

# **Increasing awareness of the health benefits of Tai Chi**

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## **Abstract**

There is compelling scientific evidence that practicing Tai Chi is not only a good mind-body exercise, it can also delay and relieve the symptoms of many chronic diseases. Many scientific studies have shown that Tai Chi can prevent falls in the elderly, and has a beneficial effect on low back pain, osteoarthritis, chronic lung disease, heart failure, stroke and Parkinson's disease – to name a few. Public awareness of the therapeutic effects of Tai Chi is starting to grow as a result of popular news coverage, credible online patient information sources, and a best-selling book. Similarly, physicians are becoming aware of this too, as Tai Chi is increasingly identified as a therapeutic option in current online medical resources and professional guidelines. Everyone could play a role in increasing awareness of the health benefits of Tai Chi. Participants can share their experiences of Tai Chi with others, including their physician. Physicians can learn more about Tai Chi, discuss its benefits with colleagues, and identify it as an option for appropriate patients. And Tai Chi teachers can learn more about the chronic conditions that Tai Chi can help, and discuss this with others, including their students and other teachers.

## **Introduction**

There are over 500 clinical trials published in the scientific literature on the health benefits of Tai Chi (1). Yet to this day many people are unaware of this extensive research, and its overarching finding that Tai Chi not only promotes health and wellness but also alleviates the symptoms of chronic disease. Why is this and could it be changed? The purpose of this Commentary is to summarize the evidence, consider the current situation, and identify how everyone could play a role in increasing awareness of the therapeutic benefits of Tai Chi.

## **Evidence on the health benefits of Tai Chi**

Clinical trials on Tai Chi have been conducted in two broad areas: first for general health, fitness and fall prevention and then for chronic diseases. Typically, after multiple clinical trials are published, then systematic reviews are done to summarize what is known from all the evidence to date. Over time, multiple systematic reviews are published as clinical trials continue to be done, calling for a new summary of the ever-growing body of evidence. The evidence presented here is based on two overviews of the evidence on Tai Chi.<sup>1,2</sup>

## ***General health, fitness and fall prevention***

Tai Chi is known to improve balance and posture. It improves aerobic capacity (especially in those who have been deconditioned) and increases strength and flexibility. It has been shown to improve sleep and concentration. It can help alleviate depression and anxiety and promotes a sense of well-being. Tai Chi also prevent falls. For example, at least 14 systematic reviews have concluded that Tai Chi prevents falls in the elderly. (Table 1) This is very important as falls are a major source of emergency visits, hospitalization and institutionalization in the elderly.<sup>3</sup>

**Table 1: Number of systematic reviews on Tai Chi for general health and fitness, mental health and fall prevention <sup>1</sup>**

Area	Condition	# systematic reviews
General health and fitness	Improves balance	10
	Improves aerobic capacity	5
	Improves strength (especially leg strength)	2
	Improves flexibility	1
Mental health	Improves sleep	4
	Improves cognitive capacity	5
	Promotes general well-being	4
	Improves depression	8
	Improves anxiety	2
Injury Prevention	Prevents falls in the elderly	14

### ***Chronic conditions***

What is less widely known is that there is compelling evidence that Tai Chi can help with a number of chronic conditions. In most studies, Tai Chi is compared with another type of intervention, such as physiotherapy, aerobic activity or education. And again and again, these studies have found that Tai Chi is either the same, better or much better than whatever it is compared to.

A meta-analysis (a systematic review that includes a mathematical summary of the results from multiple studies) found Tai Chi had a large effect size for a number of conditions including chronic lung disease, low back pain, osteoarthritis, osteoporosis and Parkinson's disease. ( **Figure 1**) It was also found to have a very large effect size for improving exercise capacity in those with heart failure, improving balance after a stroke and in relieving some of the side-effects of breast cancer treatment. Specifically, following radiation and chemotherapy for breast cancer, many women develop swelling in their arm on the side where the cancer was, and this is associated with decreased mobility of that arm. When these women practice Tai Chi, the swelling goes down and the mobility of the affected arm improves. This can increase the quality of life for many women being treated for breast cancer.

**Figure 1: Chronic conditions for which Tai Chi has a large effect size based on meta-analyses of recent high-quality evidence <sup>2</sup>**

AEs Breast Ca tx*	↑ elbow extension				
COPD	↓ dyspnea and fatigue				
Heart failure	↑ exercise capacity				
Low back pain	↓ pain				
Osteoarthritis	↑ physical function				
Osteoporosis**	↓ pain				
Parkinson' s	↓ falls				
Stroke	↑ balance				
	Small < 0.5	Moderate > 0.5 < 0.65	Mod/Large 0.65 < 0.8	Large 0.08 < 1	Very large ≥ 1.0 – 1.58
	<b>Outcome and Effect size: Standard mean difference (SMD)</b>				

Abbreviations: AEs, adverse events; Ca, cancer; COPD, chronic obstructive pulmonary disease; Mod, moderate; tx, treatment

\* A common adverse event of breast cancer treatment is lymphedema of the arm leading decreased range of motion

\*\* With secondary fractures

It is important to emphasize that Tai Chi does not usually provide instant cures – it typically causes incremental improvements over time. So, people with a chronic condition should not assume they can stop their current treatments after a few Tai Chi classes. People may notice some changes right away. However, usually they will become aware of subtle changes that then increase over time. For example, someone with mild osteoarthritis may have multiple stiff joints with intermittent flare-ups when their joints become more painful. After doing Tai Chi for a while, they may find their affected joints are less stiff. Then they may notice their flare-ups are less painful, or that it affects fewer joints or it occurs less frequently. Over time, people may be able to decrease or even stop their medication for arthritis – however, this is best done in consultation with their physician.

### Current situation

Most people start Tai Chi classes as a mind-body exercise and an art form and then discover its health and fitness benefits. It appears that the therapeutic effects of Tai Chi with respect to chronic conditions are only beginning to become known. The general public is starting to become aware of this through popular news sources,<sup>4</sup> credible online patient information sources, such as the Mayo Clinic<sup>5</sup> and from popular books, such as the Harvard Medical School Guide to Tai Chi.<sup>6</sup> The medical community is starting to become aware of the therapeutic benefits of Tai Chi as well. In the US, for example, Tai Chi is now included in professional guidelines for the treatment of low back pain,<sup>7</sup> osteoarthritis<sup>8</sup> and falls in the elderly.<sup>9</sup> In Europe, it is recommended for fibromyalgia.<sup>10,11</sup> Some demonstration projects have been done to assess the clinical trial evidence in real-life situations. For example, a program in Britain showed that Tai Chi was useful for people with chronic lung problems<sup>12</sup> and in the US a public health program that included Tai Chi at local senior centres found a 50% decrease in the number of falls over time.<sup>13</sup> Tai Chi is starting

to appear in electronic medical resources for physicians noting, for example, Tai Chi as an option to address the pain of fibromyalgia when patients have not responded to first line treatments. <sup>14</sup>

### **Increasing awareness**

Although much has been studied on Tai Chi, it takes time to disseminate that knowledge and consider how it might be applied. One study on the dissemination and uptake of research findings noted it can take up to 17 years for evidence to be applied in practice! <sup>15</sup> In a recent study that asked physicians what were the barriers to incorporating Tai Chi into their recommendations for patients, physicians noted things like: lack of awareness, lack of access, lack of standardization (for example not knowing if the Tai Chi done in studies was the same as what is locally available) as well as the fact Tai Chi may be seen as “foreign” and so their patients may not be receptive to it. <sup>16</sup> Physicians also noted a need to hear about the evidence and discuss this with colleagues as part of the process of making it “mainstream”. Evidently this was how yoga became a mainstream alternative treatment that most physicians are now comfortable with. Some physicians noted that recommending Tai Chi for chronic conditions will likely become more mainstream too one day, once the evidence on its benefits are more widely known. <sup>ibid</sup>

In between this time of compelling evidence and its uptake, there is a lot that can be done to increase awareness. Anyone – but especially those who practice Tai Chi - can speak with other students, friends and family about Tai Chi or share its beneficial effects on social media. Anyone can speak with their physician about it. Tai Chi practitioners may also want to show their physician the guidelines that recommend it and provide him or her with a list of available courses in the area. Physicians could learn more about Tai Chi through reading the guidelines and other scientific literature, discussing this with colleagues and patients and considering whether it may be an option for some patients. Tai Chi teachers could discuss the health effects of Tai Chi with their students and other teachers. They may find that some students and teachers may have these conditions and may already have found some beneficial effects. They may want to learn more about the effect of Tai Chi and the chronic conditions it helps.

### **Discussion**

Perhaps the therapeutic effects of Tai Chi have been well known in China for centuries. But in the West, scientific evidence documenting this is relatively new and change takes time, especially when it involves something unanticipated. One doesn't expect that a meditative martial art has beneficial effects on multiple diseases. It seems counter-intuitive to the Western mind. There are always early adopters and resisters, but over time the majority of evidence-based health care professionals will agree that – based on the evidence – Tai Chi can have an important therapeutic effect for their patients.

This may engender some changes in how Tai Chi is taught as well. For example, several Tai Chi teachers, including an Australian physician and teacher, Dr. Paul Lam, has developed a Tai Chi course specifically for arthritis and fall prevention. <sup>17</sup> And ongoing research will continue to identify and refine the evidence with respect to the health benefits of Tai Chi.

### **Conclusion**

Tai Chi is not only a good body-mind exercise, it can also help alleviate the symptoms of chronic disease. Although scientific evidence that documents this has been accumulating over the last few decades, it is only now becoming more widely known to the public and health professionals. Everyone has a potential role to play in increasing awareness of the many health effects that arise from the regular practice of Tai Chi.

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