

# How meditation can be medicine



*Committing to daily, long-term meditation practice is both a way forward and a challenge*

The neural, immune and microbiome effects of meditation underpin its recommendation as an adjunctive intervention

**DR DANIEL LEWIS**

In 1974, when the current crop of Australia's senior rheumatologists was graduating from medical school, John Kabat-Zinn, now Professor Emeritus of Medicine at University of Massachusetts, was teaching mindfulness meditation to patients with chronic musculoskeletal pain conditions.

He had tapped into the literature and practices of Buddhism<sup>1,2</sup> and developed a program called "mindfulness based stress reduction". This program has been shown to assist patients with a widespread range of symptoms including chronic pain, central sensitisation, insomnia

and mood disturbances such as anxiety and depression. It is now a mainstream medical therapy in many countries.

A few years earlier, back in 1968, the Beatles were heading to the ashram of the Maharishi Mahesh Yogi in India to learn Transcendental Meditation which subsequently has been researched extensively, confirming beneficial outcomes in many diseases.<sup>3,4,5</sup>

Also working in the 1970s, Herbert Benson, Associate Professor of Medicine at Harvard University, confirmed that the autonomic nervous system is not simply set "on automatic" but that human beings, with some simple training, can tap into this system whenever they want.

He called this ability to activate the parasympathetic nervous system the "relaxation response", and determined that this ability to control this response has significant and wide-ranging health benefits.<sup>6</sup> I was first exposed to stillness-based meditation techniques during my rheumatology training in the late 1970s. In the mid-80s, I was introduced to Qigong, a



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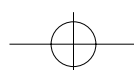
movement and stillness-based meditation similar to Tai Chi but more aligned with healing aspects of traditional Chinese medicine.

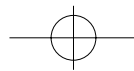
Qigong began in China about 4000 to 5000 years ago. The writings from that time have a rheumatological flavour with Chinese people said to be suffering "contraction and dysfunction of tendons and bones". This was attributed to "water and dampness" on the flooded areas of the central plains in China. To prevent disease, Chinese people "moved in dance-like patterns to disperse it".

From this point onwards, Chinese literature consistently records the ongoing development and benefits of practising Qigong.

In recent years the Chinese government has outlined guidelines for research into Qigong and have established university-affiliated research centres.

Thirty-five years ago, I visited a hospital in Beijing specifically for patients with inflammatory joint diseases. Most of the patients I saw had active rheumatoid arthritis. These patients, in the pre-methotrexate era, were





practising stillness and movement meditation (Qigong) for two hours a day to reduce pain, improve mobility and reduce inflammation.

Since then, I have been encouraging patients to explore a variety of meditation methods as an adjunct to their usual treatments. To facilitate this exploration, I began teaching meditation formally to groups of patients 16 years ago and continue to run three to four programs per year.<sup>7</sup>

### WHAT IS MEDITATION?

Meditation is not a system of belief but a technology for exploring and influencing our experience of life. In practical terms, it is the umbrella term for many different forms, including mindfulness.

Meditation is a process for altering one's conscious state from the normal waking state to an inwardly focused, alert and restful state achieved by concentrating on a point of focus. The practice of meditation is a training to achieve this state of mind and body.

Neuroscience is bringing further clarification to the definition of what is meditation.

In the last decades, functional MRI scans, quantitative EEGs and histochemical studies have demonstrated the many ways in which a sustained meditation practice modulates neurotransmitters and neurogenesis and at a deeper level the length of telomeres.<sup>8</sup>

The plasticity of the brain and the general effects on physiology in response to meditation is now measurable.<sup>9,10</sup>

According to neuroscience, the brain works via algorithms. To change these algorithms in order to enhance physiological and emotional states takes time.

Committing to a daily and long-term meditation practice is both a way forward and a challenge. To sustain a practice requires willpower which in turn relies heavily on brain energy.

Our brain energy is depleted by the demands of a modern lifestyle and it is critically impacted by our reliance on technology and devices. For example, when we look at our smartphone we shift our attention and focus and this seemingly innocuous, repetitive activity drains our energy. The brain's energy reserves, however, are refreshed by quality sleep and meditation.

Meditation is a mind-body technique that can simply and reliably alter physiological and psychological states to reduce the drivers of chronic pain and central sensitisation.

The understanding that meditation has neural, immune and microbiome effects underpins its recommendation as a useful adjunctive medical intervention. Due to its simplicity, mindfulness meditation is the main technique taught in mainstream health systems.

In 1997, there were 38 citations in *PubMed* for meditation and none for mindfulness. Whereas in 2017, there were 528 for meditation and 1173 for mindfulness.

From the perspective of my rheumatology practice, meditation sits under the umbrella of lifestyle medicine and a biopsychosocial approach to wellbeing.

I consider it to be of equal importance when compared with nutrition, sleep and exercise prescriptions. These mind-body techniques are now entering mainstream rheumatology research.<sup>11</sup>

### PATIENTS AND MEDITATION

Most patients have symptoms of chronic pain and many have fibromyalgia. The experience of pain is amplified by stress, fear, anxiety and depression. These states are frequently associated with insomnia, another amplifier of the pain and emotional experiences.

Some preliminary work on transcutaneous vagal nerve stimulation as an adjunctive treatment for rheumatoid arthritis is demonstrating interesting and beneficial



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outcomes. It is highly likely that meditation and its effect on the autonomic nervous system is also mediated via vagal nerve function.<sup>3,12</sup>

Patients who adopt a meditation practice often report an increase in resilience in coping with stress, anxiety and pain, improved sleep and less fatigue as well as an enhanced feeling of well-being.<sup>13</sup>

For patients, to adopt a regular meditation practice requires support, education, goal setting and a supportive community. With the right guidance this can and is being achieved.

A delightful side benefit of teaching meditations to my patients is that I am never concerned about keeping them waiting for an appointment as it gives them an opportunity for a little more meditation time.

### FOR THE RHEUMATOLOGIST

There is research that highlights the benefits of a therapist having a meditation practice. It shows that the level of self-reported mindfulness by physicians has an effect on patient care quality.

In addition, a meditation practice has the potential to prevent burnout in the form of emotional exhaustion and job satisfaction.

I would contend that most of us start our work day with the intention of providing the best care possible for our patients and meeting their (usually unknown) expectations.

Sometime during the day, perhaps many times, we face stressful situations which activate the sympathetic nervous system and the stress response.

Being able to recognise this and to rapidly create internal equanimity is the value and the power of having a personal meditation practice. If this was the only reason to practise it would be worthwhile.

But meditation also improves memory, focus, attention, decision making and teaches us to

be non-reactive. Having the awareness and the skills to shift one's attention intermittently from a foveal focus to a parasympathetic "relaxation response" preserves the ability to make the best decisions throughout a busy day.

And finally, at the end of the day, meditation can contribute to the state of restful sleep.

### PRACTICAL TIPS

For those new to meditation there are many options. Using one of the many smartphone apps is a good start, but, ultimately, using an app is like riding a bike with training wheels. I recommend taking the training wheels off by attending a course or finding a teacher.

In the last year, I have developed an audio guide that trains people in meditation in a way that leads to a self-sufficient practice. Referenced below is a link (and shameless plug) to the audio guide.<sup>14</sup>

I am often asked how long to meditate.

Up until recently the research indicated that to change physiology requires a 20-minute practice, twice-daily. However, current research is pointing towards shorter periods of time as being effective.

There is universal agreement that to impact neuroplasticity, a regular practice over time is required. It needs to become a habit, just like brushing your teeth each day.

In general, patients report noticing changes after about 50 sessions of practice.

If you are a beginner, then the allocated time is best kept very brief... only a few minutes. As you gain experience, the time will "naturally" expand.

My rule of thumb is to meditate for a period less than you think is necessary.

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