

# Scientific Basis Of Acupuncture

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Acupuncture stimulates the body's natural healing systems. The three main mechanisms of its actions are:

1. **Neurological**
2. **Biochemical**
3. **Bioelectrical**

The following will help us understand the details.

There has been more scientific research done on acupuncture than any other "complementary" medical therapy. Years ago, Dr. William Osler, the father of modern medicine in America, recommended acupuncture as the treatment of choice for lumbago (back pain). But not until President Nixon's 1972 visit to China did intense acupuncture research get sparked.

In a 1992 study, Cole tabulated the conditions of study in 365 Western and 344 Chinese research studies.<sup>1</sup> These investigated treatments of conditions range from 22-pain, 62-neurologic, to 54-addiction therapies. Double blind procedures have proven the validity of acupuncture.<sup>2</sup>



Clinical research has demonstrated the effectiveness of acupuncture in treating many disorders. For example: arthritis,<sup>3</sup> dysmenorrhea,<sup>4</sup> and headache.<sup>5</sup>

A 1986 single-blind trial, studied the effects of acupuncture on patients with angina pectoris (chest pain) unresponsive to standard medical treatment.<sup>6</sup> Research found that in addition to relieving chest pain, "compared to patients receiving sham acupuncture, the patients receiving acupuncture increased cardiac work capacity significantly."

In April 1996, the FDA lifted the "investigational use" status of acupuncture needles based upon a review of research. A 12 member consensus panel for the National Institute of Health (NIH) met in November of 1997. They concluded that the existing research already shows the effectiveness of acupuncture in certain conditions, while more research is needed.<sup>7</sup> A 2002, 87 page "Review and Analysis of Reports of Controlled Clinical Trials"<sup>8</sup> appears to have satisfied the NIH's directive. Every acupuncturist needs to review this article and the public should be aware of this work.

John Reed MD, wrote "The documentation of positive results in diverse conditions, including the medically difficult areas of chronic pain management and management of drug addiction, suggests that acupuncture is a real and potentially cost effective intervention."<sup>9</sup>

The advent of sophisticated research equipment has made possible the discovery of the mechanisms of acupuncture. We have found the acupuncture points have distinct anatomical<sup>10,11</sup> and electrical characteristics.<sup>12</sup> The body produces natural responses to being pierced by a foreign object.<sup>13,14</sup> Because of these characteristics, acupuncture can enhance and regulate the body's natural responses which include pain relief, stimulation of the



immune system, and healing.<sup>15,16</sup>

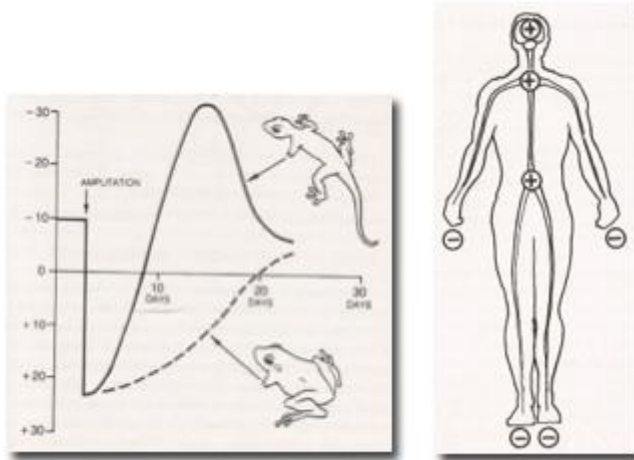
Studies utilizing PET scan technology have verified the linkage of distal acupuncture points to correlating brain centers and demonstrated the homeostatic effects of acupuncture.<sup>17</sup> After years, we have the long awaited discovery of the anatomical structures comprising the meridians!<sup>18</sup> This article summarizes the details of fascinating properties of these structures.

The effects of acupuncture are delivered by: 1) Neurological, 2) Biochemical, and 3) Bioelectrical mechanisms. In 1989 Deke Kendal organized tremendous amounts of research to describe in detail the neurological and biochemical mechanisms of acupuncture.<sup>14</sup>



1. **Neurological** - The A-delta and C fibers carry signals into the spinal cord and upward to the brain. The importance of the fibers in addition to mediating acupuncture is the connections to the internal organs through the dorsal horns of the spinal cord.<sup>14,19,20</sup>
2. **Biochemical** - Many bioactive substances including bradykinin, histamine and leukotrine are important for initiating responses at the acupuncture points. The serotonin, enkephalin, endorphins and substance P are important for mediating the central nervous system effects of acupuncture.<sup>14,21,22</sup>
3. **Bioelectrical** - Electric energy, naturally occurring in the body, has been found to stimulate regeneration and healing.<sup>23,24</sup> The limbs of frogs and rats were regenerated and resistant bone fractures were healed in humans by electric treatment.<sup>23,24,25</sup> Ions of radioactive isotopes, injected into acupuncture points, migrate along meridians.<sup>26,27</sup>

The bioelectrical mechanisms of acupuncture include: (23)



1. Stimulation of electric currents at the site of the needled acupuncture point.<sup>28</sup>
2. Electric conduction along meridians and other biologically closed electric circuits.<sup>29,30</sup>
3. Electric conduction along the perineurium (the covering around the nerve) which also influences the firing of the nerve.<sup>30,31</sup>

The complexity of the action of acupuncture is deceiving. It has been used effectively for centuries in the East. Acupuncture is a safe therapy which utilizes the body's natural healing systems. In this era of high tech medicine, acupuncture would be considered one of the greatest discoveries—if it hadn't already been developed centuries ago.<sup>32</sup>

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