial, and the results weren't written up adequately.

- Participants in the qigong group reported a significant reduction in pain intensity and increased ability to control pain compared to waiting list patients.
- Quality of sleep was improved, and anxiety and depressive symptoms were decreased in the qigong group.



**Trial 3 ‡** – In the third trial, 36 female participants were randomised to qigong plus body awareness therapy, or to a control group.<sup>10</sup> Treatment was provided once a week over three months (14 sessions). The control group was asked to continue with their normal daily activities without any changes. At the end of the treatment, no significant difference was found between the two groups in respect to symptoms and physical function, except for the harmony in body movement.

**Trial 4 ‡** – In the fourth trial, 128 participants were randomly assigned to a mind-body programme that combined mindfulness meditation training with qigong, or to an education (control) group.<sup>1</sup> The programme was delivered weekly for eight weeks and each session lasted two-and-a-half hours.

- At the end of the treatment and at a 24-week follow-up, there was significant reduction in pain and disease-related disability in both the groups.
- Both groups showed improvements in most trial outcomes – including pain, depression and disease-impact score – but there was no evidence to suggest that either group was superior.

### Low back pain

**Trial 1 ‡** – Eight participants were randomised to four 30-minute sessions of qigong (breathing and relaxation), while the same number were randomised to receive electro-myographic biofeedback (a therapy that monitors and provides feedback on muscle electrical activity).<sup>11</sup> Although the qigong group reported significant improvements in pain, it was no greater than the biofeedback group.

### Is it safe?

Evidence suggests that side-effects are rare if qigong is practised correctly. In two of the trials, participants complained that their symptoms became worse while standing still and they experienced difficulty in concentrating on the movements during the practice of qigong.<sup>10</sup> Other side-effects may include muscle soreness and psychological problems. As with any physical therapy, care is advised for patients with severe osteoporosis, severe heart conditions, acute back pain, knee problems, sprains and fractures.

### Conclusion

Internal qigong is a self-directed Asian healing art that aims to promote the circulation of 'life energy' in the body. The scientific understanding of how the treatment may work is limited, although it's generally considered safe to practise. There's only little evidence to suggest that it's effective in the treatment of osteoarthritis and fibromyalgia, and available data suggests that it's not effective for low back pain. There's currently no evidence with respect to rheumatoid arthritis.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	2	Green	2 (72)
FM	2	Green	4 (251)
LBP	1	Green	1 (16)



# Reflexology

RA OA FM LBP

## What is reflexology?

Reflexology (also known as zone therapy or reflex zone therapy) is a sophisticated system of touch, usually on the feet but sometimes on the hands, ears, face, tongue or back. Practitioners believe that it can be helpful in achieving and maintaining health and improving well-being, as well as relieving symptoms or causes of illness. A typical session lasts for 45–60 minutes, and it's often provided weekly over six to eight weeks, with the possibility of follow-up sessions offered for chronic conditions.<sup>1</sup>

## How might it work?

Reflexology is based on the belief that the entire body can be mapped on to specific zones on the feet, hands and ears. Pressure applied in these areas is thought to affect the organ or body part related to this area. There's some evidence of a connection between the points on the feet and reactions in the brain, but it's small and inconclusive.<sup>2</sup> Foot massage may have general health benefits regardless of any connection to reflexology.

## Where do I get it from?

Some NHS Primary Care Trusts (PCTs) will fund reflexology for certain conditions, but access is generally limited. Users tend to pay for private sessions.<sup>3</sup> Further information and a practitioner search can be found on the website of the Association of Reflexologists ([www.aor.org.uk](http://www.aor.org.uk)).

## What is the evidence that it works?

One review was identified on the use of reflexology generally that included a trial into reflexology for low back pain.<sup>4</sup> A separate trial was also found, but this has been excluded when we came to our conclusion about the therapy.

### Low back pain

**Review ‡** – In the review trial, 243 participants were randomised to receive six weeks of either weekly one-hour reflexology, weekly one-hour group-based relaxation, or usual care.<sup>5</sup>

- All three groups reported a reduction in pain over the six-month follow-up period, although there was no significant difference between the three treatment groups.
- There was no significant difference in physical functioning between the groups.

**Excluded trial** – In this trial, 15 participants were randomised to either reflexology or sham reflexology.<sup>6</sup> Both groups received 40-minute sessions once a week for six consecutive weeks, and participants in the sham treatment group received a simple foot massage instead of genuine reflexology.

Results suggest that the reflexology group may have achieved reductions in pain compared to the control group, but no formal comparison was made so it's not possible to conclude whether one treatment resulted in a significantly better outcome than the other. For this reason, this trial has been excluded when considering our recommendations.

## Is it safe?

There's no clinical evidence that suggests reflexology has any side-effects, but fatigue and changes in urine output or bowel function are possible.<sup>1</sup> Talcum powder or oils used during treatment may cause reactions, but the therapist should ask about potential allergies before treatment.

## Conclusion

Reflexology is a manual technique based on the theory that points on one part of the body – usually the feet – are linked to different areas of the body, and that massaging these specific points may ease symptoms that occur elsewhere. It's generally considered safe to practise, but available evidence suggests that it's not effective in the treatment of low back pain. There's currently no evidence with respect to rheumatoid arthritis, osteoarthritis or fibromyalgia.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	1	Green	1 (243)



# Relaxation therapy

RA OA FM LBP

## What is relaxation therapy?

Relaxation therapy uses techniques to bring about the 'relaxation response' of the autonomic nervous system, which controls body functions such as heart and breathing rate. The aim is to ease chronic pain. Reaching the relaxation response returns the muscles' blood supply to normal; decreases oxygen use, heart and breathing rate, and skeletal muscle activity; and increases skin resistance and alpha brainwaves.

Relaxation techniques include passive muscle relaxation, refocusing, breathing control or imagery. This report focuses on one of the most common techniques, progressive muscle relaxation, either on its own or in combination with another type of therapy. Relaxation can also be included in a range of other therapies (such as meditation or massage), but this report only considers it as a treatment in its own right.

Sessions of progressive muscle relaxation involve contracting and relaxing muscle groups in a particular order, building up to relaxing different muscle groups at the same time and eventually relaxing the whole body at once. The ability to bring about the relaxation response within seconds, using progressive muscle relaxation, would usually take several months of daily practice.<sup>1</sup>

## How might it work?

Progressive muscle relaxation is based on the idea that it's impossible to be tense in any part of the body where the muscles are completely relaxed.<sup>1</sup> The effects of relaxation could have positive health effects, but the specific ways it works – in particular in people with musculoskeletal disease – are unknown.

## Where do I get it from?

There's no formal accreditation for therapists and no official relaxation therapy association in the UK. Relaxation techniques are taught by various professionals, including not only complementary practitioners but nurses, physicians, clinical psychologists and sports therapists.

## What is the evidence that it works?

Two trials investigated the use of relaxation for rheumatoid arthritis, while a further three RCTs looked at its use for osteoarthritis, although one of these trials was excluded when we came to our conclusion about the therapy. Seven trials examined the effectiveness of relaxation in the treatment of fibromyalgia (of which four were excluded), and one systematic review was identified that investigated the effectiveness of various behavioural techniques – including progressive relaxation therapy, and relaxation in combination with other treatments – among patients with chronic low back pain.

## Rheumatoid arthritis

**Trial 1 ‡** – The 168 participants of this trial were randomised to receive either eight 50–60-minute sessions of relaxation response training (largely based on the Jacobson technique, a method of progressive muscle relaxation<sup>2</sup>); 12 sessions of cognitive behavioural therapy lasting 60–75 minutes each; or five 50-minute scripted talks and printed material about rheumatoid arthritis and its treatment.<sup>3</sup>

- At the 12-month follow-up, those in the relaxation and education groups reported an improvement in pain compared to baseline.
- There were no differences in outcome between the three treatment groups.

**Trial 2 ‡** – In the second trial, 68 participants were randomised to either five weeks of relaxation training based on the Jacobson technique, followed by five weeks of imagery techniques for pain reduction, or a control group.<sup>4</sup>

- Although relaxation wasn't associated with a decrease in pain, a significant improvement in self-care was observed immediately after treatment.
- Mobility and arm function was significantly improved in the relaxation group at the six-month follow-up. However, it's not possible to tell whether the relaxation or imagery, or combination of both treatments, caused this effect.

## Osteoarthritis

**Trial 1 ‡** – In the first trial, participants with hip or knee osteoarthritis were randomised to one of three groups: relaxation (13 people), hypnosis (13 people) or a control group (10 people).<sup>5</sup>

- At the end of treatment, the relaxation and hypnosis groups reported greater improvements in pain score than the control group, although there was no difference between the two former groups.
- No significant difference was observed between any of the three groups at the six-month follow-up.

**Trial 2 ‡** – Thirty participants were randomised to receive guided imagery with relaxation, or a sham treatment.<sup>6</sup> The relaxation group listened to an audio-taped script that included guided imagery and progressive muscle relaxation, as well as use of senses, relaxation induction and suggestion. The sham group was asked to rest. Both groups did this for 12 minutes, twice a day, for four months.

- At the end of the trial, participants in the relaxation group reported a reduction in pain and an improvement in mobility compared to the sham group.
- Differences were also observed in terms of medication use.
- However, it's not possible to judge whether the observed effects were due to the guided imagery or the relaxation, or whether it was the combination of the two.



**Excluded trial ‡** – The authors of this RCT reported a reduction in pain and mobility difficulties<sup>7</sup> and an improvement in quality of life<sup>8</sup> among participants receiving guided imagery with progressive muscle relaxation (listening to audio-taped scripts for 10–15 minutes, twice a day, for 12 weeks) compared with a usual care group. However, the quality of this trial is poor and it’s difficult to even work out how many participants were included: at one point, the authors state 28, and at another it appears to be 33. For these reasons, this trial has been excluded when considering our recommendation in this report.

### Fibromyalgia

**Trial 1 ‡** – In the first trial, 25 participants were randomised to receive Jacobson (progressive muscle relaxation) training, or hydro-galvanic bath therapy (low levels of electricity given to parts of the body while in water) over a period of five weeks.<sup>9</sup> There were no differences in pain between the groups at the end of treatment.

**Trial 2 ‡** – Progressive muscle relaxation was compared with massage therapy in 24 participants over a period of five weeks.<sup>10</sup> At the end of the trial, those who received massage therapy reported improvements in pain, stiffness, fatigue, sleep and a number of other outcomes, compared to those in the relaxation group.

**Trial 3 ‡** – In this trial, 45 participants were randomly assigned to receive one session of either hypnosis with relaxation suggestions; hypnosis with pain relief suggestions; or relaxation.<sup>11</sup> Both hypnosis groups received instructions to lead them into a deep hypnosis for about 10 minutes. The groups then did the following tasks for 20 minutes:

- The relaxation suggestions group were asked to imagine a relaxing image, things related to the image that could excite the senses, and associated sensations of relaxation and well-being.
- The pain-relief suggestions group were asked to imagine a liquid or blue painkiller stream that filtered through their skin, reaching different parts of the body, with suggestions of the liquid soothing the pain, getting rid of tension and creating feelings of well-being.
- The relaxation group were shown how to relax various parts of the body for five minutes, then were asked to focus on their breathing for 10 minutes, with feelings of well-being and relaxation being suggested for five minutes.

At the end of the session, all groups reported improvements in pain intensity, although the pain-relief suggestions group reported greater benefit than either of the other two groups.

**Excluded trial ‡** – Four trials examined the effectiveness of relaxation combined with either hypnotherapy<sup>12</sup> or biofeedback on fibromyalgia.<sup>13–15</sup> There was some evidence of an improvement in pain, fatigue, sleep and general health in the relaxation/hypnotherapy trial, but the three trials that combined relaxation and biofeedback found little or no evidence of effectiveness compared to control groups. Because it’s not possible to say whether any benefits were due to relaxation alone, these trials have been excluded when considering our recommendation in this report.

### Low back pain

**Systematic review** – Three trials, involving a total of 74 patients, were identified in this review.<sup>16</sup> The authors concluded that there was only low-quality evidence that progressive relaxation was more effective than a waiting list control for pain relief or for improving functional status in the short term.

### Is it safe?

There are no major side-effects associated with relaxation therapy, although techniques that involve inward focusing might make low mood worse.

### Conclusion

Progressive muscle relaxation is a treatment where patients learn to voluntarily relax the whole, or parts of, the body through tensing and relaxing of different muscle groups. It’s generally considered safe to practise. A reasonable number of trials, involving over 800 participants, have investigated the use of progressive muscle relaxation in musculoskeletal disease: while there’s little evidence that it’s effective in the treatment of rheumatoid arthritis and osteoarthritis, there’s promising evidence suggests that it may be useful for fibromyalgia and low back pain.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	2	Green	2 (236)
OA	2	Green	2 (66)
FM	3	Green	3 (94)
LBP	3	Green	3 (74)

# T'ai chi



## What is T'ai chi?

T'ai chi is a Chinese martial art which developed in the 13th century. Inspired by a fight between a snake and crane<sup>1,2</sup>, it combines meditation with slow, gentle, graceful movements, as well as deep breathing and relaxation.<sup>3</sup> T'ai chi has become increasingly popular in many Western countries due to the belief that it can improve mental and physical health. It features constant shifting of body weight between the legs, with both knees remaining flexible all the time.

T'ai chi is typically taught in a group of five to 10 people and a session may last several hours. Regular practice (at least twice weekly) is recommended to achieve health benefits.<sup>4</sup>

## How might it work?

According to Chinese medicine, good health is the result of the body's free-flowing vital energy ('qi'), and any illness is caused by a blockage of qi.<sup>1</sup> The alternating movements and postures practised in T'ai chi are believed to stabilise energies and create emotional balance. There's no scientific basis for this, but the slow movements between different postures may lead to improved muscle strength and function, balance and flexibility, which may affect the heart, breathing and muscles.<sup>5</sup>

## Where do I get it from?

Founded in 1991, the T'ai chi Union for Great Britain is the largest organisation in the UK, with over 800 registered instructors. Further information can be found on the union's website ([www.taichiunion.com](http://www.taichiunion.com)).

## What is the evidence that it works?

Two systematic reviews were identified that summarised the results of trials investigating the effectiveness of T'ai chi in the treatment of rheumatoid arthritis. The first review included three trials, while the second featured two. Another systematic review included nine trials which examined the therapy in treating osteoarthritis. A separate trial was also found for osteoarthritis and a further two for fibromyalgia.

## Rheumatoid arthritis

**Systematic review 1** – The number of participants in the three trials identified in this review ranged from 28–47. They were randomised either to a T'ai chi group, or a control group with no treatment or sham treatment.<sup>1</sup>

T'ai chi sessions were provided for between 60–90 minutes for 8–10 weeks.

- Two of the trials didn't find any difference in joint tenderness, swollen joints, grip strength and overall function between the T'ai chi group and the control group after the treatment period.
- The third trial (which investigated lower body part movement e.g. the ankle, hip and knee) found significant benefit in T'ai chi group compared to the control group.
- None of these trials assessed for improvement in pain or quality of life.

**Systematic review 2** – A total of 62 participants were included in the two trials featured here, which assessed the effectiveness of T'ai chi compared to education plus stretching exercise or usual care.<sup>6</sup> An hourly session of T'ai chi was provided for 6–12 weeks.

- Neither trial demonstrated any significant benefit of T'ai chi in terms of pain reduction.
- An improved ability of daily life performance was reported in one T'ai chi group compared to education and stretching exercise group.

## Osteoarthritis

**Systematic review** – T'ai chi was compared with an attention control programme (education and stretching) in three trials, and with usual care in two trials.<sup>7</sup> The remaining trials compared T'ai chi with a variety of control groups, including waiting list control, self-help and hydrotherapy. The number of participants ranged from 22–152, and treatment sessions lasted between 30–60 minutes over 10–24 weeks.

- Combined results from the six trials involving participants with osteoarthritis of the knee suggested that T'ai chi was beneficial in reducing pain and joint stiffness and improving physical function.
- The three remaining trials on people with osteoarthritis in multiple joints failed to show any beneficial effect of T'ai chi in pain reduction compared to the control groups. However, improvement in physical function was reported in one trial and improvement in quality of life in another.

**Trial 1** – In a separate trial, 44 elderly participants with osteoarthritis of the knee were randomised to an eight-week T'ai chi/qigong training programme (60 minutes per session, twice a week, for eight weeks) or to a waiting list control group.<sup>8</sup>

At the end of treatment, the T'ai chi/qigong group reported a significant improvement in both physical and mental health, compared to the control group. However, from this trial, it's difficult to tease out the effectiveness of T'ai chi and qigong separately.

## Fibromyalgia

**Trial 1** – In the first trial, 66 participants were randomised to receive either T'ai chi or wellness education and stretching exercises for 60 minutes, twice a week, over 12 weeks.<sup>3</sup>

- At the end of treatment, the T'ai chi group reported significantly greater improvements in health and disease impact, as well as improvements in mental health and quality of sleep, compared to the control group.
- These effects lasted up to the 24-week follow-up.

**Trial 2** – In the second trial, 183 participants were randomly assigned to receive education and T'ai chi, or relaxation for 10 weeks.<sup>9</sup>

- Four months after the start of treatment, the T'ai chi/ education group reported a greater improvement in overall impact of their condition, including reduction in fatigue, compared to the relaxation training group.
- No difference in pain reporting was found between the two groups.
- The improvements seen in the overall disease impact in the T'ai chi group didn't last up to eight months.

## Is it safe?

Reported side-effects of T'ai chi are rare. In Systematic review 1 for rheumatoid arthritis, approximately one third of participants from both trials reported muscle soreness in their knee, shoulder and lower back, or ankle sprains.<sup>1</sup> None of these symptoms caused participants to withdraw from the trials. Similar reports of minor muscle soreness and foot and knee pain were also reported in other trials.<sup>7</sup>

## Conclusion

T'ai chi is an ancient Chinese martial art that combines meditation, deep breathing and relaxation, with slow, graceful movements. It's generally considered safe to practise. There's little evidence that it's effective in the treatment of rheumatoid arthritis, although the data is more promising for fibromyalgia. A number of trials have looked at osteoarthritis and there's some consistency to the evidence suggesting that it's effective. However, benefits appear to be limited to symptoms of knee osteoarthritis, rather than multiple joints. There's currently no evidence for low back pain.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	2	Green	5 (170)
OA	4	Green	10 (523)
FM	3	Green	2 (249)
LBP	No evidence		



# Yoga

RA OA FM LBP

## What is yoga?

Yoga originated in India approximately 4,000 years ago. It includes combination of breathing exercises ('pranayam'), physical postures ('asanas') and meditation ('dhyana') to harmonise the mind and body.<sup>1</sup> It's widely practised and is one of most popular complementary and alternative therapies in the UK.

Yoga can be self-taught or learned with supervision, and a typical session lasts about 60 minutes. Maximum benefit is thought to be achieved through daily practice.

## How might it work?

It's believed that the main reason for ill health is the blockage of the body's vital energy (prana) due to poor diet, stress and environmental factors. There's little scientific evidence to support this, but regular practice of yoga may bring physical and mental benefits in the forms of muscular strength, relaxation and feelings of well-being. In addition, breathing exercises may reduce muscular spasm and increase lung capacity.<sup>2</sup>

## Where do I get it from?

Although yoga can be self-taught, it's recommended to learn under supervision. Information on the availability of teachers and training sessions can be found from professional organisations such as the British Wheel of Yoga ([www.yoga-east.org](http://www.yoga-east.org)) or the Iyengar Yoga Association ([www.iyengaryoga.org.uk](http://www.iyengaryoga.org.uk)). The practice of yoga is very common, and most sports and health centres offer classes.

## What is the evidence that it works?

One small trial was identified that investigated the potential benefits of yoga for hand osteoarthritis. Another RCT investigated the effectiveness of yoga among women with fibromyalgia. A recently published review identified seven trials that investigated the effectiveness of yoga on chronic low back pain.

## Osteoarthritis

**Trial 1 †** – Twenty-five participants were randomly allocated to 60-minute sessions of yoga, once a week for eight weeks, or to a waiting list control group.<sup>3</sup>

- One week after the end of treatment, the yoga group reported significant improvements in hand pain during activity, and joint tenderness, compared to the control group.
- There was also some evidence that finger range of motion was improved (in the right hand only).
- No differences between the groups were found for hand pain at rest and for function.

## Fibromyalgia

**Trial 1** – Participants were randomised to an eight-week yoga programme (25 women) or to a waiting list control group (28 women).<sup>4</sup>

- At the end of the treatment, compared to the control group, women assigned to the yoga programme reported significantly greater improvements in symptoms and overall disease impact, such as pain, fatigue, stiffness, depression and engagement in activity, as well as improved ability to cope with pain.
- No significant differences between groups were reported with respect to joint tenderness and sleep.

## Low back pain

**Review** – The trials included in the review compared the effectiveness of various types of yoga with other treatments, such as exercise and education, or with waiting list controls.<sup>5</sup> The number of participants ranged from 20–101 and trials lasted from 1–24 weeks. With the exception two small trials, all reported significant benefits immediately after treatment in terms of pain and disability reduction.

## Is it safe?

As with any type of physical activity, overstretching of joints, ligaments or muscles is possible, although teachers should help to aim sessions at participants' level of ability. The teacher should be made aware of any injuries or pre-existing conditions before the start of the session, and pregnant women should avoid extreme postures.

## Conclusion

Yoga involves a combination of breathing exercises, physical postures and meditation. Although caution is advised for some individuals, it's generally considered safe to practise. There's little evidence for osteoarthritis and fibromyalgia, although there's some consistent evidence that yoga is effective in the treatment of low back pain. There's currently no evidence with respect to rheumatoid arthritis.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	2	Green	1 (25)
FM	2	Green	1 (53)
LBP	4	Green	7 (403)



**Over £450 million is spent on complementary and alternative medicine each year in the UK, with 26% of people having used it in the past year.**

**44% of people will use these treatments at some time.**



## Section 2

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# Other therapies

Only therapies which have suitable evidence from at least one RCT have an entry in Section 1. If treatments don't appear there, it means we couldn't find any reports of an RCT in which it was tested or that any trials found don't give enough information. This means it's not possible for us to tell whether this therapy works or not. In this section we list some commonly used therapies for which there's not enough evidence, so we can't make a conclusion about their safety and effectiveness.

# Crystal healing

RA OA FM LBP

## What is crystal healing?

Crystal healing practitioners take a holistic view of patients, so physical health is seen as part of a larger picture that includes their emotions, mental state, lifestyle and aspirations. Selected crystals are placed on or around the patient and left for a few minutes or longer before they're moved to new positions. This is repeated as many times as thought necessary. A typical session will run for approximately 45–60 minutes, with a brief profile and medical history taken on the first visit.<sup>1</sup>

## How might it work?

Practitioners believe that placing crystals close to perceived imbalances of energy may encourage the body's own healing processes to become more effective. There's no evidence to support this theory, and crystal healing has no known scientific basis.

## Where do I get it from?

The Crystal and Healing Federation website provides a list of members of the Affiliation of Crystal Healing Organisations and British Crystal Healers Professional Practitioner Register UK ([www.crystal-healing.org/practitioner\\_register.htm](http://www.crystal-healing.org/practitioner_register.htm)). The NHS Directory of Complementary and Alternative Practitioners website ([www.nhstadiirectory.org](http://www.nhstadiirectory.org)) has a search engine of registered practitioners. Users must register before a search can be done.

## What is the evidence that it works?

No RCTs were identified that investigated the effectiveness of crystal healing in the conditions we've considered here.

## Is it safe?

Crystal healing is considered to be a safe, non-invasive treatment.

## Conclusion

Crystal healing therapy involves the laying on of stones or crystals at various points on the body to re-establish the body's natural flow of energy. There's no scientific basis for this, but it's considered safe to practise. However, there's currently no trial evidence to suggest whether it's effective in the treatment of any of the conditions we're considering here.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	No evidence		





## Feldenkrais



### What is Feldenkrais?

Designed by Moshé Feldenkrais (1904–84), the Feldenkrais method is a mind/body technique that encourages awareness of body movement. Feldenkrais is similar to the Alexander technique in that both assume that changing habitual movements can improve pain and function. However, they differ in their underlying beliefs and in a number of practical aspects: the Feldenkrais method, for example, doesn't directly address posture.<sup>1</sup>

Feldenkrais is often taught in group sessions, where patients are led through a series of movements by a practitioner, but one-to-one sessions with close supervision and manipulation are also available. Sessions typically last up to an hour. After learning the techniques, patients are encouraged to practise them regularly. Practitioners tend to recommend Feldenkrais alongside other treatments.<sup>2</sup>

### How might it work?

Practitioners of Feldenkrais believe that by learning about bodily action, poor habits that may have a negative effect on health can be replaced with new movements that have a more positive effect. Any biological mechanisms underlying this assumption haven't been established.<sup>2</sup>

### Where do I get it from?

According to the professional organisation of practitioners, The Feldenkrais Guild UK, there are around 100 teachers in the UK. Further information and a list of teachers and contact details can be found at [www.feldenkrais.co.uk](http://www.feldenkrais.co.uk)

### What is the evidence that it works?

A systematic review of the Feldenkrais method was identified that contained one trial among patients with low back pain.<sup>3</sup>

#### Low back pain

**Systematic review †** – In the identified trial, 26 patients were randomly assigned to receive a 30-minute session of either Feldenkrais or a control treatment.<sup>4</sup> Participants were asked to adopt a comfortable position on the floor, not talk, and listen to an audio-tape. Those in the Feldenkrais group were given an instructional tape about awareness through movement, which guided them through gentle breathing exercises and visualisations. The control group listened to a story.

Those who received Feldenkrais reported an improvement in affective pain score (the emotional aspect of pain; feeling pain as unpleasant), whereas the control group reported a significant decrease in the sensory pain score (the physical aspect of pain). However, no formal comparison was made between treatment groups so it's not possible to conclude whether one treatment resulted in a significantly better outcome than the other. This means the trial can't be included when considering our recommendations.

#### Is it safe?

There are no known side-effects associated with Feldenkrais, and any risks are expected to be small.

#### Conclusion

Feldenkrais is a treatment where the user learns to improve their body's ability to move and function. It's generally considered safe to practise, but there's currently no trial evidence to suggest whether it's effective for the conditions we've considered here.

#### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	No evidence		

# Kinesiology (applied kinesiology)

RA OA FM LBP

## What is applied kinesiology?

Initially developed by a chiropractor in the 1960s, kinesiology is a system that uses manual muscle testing and other more standard methods to diagnose physical and mental health.<sup>1</sup> It's sometimes described as a 'blend of the principles of Traditional Chinese medicine and Western techniques'. Kinesiology depends on the idea that every abnormal organ function is accompanied by a specific muscle weakness, and that these weaknesses can be addressed following muscle-testing procedures.<sup>2</sup> It's more of a diagnostic method than a treatment. After 'diagnosis', a variety of different treatment methods may be suggested, often based on chiropractic/osteopathy.

At a typical session, a medical history would be taken, usually followed by muscle testing for diagnostic purposes. This leads to the provision of different types of complementary treatments, such as acupuncture and/or advice related to nutrition or allergies. The first session will last around 90 minutes, although follow-up sessions are usually shorter.<sup>3</sup>

Applied kinesiology is different from human kinetics (the science of human movement), which forms the basis for a number of rehabilitation professions, such as physiotherapy. The two disciplines are often confused, not least because 'kinesiology' is sometimes used to refer to both practices. In this report we only consider applied kinesiology (i.e. as a complementary therapy) and won't consider kinetics.

## How might it work?

Supporters of applied kinesiology believe that the inability of certain muscle groups to stay contracted in response to light pressure is associated with health problems or emotional stress. Through this, a practitioner can diagnose and treat these issues. There's no scientific evidence to support this theory.

## Where do I get it from?

In the UK, information about the availability of local practitioners can be found via the Kinesiology Federation ([www.kinesiologyfederation.co.uk](http://www.kinesiologyfederation.co.uk)) or the International College of Applied Kinesiology ([www.icak.co.uk](http://www.icak.co.uk)).

## What is the evidence that it works?

A review summarised the therapeutic effectiveness of the therapy on various medical conditions such as eczema, headache and breast pain, and concluded that there's not enough evidence to say that applied kinesiology gives accurate diagnoses or that it's effective for any medical condition.<sup>4</sup>

No RCTs were identified that investigated the effectiveness of applied kinesiology in the conditions considered in this report.

## Is it safe?

The lack of trial evidence makes it difficult to assess whether side-effects should be expected, although risks are expected to be minor. Applied kinesiology often occurs in the context of osteopathic or chiropractic treatment, so the safety information in these sections should be consulted.

## Conclusion

Applied kinesiology is a therapy that may include parts of several different complementary treatments, although a key element is the use of manual muscle testing. There's no good evidence that applied kinesiology is a valid diagnostic or treatment method, and there's currently no evidence for its effectiveness in the treatment of the conditions considered in this report.

## Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	No evidence		

## Shiatsu

RA OA FM LBP

### What is shiatsu?

Shiatsu is a traditional Japanese therapy in which pressure is applied to certain points (acupoints) in the body. Although shiatsu literally means 'finger pressure', palm or elbow pressure, stretching, massaging and other manual techniques may also be involved.<sup>1</sup> Shiatsu focuses on the whole person (mind, body, spirit and environment as an interconnected whole) and all aspects of the individual's life-energy system in understanding the condition, making an energetic diagnosis and giving a treatment.<sup>2</sup> Normally, a treatment session lasts for an hour and the course of treatment varies according to the severity of the condition.

### How might it work?

Similar to other therapies that originated in the Far East, shiatsu is based on the belief that health is maintained by the smooth flow of life energy ('qi') through various pathways in the body, and that illness is caused by imbalances in the natural flow. Each acupoint is believed to represent a particular tissue, organ or system that reflects the body's physical condition, so stimulating these is thought to restore the normal movement of qi. There's no scientific evidence to support this theory, but shiatsu may affect the nervous and muscular systems, and the soft-tissue manipulation may improve blood circulation and reduce muscle pain.<sup>1</sup> Regular sessions are believed to release tension and aid relaxation.

### Where do I get it from?

Further information and details on finding a local practitioner or training school is available from the Shiatsu Society UK ([www.shiatusociety.org](http://www.shiatusociety.org)).

### What is the evidence that it works?

No RCTs were identified that investigated the effectiveness of shiatsu in the conditions we've considered here.

### Is it safe?

Mild to moderate pain during application of pressure has been reported, but shiatsu is generally considered safe.

### Conclusion

Shiatsu is a traditional Japanese therapy. It's similar to acupuncture, but instead of needles, pressure is applied to points on the body using the fingers or hands. Pain or discomfort may be felt during treatment, but it's generally considered a safe treatment. There's currently no trial evidence to suggest whether shiatsu is effective in the treatment of the conditions considered here.

### Classification

Condition	Effectiveness	Safety	Based on the number of trials (participants)
RA	No evidence		
OA	No evidence		
FM	No evidence		
LBP	No evidence		



# Summary

In this section, we've given a summary of the evidence for the effectiveness and safety of each therapy. Effectiveness is rated on a six-point scale:

<b>No evidence</b>	No trials have been identified, so we can't make a judgement about whether the therapy is effective or not.
<b>1</b>	Overall, there's no evidence to suggest that the therapy works or only a little evidence which is outweighed by much stronger evidence that it doesn't work.
<b>2</b>	There's only a little evidence to suggest the therapy might work. The evidence in this category often comes from one or two low-quality trials which have reported positive results, and there are therefore important doubts about whether or not it works.
<b>3</b>	There's some promising evidence to suggest that the therapy works. The evidence will be from more than two low-quality trials, or from a large, high-quality trial; however, there may also be some trials showing that it doesn't work. Therefore, we're still uncertain whether therapies in this category work or not.
<b>4</b>	There's some consistency to the evidence, which will come from at least three trials (one of high quality), to suggest that the therapy works. Although there are still doubts from the evidence that it works, on balance we feel that it's more likely to be effective than not.
<b>5</b>	There's consistent evidence across at least two high-quality trials to suggest that the therapy is effective.

Safety is graded using a traffic-light system:

<b>Green</b>	Therapies in this category are reported to have mainly minor and infrequent side-effects. A green classification doesn't mean that the compound has no reported side-effects.
<b>Amber</b>	Therapies with an amber rating have commonly reported side-effects (even if they're mainly minor symptoms) or more serious side-effects.
<b>Red</b>	Therapies with a red rating have serious reported side-effects.

Therapy	RA	OA	FM	LBP	Safety
Acupuncture	1	5	4	5	Green
Alexander technique	-	-	-	3	Green
Aromatherapy	-	-	2	-	Green
Autogenic training	1	-	2	-	Green
Biofeedback	2	1	1	2	Green
Chiropractic (spinal manipulation)	-	2	1	2	Amber
Copper bracelets	-	1	-	-	Green
Craniosacral therapy	-	-	2	-	Green
Healing therapies	1	1	1	-	Green
Hypnotherapy	-	2	2	1	Green
Imagery	1	1	2	2	Green
Magnet therapy (static magnets)	1	2	1	1	Green
Massage	-	2	5	5	Green
Meditation	1	-	1	2	Green
Music therapy	-	2	2	-	Green
Osteopathy (spinal manipulation)	-	-	-	3	Amber
Qigong (internal qigong)	-	2	2	1	Green
Reflexology	-	-	-	1	Green
Relaxation therapy	2	2	3	3	Green
T'ai chi	2	4	3	-	Green
Yoga	-	2	2	4	Green

No trials were found in rheumatoid arthritis, osteoarthritis, fibromyalgia and low back pain for a number of therapies:

- crystal healing
- Feldenkrais
- kinesiology (applied kinesiology)
- shiatsu.

Where boxes are marked with (-), no evidence is available to suggest whether the treatment in question is effective for that particular condition. This doesn't mean we're saying that these therapies don't work but that we don't currently have any evidence which suggests that they do.



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# Glossary

**Autosuggestion** – the subconscious adoption of an idea that a person has created.

**Cognitive behavioural therapy (CBT)** – a psychological treatment based on the assumption that most of a person's thought patterns and emotional or behavioural reactions are learned and can therefore be changed. The therapy aims to help people resolve difficulties by learning more positive thought processes and reactions.

**Control group** – a key feature of an RCT is the use of two treatment groups – usually thought of as one experimental group and one control group. A control group is a group of participants who closely resemble the experimental group but who don't receive the treatment that's under investigation. They serve as a comparison when treatment results are evaluated. Control treatments vary from trial to trial – some use placebo treatments; others use usual care or waiting list controls.

**Enzyme** – a substance made by the body to help bring about a specific reaction.

**Haematoma** – bleeding under the skin, often with the appearance of bruising.

**Holistic** – an approach to medicine which aims to treat the whole person, including social and psychological factors, rather than just specific disease symptoms.

**Immune system** – the tissues that enable the body to resist infection. They include the thymus (a gland that lies behind the breastbone), the bone marrow and the lymph nodes.

**Introspection** – the examination or observation of your own mental and emotional processes.

**Millitesla (mT)** – a measure of magnetic field strength. A fridge magnet is around 5-10 mT.

**Placebo/sham/fake** – fake treatments that are designed so participants can't tell them apart from the other treatment(s) under investigation. This ensures that the participant doesn't know to which treatment group they were allocated. In a drug trial this is relatively simple – it's possible to make pills that look and taste identical to the real pills, but which contain no active ingredient. However, with complementary therapies it's much more difficult. How do you create, for example, a good placebo treatment for hypnotherapy? Is it even possible to create a fake hypnotherapy treatment such that the participant doesn't know whether they're receiving real or fake hypnotherapy? This is an area of continuing debate and uncertainty among researchers working in this field and, where it has been used, we have interpreted the term 'placebo' with considerable caution.

**Pneumothorax** – an abnormal collection of air outside the lungs, due to puncturing the chest wall.

**Randomised controlled trial (RCT)** – a scientific experiment used to test the effectiveness of a certain treatment. There are two fundamental concepts in the design of a trial: firstly, that there's more than one treatment group – i.e. not everybody in the trial will receive the same treatment; and, secondly, that the treatment that any one individual receives is determined at random – usually by a computer-generated sequence, although other methods are available. Note: in a trial there are normally only two treatment groups, although it's possible to conduct a trial with more than two, providing that the trial has enough participants.

**Short-wave diathermy** – a technique involving the production of heat in a part of the body using oscillating high-frequency electric currents. Short-wave diathermy is designed to stimulate circulation, ease pain and reduce inflammation.

**Statistical significance** – where we've said that there's a 'significant' difference between treatment groups A and B, we mean that, based upon the statistics presented in the trial, we're confident that any differences between the groups are real, and didn't just arise purely by chance. It doesn't necessarily mean that the differences are clinically important. It's possible for a small trial to demonstrate large differences between treatment groups (for example, in the proportion of participants reporting an improvement) but for these results to have arisen purely by chance. Similarly, it's possible for a large trial to show a statistically significant small, but clinically irrelevant, difference in the proportion of patients reporting an improvement.

**Transcutaneous electrical nerve stimulation (TENS)** – a small battery-driven machine which can help to relieve pain. Small pads are applied over the painful area and low-voltage electrical stimulation produces a pleasant tingling sensation, which relieves pain by interfering with pain signals to the brain.

**Waiting list control/usual care/standard care** – rather than trying to compare the therapy of interest to a fake version of the same treatment, some trials compare two (or more) groups of individuals: one group receives the therapy of interest, and the other receives either a completely different treatment or, perhaps, no treatment at all. The precise research question under investigation then becomes not (for example) whether hypnotherapy is better than fake hypnotherapy, but whether it's better than no hypnotherapy. These differences are subtle, but are crucially important in the interpretation of trial results. Because it's unethical to withhold all treatment from trial participants, instead of having a 'no treatment' control group, it's common to have a waiting list control group (people who are currently awaiting treatment), or a usual care or standard care control group (in which participants receive 'usual' management from their GP).

**Vertebrobasilar artery (VBA) stroke** – a stroke which is caused by partial or complete rupture of some of the arteries serving the brain. VBA strokes are often fatal.

# Contributors

## Working Group

**Professor Michael Doherty** – professor of rheumatology, University of Nottingham

**Professor Edzard Ernst** – emeritus professor of complementary medicine, Peninsula Medical School

**Margaret Fiskien** – patient representative, Aberdeenshire

**Dr Gareth Jones** (project lead) – senior lecturer in epidemiology, University of Aberdeen

**Professor George Lewith** – professor of health research, University of Southampton

**Dr Hugh MacPherson** – senior research fellow in health sciences, University of York

**Professor Gary Macfarlane** (chair of committee) – professor of epidemiology, University of Aberdeen

**Professor Julius Sim** – professor of health care research, Keele University

**Jane Tadman** – representative from Arthritis Research UK, Chesterfield

## Project team

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**Arthritis Research UK**

Copeman House  
St Mary's Court  
St Mary's Gate, Chesterfield  
Derbyshire S41 7TD

**Tel 0300 790 0400**

calls charged at standard rate

**[www.arthritisresearchuk.org](http://www.arthritisresearchuk.org)**

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