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Editorial

# **Mysteries in Acupuncture - Future Research?**

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#### Abstract

The editorial lists 10 important topics that need to be considered more closely in the future in acupuncture research.

#### **Keywords**

Acupuncture; future aspects; research; TCM

While acupuncture has been practiced for thousands of years, several mysteries still warrant further research. By combining traditional knowledge with modern scientific methods, we can continue exploring acupuncture's mysteries and harness its potential for promoting health and well-being [1, 2]. Here are some of the greatest mysteries in acupuncture (Figure 1):



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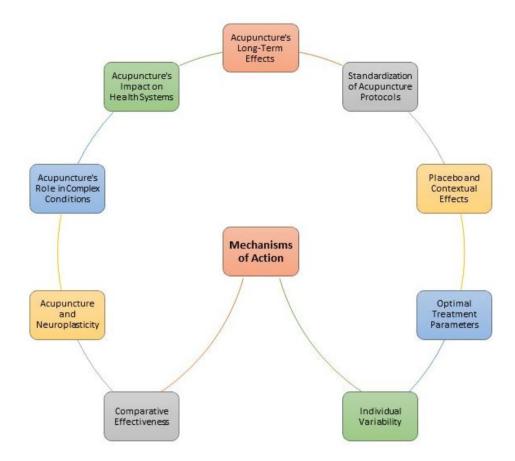


Figure 1 Topics that still need to be explored further in acupuncture.

#### 1. Mechanisms of Action

Despite the wealth of clinical evidence supporting acupuncture's effectiveness, the precise mechanisms by which it works remain elusive. Research should aim to uncover the specific physiological and biochemical pathways through which acupuncture exerts its therapeutic effects.

#### 2. Individual Variability

Acupuncture treatments can produce different responses in different individuals, even when treating the same condition. Understanding the reasons behind this individual variability, such as genetic factors, epigenetics, and patient characteristics, can help tailor treatments and optimize outcomes.

# 3. Optimal Treatment Parameters

There is ongoing debate regarding the optimal acupuncture treatment parameters, including needle insertion depth, duration of treatment, and frequency of sessions. Further research is needed to establish evidence-based guidelines for different conditions and patient populations.

#### 4. Placebo and Contextual Effects

The placebo effect and contextual factors significantly influence acupuncture's perceived efficacy. It is essential to investigate the specific contributions of placebo and context in acupuncture outcomes and explore the psychosocial and neurobiological mechanisms underlying these effects.

## 5. Standardization of Acupuncture Protocols

Acupuncture encompasses various techniques, styles, and approaches, making it challenging to standardize treatment protocols. Research should aim to establish standardized protocols for various conditions, ensuring consistency in acupuncture research and clinical practice.

## 6. Acupuncture's Long-Term Effects

Many acupuncture studies focus on short-term outcomes, but understanding the long-term effects of acupuncture is crucial for assessing its overall effectiveness and safety. Research should explore the durability of acupuncture's effects and investigate whether its benefits extend beyond the treatment period.

# 7. Acupuncture's Impact on Health Systems

As acupuncture becomes more integrated into healthcare systems, it is necessary to investigate its impact on healthcare delivery, cost-effectiveness, and patient outcomes. Research should examine how acupuncture can be effectively integrated into conventional medical models and explore its potential as a preventive and population health strategy.

### 8. Acupuncture's Role in Complex Conditions

Acupuncture has been studied extensively for certain conditions, such as pain management and nausea. However, its potential role in complex and multifactorial conditions, such as fibromyalgia, chronic fatigue syndrome, or complex regional pain syndrome, remains relatively unexplored. Further research should investigate the efficacy and mechanisms of acupuncture in these challenging conditions.

## 9. Acupuncture and Neuroplasticity

Acupuncture has been shown to modulate brain activity and induce neuroplastic changes. Investigating the effects of acupuncture on neural networks, neuroplasticity, and brain connectivity can provide valuable insights into its mechanisms of action and help optimize treatment approaches.

## 10. Comparative Effectiveness

While acupuncture is often compared to sham acupuncture or other non-pharmacological interventions, there is a need for more comparative effectiveness studies that directly compare acupuncture to conventional treatments or medications for various conditions. This research can inform evidence-based decision-making and help determine patients' most appropriate treatment options.

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In conclusion, the mysteries surrounding acupuncture persist, and its efficacy and mechanisms of action continue to be a subject of scientific inquiry. Future research endeavors employing rigorous methodologies and innovative approaches, hold the promise of unraveling these mysteries, shedding light on the underlying principles of acupuncture, and expanding its potential as a safe and effective therapeutic option for a wide range of health conditions.

#### **Author Contributions**

The author did all the research work for this study.

# **Competing Interests**

The author now declares that no conflict of interest exists in connection with the publication of this editorial.

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