

# *Pearls* of **Veterinary Practice**

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## What Acupuncture Can and Cannot Treat

Acupuncture has been used for over 2000 years to treat a variety of diseases. It is safe and effective, especially for conditions such as pain, geriatric diseases, and exercise-related diseases. There are 361 acupuncture points located throughout the body on meridians. Meridians are the energetic channels that connect all the points to each other. These points are stimulated by various means to produce a physiological effect in the body. All points have various functions throughout the body that can be used to treat different diseases. Certain precautions must be taken when treating weak, debilitated, or pregnant animals. *J Am Anim Hosp Assoc* 2006;42:244-248.

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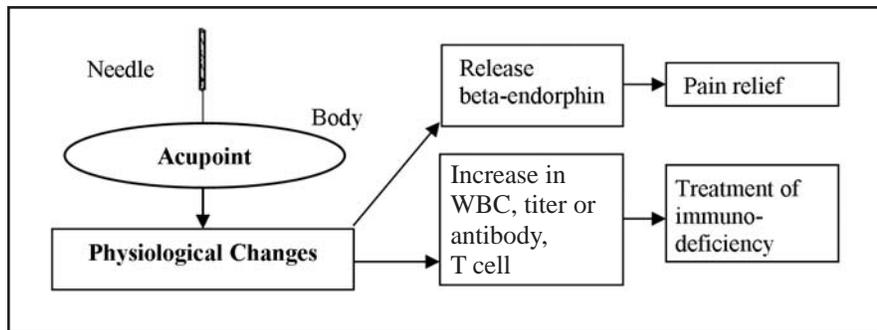
### Introduction

Veterinary acupuncture has been practiced in China for at least 2000 years.<sup>1</sup> Interest and activity spread to other Asian countries such as Japan and Korea about 1500 years ago.<sup>1,2</sup> During the past 25 to 30 years, there has been tremendous growth and development of acupuncture in animals in Europe and the United States. Acupuncture has been used to treat diseases in horses, cattle, dogs, cats, and birds, and many clinical studies have documented the benefits provided from acupuncture.<sup>2-6</sup> Clinical results from acupuncture vary with the disorder being treated and with the type of acupuncture technique employed. Thus, the goal of this paper is to describe the indications and contraindications of acupuncture in animals.

### What is Acupuncture?

Acupuncture may be defined as the stimulation of a specific point on the body, referred to as an “acupoint.” Physiological changes in response to acupoint stimulation is the basis of clinical treatment. Some of these changes include release of endogenous opioids, immune system stimulation, and blood pressure regulation [see Figure]. Stimulation of an acupoint causes activation of A $\alpha$  and A $\beta$  nerve fibers to conduct electrical signals through the spinothalamic tract to the hypothalamus, causing release of  $\beta$ -endorphins. Acupuncture also causes activation of the descending pain inhibitory pathway that activates the periaqueductal gray matter to release more  $\beta$ -endorphins, and the nucleus raphe magnus

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**Figure**—The stimulation of an acupuncture point in the body using certain techniques (e.g., needling) can induce physiological responses, such as the release of endogenous opioids and stimulation of the immune system. These physiological changes are the basis of clinical therapy. (WBC=white blood cell; T cell=T lymphocyte)

to release serotonins.<sup>7</sup> Pain is blocked with the release of these endogenous opioids and neurotransmitters. Acupuncture can also activate T-cell lymphocytes and increase the number of white blood cells for the treatment of immunodeficiency.<sup>8</sup> Acupoint stimulation also affects the blood pressure receptors and can be used to increase or decrease blood pressure.<sup>9</sup>

Many techniques have been developed to stimulate “acupoints,” such as dry-needle, moxibustion, electro-acupuncture, aqua-acupuncture, hemo-acupuncture, acupressure, and pneumo-acupuncture.<sup>10</sup> Dry-needle is the insertion of an acupuncture needle into an acupoint for stimulation of that point. The needles are filiform, sterile, and of varying widths and lengths. Dry-needle is the most common treatment modality used in veterinary medicine. Moxibustion is a form of stimulation that works by warming the acupoint and causing activation of the point. It uses crushed, dried leaves of *Artemisia argyi* rolled into a cigar shape. The herb is burned and then placed over an acupoint without touching the skin. The warming effect of the burned herb causes stimulation of the acupoint.

Electro-acupuncture is the attachment of electrical leads to dry-needles and connecting them to an electro-acupuncture machine. The purpose of using the electro-acupuncture machine is to control the frequency and amplitude applied to each point, which allows for more effective stimulation than the dry-needle method alone. Aqua-acupuncture is the injection of a soluble, sterile medium into acupoints. The purpose is to provide a constant stimulation via the pressure induced by the liquid injected into the acupoint. The most commonly injected substances are sterile water, saline, or vitamin B<sub>12</sub>. Hemo-acupuncture is performed by inserting a hypodermic needle into a blood vessel that contains an acupoint in order to aspirate a few drops of blood. The purpose of this modality is to release heat from the body.

Acupressure is the use of digital pressure directly to an acupoint. Each point requires about 5 to 10 minutes of constant pressure for stimulation. Pneumo-acupuncture is the injection of fresh air into an acupoint. The pressure created by the air bubble within the subcutaneous tissues causes stimulation of the acupoint. This modality can be used for muscle atrophy of the hip or shoulder.

## Acupoints

There are 361 acupoints located on 14 meridians throughout the body. There are four types of acupoints: motor points, midline points, nerve or nerve plexus points, and muscle-tendon junction points.<sup>11</sup> The motor points are located where a nerve enters a muscle. The midline points are located on the dorsal and ventral midlines. There are points over nerves and nerve plexuses. There are also points at muscle-tendon junctions where the Golgi bodies exist. Most of the acupoints are located on meridians. Meridians are energetic channels located throughout the entire body that form a connection between acupoints. The 14 meridians are named liver (LIV), gallbladder (GB), heart (HT), small intestine (SI), pericardium (PC), triple heater (TH), spleen (SP), stomach (ST), lung (LU), large intestine (LI), kidney (KID), bladder (BL), governing vessel (GV), and conception vessel (CV). Each point is named by its meridian and its corresponding number. For example, the liver meridian has 14 points, and the third point on that meridian is called LIV-3.

## Applications of Acupuncture in Animals

Acupuncture can be used for a variety of clinical conditions in animals, especially chronic diseases. Acupuncture is most commonly used in three areas: pain management, geriatric medicine, and sports medicine.

### Acupuncture for Pain Management

Acupuncture is reportedly effective for the treatment of various painful conditions in animals. These conditions include cervical, thoracolumbar, and lumbosacral hyperpathia; chronic lameness; degenerative joint diseases; and colic.<sup>2-6,12,13</sup> Acupuncture stimulation produces an analgesic effect, generally called acupuncture analgesia.<sup>14</sup> The release of  $\beta$ -endorphins may be one of the pathways in which acupuncture relieves pain.<sup>15,16</sup>

### Acupuncture for Geriatric Medicine

Geriatric animals suffer from a variety of conditions that can be treated with acupuncture. Many geriatric animals have generalized pain, arthritis, pelvic limb weakness, and chronic diseases that hinder their quality of life. Some of these animals are too weak to undergo conventional therapy

and thus require an alternative treatment that is safe and effective. Acupuncture can effectively treat geriatric animals and improve their quality of life.<sup>17</sup> Table 1 depicts numerous diseases that affect geriatric animals and the acupoints that can be used for treatment.

### *Acupuncture for Sports Medicine*

Animals can suffer from exercise-related conditions such as chronic pain and arthritis, as well as injuries to tendons,

ligaments, joints, muscles, and bones. Acupuncture can treat these conditions by relieving pain and promoting healing to the affected areas by increasing blood flow.<sup>13-16</sup> Table 1 contains examples of exercise-related conditions and the acupoints that can be used for treatment.

### **Safety of Acupuncture**

As compared with other modalities of therapy, acupuncture is much safer because of dual-direction regulation.<sup>1,2</sup> This

**Table 1**

**Specific Medical Conditions and the Acupoints Used for Their Therapy**

<b>Medical Condition</b>	<b>Acupoints</b>
<b>Painful conditions</b>	
Cervical pain	SI-3, LI-4, BL-10, Fu-tu, huao-tuo-jia-ji
Back pain	Bai-hui, Shen-shu, BL-18, BL-23, BL-40, BL-67
Degenerative joint disease	BL-11, KID-3, BL-23, BL-60, GB-39
Abdominal pain	Jiang-ya, TH-1, Dai-mai, ST-2, BL-21
Postoperative pain	Bai-hui, SI-9, LIV-3, Shen-shu
Soft-tissue injuries, muscle soreness	BL-21, BL-20, SI-9, BL-54, and local points
<b>Geriatric conditions</b>	
Degenerative joint disease, hip dysplasia, and intervertebral disk disease	BL-11, BL-60, BL-23, Bai-hui, Hua-tuo-jia-ji
Chronic renal failure	BL-23, KID-3, BL-21, ST-36, Shan-gen
Congestive heart failure	BL-14, BL-15, HT-7, An-shen
Oncological diseases	ST-36, LI-4, GV-14
Chronic diarrhea, inflammatory bowel disease	ST-36, GB-34, GV-1, Wei-jian
Chronic constipation and megacolon	CV-12, ST-25, ST-37, GV-1, TH-6
Megaesophagus, vomiting	GB-34, PC-6, CV-23, CV-22, CV-12
Chronic gastric disease, anorexia	Shen-gen, Jian-wei (Mi-jiao-gan), BL-21, ST-37
Immunodeficiency	LI-10, LI-4, ST-36, GV-14, KID-27
Infertility	Yan-chi, BL-26, GV-1, Bai-hui
Seizure disorders	GB-20, LIV-3, GV-1, BL-18, SP-10
General weakness	KID-1, PC-8, LI-10, ST-36, GB-34
Vestibular diseases, degenerative myelopathy	Da-feng-men, Tian-men, GV-14, Wei-jian, Bai-hui
Separation anxiety, behavioral problems	An-shen, HT-7, BL-14, BL-15
Skin allergies	BL-17, SP-10, Wei-jian, Er-jian
Chronic asthma	Ding-chuan, BL-13, CV-22, LU-9, KID-7
Chronic uveitis	BL-1/2, ST-1, Tai-yang, GB-1, GB-37
Chronic otitis	SI-19, TH-17, Er-jian, KID-1, Er-men
<b>Exercise-related conditions</b>	
Musculoskeletal soreness	Local points + BL-21, BL-40, LIV-1, ST-45, TH-1
Tendon/ligament injuries	Local points + GB-34, GB-41, LIV-3, BL-18
Enhancement of performance/agility	BL-21, BL-26, Qi-hai-shu, Yan-chi, Dan-tian, GV-4

means when an acupoint is stimulated, the physiological response induced matches the body's need at the time. An example of dual-direction regulation can be demonstrated through the use of two acupoints (e.g., BL-21 and GV-1). These two points address gastrointestinal motility and may be used in either an animal that is constipated or one that has diarrhea.<sup>1,10</sup>

**Legal Status of Acupuncture**

In most states, only licensed veterinarians may perform acupuncture. Before engaging in the practice of acupuncture, successful completion of a certified veterinary acupuncture training course is highly recommended. Institutions that offer veterinary acupuncture training programs include the Chi Institute, Colorado State University, International Veterinary Acupuncture Society, and Tufts University. The contact information for these institutions is provided in Table 2.

**Cautions and Contraindications**

Certain cautions must be taken when treating weak or debilitated animals. Fewer acupoints are used for weak or geriatric animals. When treating performance animals, wait a couple of hours after training or racing sessions before starting any acupuncture treatment. Acupoints around the thoracic cavity (e.g., BL-13 to BL-17) require an insertion distance for the needles that is shorter than for other acupoints. Be cautious when using moxibustion in the summer months, because it warms the body and might induce too much heat. Be cautious when using hemo-acupuncture in the winter months, because blood loss can lead to a cooling

of the body. Be cautious when using acupoints around the eyes, so as not to puncture the globe. Although rarely a problem in animals, electro-acupuncture must be done very cautiously in animals with pacemakers.

There are no specific diseases that cannot be treated with acupuncture. However, there are certain contraindications for specific applications of acupuncture based on the location of the acupoint or health status of the animal. For example, 1) a needle should never be inserted directly into a tumor or open wound; 2) a needle should never be used at acupoint CV-8; only moxibustion is used at CV-8; 3) during pregnancy, certain acupoints around the lumbar and lower abdominal regions (i.e., ST-36, SP-6, BL-40, BL-60, and BL-67) should not be used; 4) electro-acupuncture should not be used on animals with seizures; and 5) weak or geriatric animals should not receive hemo-acupuncture.<sup>1,10</sup>

**Conclusion**

Acupuncture can be used to treat a variety of conditions, including pain, geriatric diseases, and exercise-related conditions. Different acupoints and different methods of stimulation can be employed to treat specific conditions. Although few, some cautions and contraindications pertain to the use of acupuncture. It is highly recommended that a veterinarian become certified in veterinary acupuncture before implementing or offering it to the public. With the increasing number of clinical trials and research being performed using acupuncture therapy, a better understanding of acupuncture's mechanisms of action will be gained, and animals will greatly benefit from this understanding and from wider application of the technique.

**Table 2**

**Contact Information for Institutions Offering Veterinary Acupuncture Training Programs**

<b>Institution</b>	<b>Contact Information</b>
Chi Institute	9700 West Highway 318; Reddick, Florida 32686 www.tcvn.com Tel: 352-591-5385; Fax: 352-591-2854
Colorado State University	105 Equine Center; Fort Collins, Colorado 80523 Tel: 970-491-8509; Fax: 970-491-8419
International Veterinary Acupuncture Society	2625 Redwing Road, Suite 160; Fort Collins, Colorado 80526 Tel: 970-266-0666; Fax: 970-266-0777
Tufts University	200 Westboro Road; North Grafton, Massachusetts 01536 Tel: 508-839-5302

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