

How Does Acupuncture Work?

by Damian Carey

Modern science is pursuing this question intently. The current status of research has identified thirteen sub-types of serotonin and that's only one of many neurotransmitters being analysed. What follows will make a lot more intrinsic sense to most people.

There are numerous ways in which we can describe the process of needling the human body. Let's describe, in plain language, the effect of acupuncture on muscle tension, the immune system and the blood circulation. I'll discuss the Chinese Medicine concept of Qi and finish with a look at what happens to the connective tissue when an acupuncture needle is inserted.

Muscle Tension

If you press on or lean into a tight muscle with a steady pressure, sooner or later that muscle will relax; the spasm dissolves and the muscle returns to its normal tone. In the same manner, an acupuncture needle inserted into a tight muscle has a similar effect, the muscle relaxes.

The Immune System

The human body has a multi-faceted immune system to protect the organism from external pathogenic invasion and to maintain internal harmony. The immune system operates partially via the autonomic nervous system (ANS) and partially via the hormonal system. When an acupuncture needle penetrates the skin anywhere on the human body, an immune response is initiated. Effectively, the body's attention is focused on the area. The body senses an invasion by a foreign object and activates its natural defences. Nerve messages are sent to the brain via the ANS and various hormones and other blood factors are produced.

The Circulation of Blood

One of the primary results of this immune response is an increase in local microcirculation around the needle. This occurs via the ANS effect of dilating blood vessels and the endorphine effect of relaxation of muscle tissue. Enhanced circulation allows the body to increase local levels of red and white blood cells, phagocytes, T-cells and anti-inflammatory agents.

As well as the increase in specific blood cells, the general increase in blood flow generates higher levels of oxygenation and nutrition to the tissues. Perhaps more importantly, increased blood flow leads to a more efficient elimination of carbon dioxide, thus reducing acidity in the tissues and enhancing cellular function. The body also produces endorphins, natural pain relieving chemicals that enhance muscular relaxation and increase the feeling of well-being at the tissue level.

Qi

The explanation given above is common sense; anyone with a basic understanding of anatomy and physiology would have to agree that it is true. However, if we want to explore the issue more fully we need to introduce the Oriental Medicine concept of Qi, a subtle vitalising factor or energy that permeates the body and flows in a set of particular pathways known as meridians or channels. This explanation will not satisfy the hard line scientist. Qi cannot be measured, it therefore remains speculative; yet from the CM practitioner's viewpoint it is enough to observe the activity of Qi, we know Qi by tracking its footprints.

The channels are defined by a series of points on the surface of the body where the flow of Qi is distinctly revealed. These acupuncture points, of which there are several hundred in the body, actually demonstrate a different electrical resistance on the skin surface (therefore there appears to be some scientific basis to their existence).

All of these acupuncture points have local effects (as described above) but in addition many of them are command points or mode switches which can be seen to have not only a local effect but a distal effect as well. We can observe how specific pain or congestion in a local area will occur simultaneously with intense pain on the command points of the particular channel; correspondingly we can manipulate these command points with needles in order to reduce the pain along the channel.

Oriental Medicine describes a healthy body as having a harmonious, even flow of Qi through the channels. When the body is disrupted due to external trauma, pathogenic invasion or internal deficiencies, the flow of Qi is disrupted. The Qi flow may be insufficient to energise the functions of the local tissues or it may become blocked or stagnant or excessive. The process of acupuncture adjusts the flow of Qi by increasing deficiencies, by reducing excesses and by redirecting Qi to other areas.

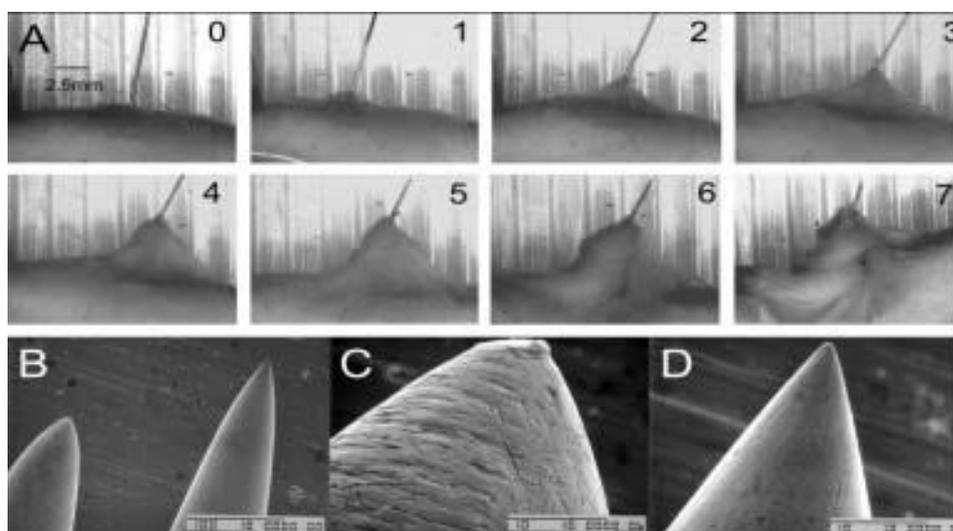
This explanation appears to make instinctive sense, but is there a physiological or anatomical basis that will allow us to understand the movement of Qi?

Connective Tissue

One promising possibility lies in an understanding of the connective tissues. These form a continuous sheath, binding and penetrating all of the soft tissues of the body. The acupuncture points and meridians can be viewed as a representation of this network of interstitial connective tissue. This hypothesis is supported by ultrasound images showing connective tissue cleavage planes at acupuncture points. In other words, the sites of the categorised acupoints coincide with junction points within the connective tissue network.

This viewpoint links closely with the Chinese Medicine (CM) concept of 'De Qi'.

An acupuncture point is not just inserted into the skin. The needle is manipulated with careful twisting or thrusting movements to generate what CM calls the arrival of Qi or De Qi. This feeling may be a mild pressure, a grabbing sensation or even a strong jolt. Notably, this is not just a local pressure, but a sensation that spreads, it can be felt travelling along the line of the limbs and often into the abdomen or head.



This phenomena is explored in a study by Helene M. Langevin and Jason A. Yandow, published in 2002 in *The Anatomical Record*. The paper has pictures showing acupuncture needles grabbing, and therefore tugging on, layers of connective tissue.

Thus a needle inserted into a distal point on the leg, for instance, can actually make adjustments to the tension of the tissues further up the leg and into the lower abdomen, simply because of the connectivity of the connective tissue.