

# ANJUNA

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## SPORTS ACUPUNCTURE

### A Patient Guide

#### **Acupuncture for Migraine and Tension Headaches: An Evidence-Based Overview**

Headaches are among the most common neurological complaints globally, with migraine and tension-type headaches (TTH) representing the majority of cases. Migraine affects approximately 15% of the global population, while tension-type headaches have an even higher prevalence, estimated to affect up to 40% of adults at some point in their lives (Vos et al., 2017). Although pharmacological treatments remain a mainstay of headache management, many patients seek non-pharmacological approaches for either adjunctive care or as alternatives due to medication side effects, contraindications, or preference for natural therapies.

Acupuncture — a therapeutic modality rooted in traditional East Asian medicine — has increasingly become a focus of clinical research for headache management. This article examines the current scientific evidence for acupuncture in the treatment of migraine and tension-type headaches, reviewing the physiological mechanisms proposed and summarizing the outcomes of recent clinical trials.

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#### **What is Acupuncture?**

Acupuncture involves the insertion of fine needles into specific points on the body, referred to as “acupoints.” While traditional Chinese medicine describes acupuncture in terms of balancing “Qi” or energy flow, modern research focuses on measurable physiological responses to acupuncture stimulation. These responses include changes in neurochemical release, modulation of inflammatory pathways, and alterations in the autonomic nervous system (Zhao, 2008).

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#### **Headache Pathophysiology: Migraine vs. Tension-Type Headache**

Migraines are characterized by moderate to severe, often unilateral headaches that can be accompanied by nausea, photophobia, and phonophobia. The pathophysiology involves

neurovascular dysregulation, cortical spreading depression, and heightened central pain sensitization (Goadsby et al., 2017).

Tension-type headaches, in contrast, are generally bilateral and described as a pressing or tightening sensation. They are thought to arise from pericranial muscle tension, altered pain thresholds, and central nervous system dysregulation (Bendtsen & Jensen, 2006).

Given the multifactorial nature of both conditions, interventions that modulate central pain pathways and reduce musculoskeletal tension, such as acupuncture, are theoretically well-suited for management.

## **Proposed Mechanisms of Acupuncture in Headache Treatment**

Research into the biological effects of acupuncture has identified several mechanisms that may underlie its effectiveness for headache disorders:

### **1. Endogenous Opioid Release**

Acupuncture stimulates the release of endorphins, enkephalins, and dynorphins, contributing to pain modulation through the body's intrinsic opioid system (Han, 2004).

### **2. Modulation of Serotonin Pathways**

Migraines have been associated with fluctuations in serotonin levels. Acupuncture has been shown to influence serotonergic activity, potentially stabilizing the neurotransmitter environment associated with headache onset (Pomeranz & Berman, 2003).

### **3. Reduction of Neurogenic Inflammation**

Studies suggest acupuncture may inhibit pro-inflammatory neuropeptides such as CGRP (Calcitonin Gene-Related Peptide), implicated in migraine pathogenesis (Zhao, 2008).

### **4. Autonomic Nervous System Regulation**

Acupuncture may balance sympathetic and parasympathetic nervous system activity, improving vascular tone and reducing headache triggers associated with stress or muscle tension (Li et al., 2012).

## **What Does the Evidence Say? Recent Research Findings (2020 and Beyond)**

### **Acupuncture for Migraine: Clinical Trial Evidence**

A 2020 systematic review and meta-analysis published in *Frontiers in Neurology* reviewed 15 randomized controlled trials (RCTs) involving 2,056 patients and concluded that acupuncture is both effective and safe for the prevention of migraine attacks. The authors found that acupuncture reduced migraine frequency more than sham acupuncture and was comparable to prophylactic drug therapy, with fewer adverse effects (Yang et al., 2020).

Similarly, a 2020 Cochrane review indicated that acupuncture reduced headache frequency and intensity in migraine patients, with benefits sustained at least 3-6 months post-treatment (Linde et al., 2016; updated 2020).

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### **Acupuncture for Tension-Type Headaches: Clinical Trial Evidence**

Recent evidence also supports acupuncture for the treatment of tension-type headaches. A 2023 systematic review published in *Medicine (Baltimore)* evaluated 32 studies and reported that acupuncture significantly reduced headache frequency, intensity, and medication use in patients with TTH compared to control groups (Li et al., 2023).

A notable feature of these studies is that both manual acupuncture and electroacupuncture (EA) — where a mild electric current is applied through the needles — have demonstrated therapeutic benefits.

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### **Safety Considerations**

Acupuncture is generally well-tolerated when performed by licensed and properly trained practitioners. The most commonly reported side effects are minor and transient, including localized soreness, bruising, or mild fatigue after treatment (White et al., 2001).

In contrast to pharmacological therapies, acupuncture carries minimal systemic side effects and no risk of medication-overuse headaches — a common complication in chronic headache sufferers reliant on analgesics.

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### **Clinical Guidelines and Recommendations**

Reflecting the strength of recent evidence, several clinical guidelines now recommend acupuncture as a treatment option for migraine and tension-type headaches.

- The *American Headache Society* and *American Academy of Neurology* recognize acupuncture as a complementary therapy for migraine prevention.

- The *National Institute for Health and Care Excellence* (NICE) in the UK recommends acupuncture for tension-type headaches unresponsive to simple analgesics.

### Practical Considerations for Patients

Patients considering acupuncture for headache management should consult a licensed acupuncturist with clinical experience treating neurological conditions. Treatment protocols often involve:

- An initial evaluation to identify headache patterns and contributing factors.
- A course of treatment typically ranging from 6 to 12 sessions, depending on headache severity and chronicity.
- Integration with other supportive strategies, such as stress management, sleep optimization, and lifestyle modification.

### Conclusion

The evidence base for acupuncture in the treatment of migraine and tension-type headaches has expanded considerably over the past decade. High-quality clinical trials and systematic reviews support its use as an effective, safe, and well-tolerated treatment option — either as a stand-alone therapy or as part of an integrative approach alongside conventional medical care.

While further research will continue to refine our understanding of the optimal treatment protocols and mechanisms of action, acupuncture represents a scientifically credible option for headache sufferers seeking non-pharmacological relief.

### References

- Bendtsen L, Jensen R. Tension-type headache: the most common, but also the most neglected, headache disorder. *Curr Opin Neurol*. 2006;19(3):305-309.
- Goadsby PJ, Holland PR, Martins-Oliveira M, Hoffmann J, Schankin C, Akerman S. Pathophysiology of Migraine: A Disorder of Sensory Processing. *Physiol Rev*. 2017;97(2):553-622.
- Han JS. Acupuncture and endorphins. *Neurosci Lett*. 2004;361(1-3):258-261.

- Linde K, Allais G, Brinkhaus B, Manheimer E, Vickers A, White AR. Acupuncture for the prevention of episodic migraine. *Cochrane Database Syst Rev*. 2016(6):CD001218.
- Li C, Wang L, Zhang Z, Wang X, Cao Z, Wu Y. Acupuncture for tension-type headache: A systematic review and meta-analysis of randomized controlled trials. *Medicine (Baltimore)*. 2023;102(7):e32852.
- Pomeranz B, Berman B. Scientific basis of acupuncture. In: Stux G, Hammerschlag R, eds. *Clinical Acupuncture: Scientific Basis*. Springer; 2003.
- Vos T, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016. *Lancet*. 2017;390(10100):1211-1259.
- White A, Hayhoe S, Hart A, Ernst E. Adverse events following acupuncture: prospective survey of 32,000 consultations with doctors and physiotherapists. *BMJ*. 2001;323(7311):485-486.
- Yang Y, Que Q, Ye X, Zheng Y, Shu S, Dong H. Acupuncture for Migraine: A Systematic Review and Meta-Analysis. *Front Neurol*. 2020;11:543929.

*Curated and compiled by Dr. Nathan J. Heide, DAOM, MBA, LAc and Rebecca J. Carsten to offer an insightful overview of the subject matter related to migraines, headaches, dry needling, and acupuncture in Eugene, Oregon.*