

## Mini Review

# Acupuncture Effect on Low Back Pain Treatment

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## Abstract

Lower back pain is one of the main reasons for the patient to seek the health service. Different intervention modalities are used for the treatment of low back pain; including the alternative therapy, medications, physical therapy and the empowerment of patients for self-management of the problem. Acupuncture is one alternative therapy sometimes used for chronic low back pain. Acupuncture studies presented low to high scientific evidence as a form of treatment of chronic low back pain. The effects of acupuncture to low back pain are contradictory and inconclusive. Further studies with a larger number of participants and more precise methodology are necessary.

## Introduction

Chronic low back pain is one important musculoskeletal disorder that causes significant morbidity in the affected population. More than 80% of adults have suffered back pain at some point in lifetime. Low back pain has a multifactorial origin with several risk factors such as: age, sex, genetic, overweight and occupational conditions; including stress conditions [1-3]. Most cases of low back pain present spontaneous resolution. However, 20% of cases end up to chronic conditions and causing complications such as functional disability, depression and has a negative impact on the quality of life [1,4]. In addition, low back pain has an important impact on the country's economic and social. The US study indicates that direct and indirect costs of treatment and health care with low back pain cases represent 86 billion dollars per year [5]. The treatment of low back pain includes relative rest, activity modification, physical therapy, nonsteroidal anti-inflammatories, alternative therapy, empowerment of the population and physical therapy. The choice of treatment may follow according to the duration of symptoms, the potential cause, the presence or absence of radiculopathy and the results of imaging exams [1,4,6,7]. Due to the high prevalence of low back pain in the general population, healthcare professionals have sought different ways and forms of intervention to reduce social and economic impacts. Whereas the treatment with non-steroidal anti-inflammatory drugs are slightly more effective than placebo regarding disability; with small effect to pain, and present low level of scientific evidence [8]; other types of alternative treatments have been used. Among the interventions used, acupuncture is a method with low cost application and low contra lateral risk.

Acupuncture is a kind of alternative therapy with aims at the energy balance (Yin and Yang) through the application of needles at specific points in the skin (a cupoint). Acupuncture is considered as a good non-pharmacological intervention and complementary to therapy. This alternative therapy has been widespread in the last decade in western countries as a treatment to different diseases, including low back pain. Theoretically, acupuncture can control autonomic nerve system functions including sympathetic and parasympathetic activities. In this way, the acupuncture application may control the blood pressure, skin conductance, muscle sympathetic nerve activities and heart rate. Furthermore, acupuncture treatment activates distinct brain regions and modulates adaptive neurotransmitter in related

brain regions to alleviate autonomic response [7,9,10]. In addition, there is "gate spinal cord theory". This is the oldest methods of pain relief by hyper stimulation of the skin. Pain may be relieved by "closing the gate" by means of a central biasing mechanism possibly located in the brainstem reticular formation [11]. Other studies mention the possible psychological effect or placebo effect of acupuncture. However, this is not fully understood [10,12-14]. Anyway, the effects and efficacy of acupuncture to low back pain is contradictory and no conclusive.

According to the National Institute for Health and Care Excellence (NICE), there was still not compelling and consistent evidence of a treatment-specific effect for acupuncture. Therefore, acupuncture should not be offered as a form of treatment in cases of low back pain with or without sciatica [15]. However, other studies suggested that acupuncture is important intervention to back pain. Some controlled clinical trials have demonstrated positive effects for cases of low back pain [13,14]. Additionally, recent published study showed that acupuncture presented better results in relation to the cost-effectiveness when compared to the use of non-steroidal anti-inflammatory drugs; as therefore can be considered as an alternative treatment for low back pain, with reasonable cost-utility [12].

## Conclusion

Acupuncture is an alternative therapy of low cost with low contra lateral risk. Although some studies of low and high quality methodologic show benefits in patient with low back pain; further additional high-quality research with larger sample sizes and long-term of the follow-up are required improving confidence in estimates of acupuncture effect intervention. Moreover, assuming that acupuncture is based on energy balance (Yin and Yang); at this exact moment of time, we can conclude that energy does not exist; or the science has not been able to develop some method to measure it.

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