

# Acupuncture for Anxiety

Published by [EvidenceBasedAcupuncture](#)

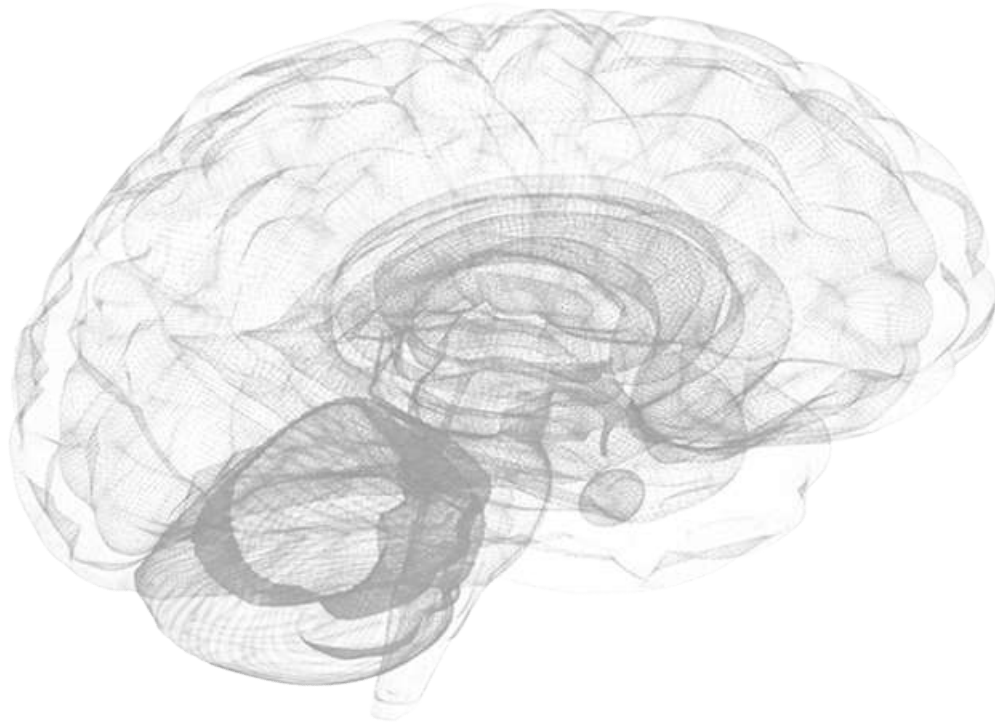
## INTRODUCTION

Research suggests that between 1-30% of the global population suffers from some form of anxiety.<sup>1</sup> There are 13 different sub-classifications of anxiety disorders listed in the latest Diagnostic and Statistical Manual (used by medical professionals to diagnose and treat psychological conditions),<sup>2</sup> with symptoms and physical manifestations varying considerably. From shortness of breath and variations in heart rate, to full blown and debilitating panic attacks, headaches, pain and insomnia,<sup>3</sup> anxiety is a complex, pervasive condition that is generally treated using medication.

## ACUPUNCTURE FOR ANXIETY: THE CLINICAL EVIDENCE

According to the most up to date evidence, acupuncture is an effective treatment for anxiety. In 2017, The Acupuncture Evidence Project, co-authored by Dr John McDonald, PhD and Dr Stephen Janz,<sup>4</sup> was published, providing an up-to-date comparative review of the clinical and scientific evidence for acupuncture. This comprehensive document, updating two previous reviews, determined that acupuncture is moderately effective in treating anxiety according to high level evidence.<sup>5</sup> Their evidence included a 2016 systematic review with over 400 randomised patients that concluded that ‘the effects from acupuncture for treating anxiety have been shown to be significant as compared to conventional treatments.’<sup>6</sup> The largest of these studies, which included 120 randomized patients, found that acupuncture had a large effect on reducing anxiety and depression compared to conventional treatment involving pharmacological approaches and psychotherapy, with over twice the reduction in symptoms.<sup>7</sup>

A more recent systematic review published in 2018 found that all 13 included studies “reported an anxiety decrease for their treatment group relative to the control groups.” Three of these studies used pharmaceuticals as controls.<sup>8</sup>



## **BIOCHEMICAL MECHANISMS OF ACUPUNCTURE FOR ANXIETY**

The autonomic nervous system (ANS), which is comprised of the sympathetic nervous system (SNS) and the parasympathetic nervous system (PNS), regulates the internal conditions necessary for existence (homeostasis).(8) Information is received from the body and external environment and a response is delivered by either the SNS, which releases excitatory signals, or the PNS which releases signals for relaxation. These signals direct the body to react in very different ways, such as increasing the heart rate and contraction force, or by reducing blood pressure and slowing the heart rate.(9) It is exciting to know that studies show acupuncture has an effect on both the SNS and the PNS, as some further examples presented below reveal.

One of the most sensitive measures of the body's ability to cope with stress is something called Heart Rate Variability (HRV). Rather than beating consistently at the same rate like a metronome, the heart actually changes its rate based on its fine-tuned response to the environment. A higher HRV has been associated with better health in all domains, including mental health and low levels of anxiety.

Acupuncture has been shown to improve the body's ability to cope with stress through improving HRV.(10)

When the body is under stress, an area of the brain called the hypothalamus releases neurochemicals,<sup>9</sup> and research shows that acupuncture can calm this response.<sup>10</sup>

Acupuncture has also been shown to increase the release of endorphins,<sup>11</sup> the body's own 'feel-good' chemicals, which play an important role in the regulation of physical and emotional stress responses such as pain, heart rate, blood pressure and digestive function.<sup>12 13 14 15</sup>

All of these acupuncture mechanisms have a direct effect on reducing anxiety.

## **CONVENTIONAL TREATMENT OF ANXIETY**

The conventional treatment of anxiety primarily involves some combination pharmacological and psychological interventions.

### **PHARMACOLOGICAL APPROACHES**

There are several medications that are prescribed for anxiety, including benzodiazepines (alprazolam), selective-serotonin re-uptake inhibitors (SSRIs) such as paroxetine, and tricyclic antidepressants (imipramine), either singularly or in combination.<sup>16</sup> According to recent research, around 50% of patients treated pharmacologically for anxiety have an 'inadequate response,'<sup>17</sup> meaning that their symptoms are not alleviated to clinically significant levels or that the patient experiences adverse side effects. Some researchers go so far as to say that pharmacological treatments are 'not ideal' in terms of efficacy when employed for either short- and long-term treatment.<sup>18</sup>

Systematic reviews demonstrate that benzodiazepines can result in 'sedation and drowsiness, mental slowing and anterograde amnesia' (difficulty in forming new memories).<sup>19</sup>

### **BEHAVIOURAL APPROACHES**

Cognitive behavioural therapy (CBT) and mindfulness-based CBT are two other popular and effective forms of conventional treatment for anxiety and may be prescribed as standalone therapies, or in combination with medications.<sup>20</sup> CBT is a 'talking therapy' that aims to overcome inaccurate or negative thought patterns,<sup>21</sup> and has the advantage of flexibility, where therapy is tailored to each individual and their relevant anxiety disorder. A meta-analysis found that compared to a placebo therapy, CBT had a moderate to large effect on reducing anxiety from a variety of causes.<sup>22</sup>

## **CONCLUSION**

While there are ethical and methodological challenges to designing studies that compare the effectiveness of acupuncture to the conventional treatment of anxiety,<sup>2324</sup> the best available evidence demonstrates that acupuncture has moderate benefits in the treatment of anxiety. Studies show that acupuncture is more effective than pharmacotherapy and comparable to talking therapy, making it a helpful referral choice. Moreover, research has revealed several known biochemical and biophysical mechanisms that may offer an explanation of how this ancient modality works.

## References

1. Baxter AJ, Scott KM, Vos T, Whiteford HA. Global prevalence of anxiety disorders: a systematic review and meta-regression. *Psychological Medicine*. 2013; 43:897-910
2. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Arlington, VA: American Psychiatric Publishing. 2013
3. Health Direct. *Anxiety symptoms [Internet].; [cited 28th May 2017]*. Available from: <https://www.healthdirect.gov.au/anxiety-symptoms>
4. McDonald J, Janz S. *The Acupuncture Evidence Project: A Comparative Literature Review*. Australian Acupuncture and Chinese Medicine Association Ltd. 2017.
5. Bazzan AJ, Zabrecky G, Monti DA, Newberg AB. Current evidence regarding the management of mood and anxiety disorders using complementary and alternative medicine. *Expert Rev Neurother*. 2014;14:411- 23.
6. Goyata SL, Avelino CC, Santos SV, Souza Junior DI, Gurgel MD, Terra FS. Effects from acupuncture in treating anxiety: integrative review. *Rev Bras Enferm*. 2016 Jun;69(3):602-9.
7. Arvidsdotter, T., Marklund, B., & Taft, C. (2013). Effects of an integrative treatment, therapeutic acupuncture and conventional treatment in alleviating psychological distress in primary care patients—a pragmatic randomized controlled trial. *BMC Complementary and Alternative Medicine*, 13(1), 308. <http://doi.org/10.1186/1472-6882-13-308>
8. Amorim, D., Amado, J., Brito, I., Fiuza, S. M., Clinical, N. A. T. I., 2018. (n.d.). *Acupuncture and electroacupuncture for anxiety disorders: A systematic review of the clinical research*. Elsevier. <http://doi.org/10.1016/j.ctcp.2018.01.008>
9. Abboud FM, Harwani SC, Chapleau MW. Autonomic neural regulation of the immune system: implications for hypertension and cardiovascular disease. *Hypertension*. 2012;59:755-62
10. Guo ZL, Longhurst JC. Expression of c-Fos in arcuate nucleus induced by electroacupuncture: relations to neurons containing opioids and glutamate. *Brain Research*. 2007;1166:65–76.

11. Ribeiro SC, Kennedy SE, Smith YR, Stohler CS, Zubieta JK. Interface of physical and emotional stress regulation through the endogenous opioid system and m-opioid receptors. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*. 2005;1264-1280.
12. Harbach H, Moll B, Boedeker RH, et al. Minimal immunoreactive plasma b-endorphin and decrease of cortisol at standard analgesia or different acupuncture techniques. *European Journal of Anaesthesiology*. 2007; 24:370-6
13. Li M, Tjen-A-Looi SC, Longhurst JC. Electroacupuncture enhances preproenkephalin mRNA expression in rostral ventrolateral medulla of rats. *Biol Psychiatry*. 2010;477:61-5
14. Yin J, Chen J, Chen JDZ. Ameliorating effects and mechanism of electroacupuncture on gastric dysrhythmia, delayed emptying and impaired accommodation in diabetic rats. *The American Journal of Physiology*. 2010; 298:G563-G570
15. Agelink MW, Sanner D, Eich H, Pach J, Bertling R, Lemmer W, Klieser E, Lehmann E. Does acupuncture influence the cardiac autonomic nervous system in patients with minor depression or anxiety disorders? *Fortschritte der Neurologie-Psychiatrie*. 2003;71:141-9
16. Rickels K, Rynn M. Pharmacotherapy of generalized anxiety disorder. *J Clin Psychiatry*. 2002;63:Suppl 9-16
17. Generoso MB, Trevizol AP, Kasper S, Cho HJ, Cordeiro Q, Shiozawa P. Pregabalin for generalized anxiety disorder: an updated systematic review and meta-analysis. 2017;32:49-55
18. Baldwin D, Hou R, Gordon R, Huneke N, Garner M. GAD: experimental medicine models, emerging targets: Pharmacotherapy in generalized anxiety disorder: novel experimental medicine models and emerging drug targets CNS drugs [internet].; [cited 20th May 2017]. Available from <https://eprints.soton.ac.uk/406180/>
19. Perna G, Alciati A, Riva A, Micieli W, Caldirola D. Long-Term Pharmacological Treatments of Anxiety Disorders: An Updated Systematic.
20. Cuijpers P, Sijbrandij M, Koole S, Huibers M, Berking M, Andersson G. Psychological treatment of generalized anxiety disorder: A meta-analysis. *Clinical Psychology Review*. 2014; 34:130-140
21. Mayo Clinic. Cognitive behavioural therapy [internet].; [cited 20th May 2017]. Available from <http://www.mayoclinic.org/tests-procedures/cognitive-behavioral-therapy/home/ovc-20186868>

22. Hofmann, S.G., psychiatry, J.S.T.J.O.C., 2008. (n.d.). *Cognitive-behavioral therapy for adult anxiety disorders: a meta-analysis of randomized placebo-controlled trials*. Ncbi.Nlm.Nih.Gov

23. Hopton A, MacPherson H. *Acupuncture for Chronic Pain: Is Acupuncture More than an Effective Placebo? A Systematic Review of Pooled Data from Meta-analyses*. *Pain Practice*. 2010; 10:94-102

24. Nardini C. *The ethics of clinical trials*. *Ecancermedicalscience*. 2014;8:387