



# A world of pain

*Thankfully, natural medicine offers hope for the riddle that is fibromyalgia, says Tania Flack.*

**I**F you think unrelenting pain through your whole body sounds dreadful, well it is. Imagine waking every morning in pain - even walking hurts. Your pain and exhaustion become overwhelming, and you lose your job. Your friends and family can't understand; you struggle to maintain relationships, and feel isolated and depressed. After many trips to doctors and specialists, you are finally diagnosed with fibromyalgia - and told there is little you can do but manage the pain and find a new way to live within the confines of your condition. Sadly, this is a common story among fibromyalgia sufferers, compounded by a lack of understanding as to what causes the condition and no clear clues for a path forward. However, research is shedding light on it and natural medicine can help alleviate the symptoms.

## What causes fibromyalgia?

Fibromyalgia is a chronic disease characterised by widespread pain and multiple tender points in muscles and soft tissues throughout the body, accompanied by stiffness and fatigue. It affects between two and 10 percent of Australians, and is the second most common rheumatic condition, following osteoarthritis. It is seven times more likely to strike women than men, commonly between the ages of 35-55 years, although men and children can also develop it. Initially viewed with scepticism by the medical fraternity, due to a lack of obvious and measurable biomarkers, it wasn't until 1990 that diagnostic criteria were developed by the American College of Rheumatology. These were later expanded in 2010 to encompass a broader range of symptoms, including sleep disturbance, morning stiffness, cognitive problems, headaches, migraines, and

depression. There is much crossover between fibromyalgia and other clinical syndromes, including chronic fatigue syndrome, irritable bowel syndrome, restless leg syndrome and multiple chemical sensitivities, so even getting a diagnosis can be a long, frustrating experience.

Fibromyalgia is a complex condition and the exact cause is unknown, but abnormalities of cell signalling and neuroendocrine function have been identified and are being investigated. While we don't have the full picture yet, it is generally thought that fibromyalgia can be triggered by infection, physical trauma, psychological stress, hormonal alterations, or possibly exposure to some drugs or chemicals. People with fibromyalgia have abnormalities in the way the neurons of their central nervous system respond to pain signals. Neuroimaging studies demonstrate clear differences in the brain responses of fibromyalgia sufferers compared to normal controls. Neurotransmitter abnormalities have also been identified, including lower serotonin levels in the central nervous system, which may alter pain signalling. A decrease in dopamine signalling in the brain also plays a role. In keeping with these findings, antidepressants are the standard medical treatment for fibromyalgia and can provide some relief of symptoms. Neuroendocrine deficiencies have also been identified as a possible contributing factor; so are changes in

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the function of the hypothalamus-pituitary-adrenal axis, which can lead to a lower secretion of adrenal hormones, blunted cortisol response, and lowered DHEA levels. Fibromyalgia sufferers have demonstrated low adrenal function in studies, along with hyposecretion of adrenal androgens, including DHEA and testosterone. Chronic stress - either physical or emotional, or a traumatic event - impacts the delicate balance of the hypothalamus-pituitary-adrenal axis and can be associated with onset of fibromyalgia. Most recently, research has focused on the role of the mitochondria, the energy-producing powerhouse in all cells. Fibromyalgia sufferers have decreased levels of coenzyme Q10 (a powerful antioxidant enzyme involved in mitochondrial energy production), and increased levels of oxidative stress and mitochondrial dysfunction. Exciting breakthroughs in the link between mitochondrial dysfunction and chronic fatigue syndrome (a closely linked condition) have started to emerge, so hopefully this research will have benefits for fibromyalgia sufferers in the future.

### Leaky gut and thyroid

Between 30 and 70 percent of all fibromyalgia sufferers also experience irritable bowel syndrome, which has led researchers to try to identify a link. While the cause of fibromyalgia is yet to be identified, there is a theory that dysbiosis (an imbalance of gut bacteria) causing an increase in the permeability of the gut lining (leaky gut) may be a contributing factor. Exposure to minute levels of bacterial endotoxins escaping the gut into the bloodstream is thought to trigger an inflammatory response in immune cells,

which in turn alters cellular signalling, impacting pain perception, and causing depression and fatigue.

Poor diet, refined foods, sugar, alcohol, caffeine, some medications, herbicides and pesticides in foods, and stress all contribute to an unbalanced gut microbiome. One study looking at the link between gut health and fibromyalgia found that 78 percent of all fibromyalgia patients tested positive for small intestinal bacterial overgrowth (SIBO), and when treated for this with antibiotics had significant improvements in gut symptoms, musculoskeletal pain and fatigue. Other research examining the intestinal permeability of fibromyalgia sufferers has found that it is increased, compared to healthy controls. Nutritional interventions designed to reduce symptoms of irritable bowel syndrome also significantly improve pain in fibromyalgia sufferers. Participants of one study ate a low-FODMAP (Fermentable Oligo-Di-Monosaccharides And Polyols) diet for four months, and were found to have significant reduction in overall pain scores and improvement in gut symptoms. The low FODMAP diet removes fermentable fibres from the diet, which reduces the total bacterial abundance in the digestive tract. So these findings support the theory that levels of gut bacteria and the endotoxins they produce play a role in fibromyalgia.

Shifts in other hormones are also linked to fibromyalgia and evidence supports the hypothesis that fibromyalgia may, in part, be due to thyroid hormone resistance. Hypothyroidism is common in fibromyalgia sufferers; however, some people present with all the symptoms of thyroid disease but their blood results indicate normal thyroid function. This is thought to be due to thyroid resistance, which is a blunting of the cells' responses to available hormone. Several clinical trials have found that thyroid hormone replacement can significantly improve symptoms of fibromyalgia. Fibromyalgia sufferers displaying thyroid symptoms may benefit from supplemental iodine, selenium, zinc, and other cofactors to support thyroid hormone production, along with herbs like coleus and withania. A naturopath or nutritionist will be able to assess thyroid function, test for any nutritional deficiencies, and prescribe a tailored protocol if needed.

### Nutritional medicine can help

**SAME:** S-adenosylmethionine (SAME) is an amino acid that has significant anti-inflammatory, pain-relieving, and antidepressant activity in fibromyalgia. SAME acts to down-regulate inflammation and has been shown to be as potent as non-steroidal anti-inflammatory medication in both animal studies and human clinical trials. The antidepressant activity of SAME is well-established, with many clinical trials finding that it provides equivalent antidepressant activity as standard pharmaceutical



antidepressants, but without the side effects. A double-blind, placebo-controlled, randomised clinical trial has shown that even a relatively low dose of 200mg per day for 21 days reduces the number of tender trigger points and improves mood.

**Acetyl-L carnitine:** This antioxidant amino acid supports cell membrane health, mitochondrial activity, enhances energy production, and has significant neuroprotective properties. Clinical trials show that it alleviates depression in fibromyalgia sufferers, and a recent meta-analysis found that it has pain-reducing effects in peripheral neuropathy. One study involving over a hundred participants found that fibromyalgia sufferers given two 500mg of acetyl-L carnitine daily for 10 weeks had a significant reduction in musculoskeletal pain and depression.

**Magnesium:** This is essential for energy production in every cell in the body. Studies show that fibromyalgia sufferers have abnormal calcium and magnesium flow across the cell wall and low serum levels of magnesium. One study found that 300mg of magnesium citrate given daily for eight weeks significantly decreased the number of tender points, the level of tenderness, and depression scores. These results indicate that the combination of magnesium citrate with SAMe, which has been shown to have similar efficacy as standard antidepressants, may achieve similar results although no clinical trials have been done to date.

**Coenzyme Q10 (CoQ10):** This powerful antioxidant enzyme plays a critical role in mitochondrial function and energy production within the cell. Studies reveal that fibromyalgia patients often have deficiencies in CoQ10. One randomised, placebo-controlled, double-blind trial investigated the effects of 300mg of CoQ10 daily for 40 days in a group of 20 fibromyalgia patients. This produced significant reduction in pain, tender points, fatigue, and morning tiredness. Further investigation showed improvement in antioxidant enzyme activity, mitochondrial function, and inflammation. Another trial investigated the effects of a combination of 200mg of CoQ10 daily with 200mg of ginkgo biloba for 84 days. Ginkgo biloba is a powerful antioxidant herb that has a stimulatory effect on the microvasculature. Quality of life scores were monitored throughout the trial and 64 percent of participants reported improvement in symptoms.

**Mind-body therapies:** These are important management tools in any chronic painful condition, and fibromyalgia is no exception. Fibromyalgia sufferers can often feel that they are powerless to make changes in their health, due to their pain, which can lead to frustration, depression and isolation. Partaking in gentle movement is an important part of learning to manage the symptoms

of this debilitating condition, and several studies have identified benefit in meditation, mindfulness and other mind-body therapies, indicating that this type of intervention is an important addition to any fibromyalgia recovery program.

Qi Gong is a gentle movement therapy based on martial arts that uses physical poses, breathing techniques, and focused intention in order to promote the flow of qi or vital life force throughout the body. One randomised, controlled, cross-over study found that Qi Gong therapy over a course of seven weeks provided positive and reliable benefits and improved pain, psychological health and reduced distress. Other studies have identified similar benefit from Tai Chi, which improves pain scores, sleep quality, physical and psychological function. Mindfulness-based meditation has been found to be effective for the depression and mood alterations associated with fibromyalgia; however, the movement-as-meditation therapies like Tai Chi and Qi Gong seem to have a broader range of benefits and are more successful in reducing pain.

So the message is: don't give up, but explore your options so you can find the perfect combination of support to help you on your path to recovery. ✨

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References available on request.

## ✨ 6 steps to recovery

**Clean up your diet:** Everything we eat has an impact on our body, and people with fibromyalgia need to take a 'food as medicine' approach to their diet and make every mouthful count. A predominantly plant-based, clean, wholefood diet is essential to help alkalise the system and keep your gut microbiome happy. Avoid processed foods, fried foods, sugar, caffeine, and alcohol.

**Heal your gut:** This is an important step towards recovery and diet should be your biggest focus here. However, pre- and probiotics, glucosamine, vitamin A, zinc, and bioflavonoids can help rebalance the gut and repair the gut wall. Herbs such as slippery elm, marshmallow and golden seal will also help. Speak to a professional about your gut health for proper assessment and treatment.

**Dampen inflammation:** A wholefoods diet is the best place to start. Eicosapentaenoic acid (EPA), a constituent from fish oils, can significantly reduce inflammation. Aim for a dose of 1.2g daily. Vitamin C and the bioflavonoids quercetin and rutin will also help. Herbs - turmeric, boswellia and cat's claw - are

also effective anti-inflammatories, but should be prescribed by a professional.

**Control your stress:** Being in pain is stressful and it's vital that you take steps to manage stress as part of your recovery program. Managing stress reduces pain and protects against depression. Mindfulness techniques, meditation, Tai Chi and Qi Gong can be useful, as can the support of a psychologist specialising in chronic health conditions and pain management.

**Keep moving:** Even when muscle pain and fatigue limits activity, gentle movement can reduce stress, improve mood, release pain-reducing endorphins, and support healthy circulation and mobility.

**Get specialised advice:** Herbal medicine can be used to support recovery in fibromyalgia and may include herbs to support healthy adrenal and thyroid function, reduce pain, support mood, and promote restful sleep. Herbal medicine needs to be prescribed on an individual basis by a trained professional, especially if you are taking other medicines, so speak to your naturopath or herbalist.