

## Integrative Medicine: Combining the Best of Conventional and Complementary Therapies

*It does not matter whether medicine be old or new, so long as it brings about a cure. It matters not whether theories be eastern or western, so long as they prove to be true. —Jen Hsou Lin, DVM, PhD*

**M**any people have never heard of *integrative medicine*, but this medical movement has left its imprint on human and veterinary hospitals, universities, and medical schools. Integrative medicine combines conventional Western medicine with complementary therapies such as acupuncture, Traditional Chinese Medicine, herbal remedies and chiropractic. Proponents prefer the term **complementary** to the terms *alternative* or *holistic* to emphasize that such treatments are used with mainstream medicine, not as replacements or alternatives. The ultimate goal is to improve the health of the patient in a more holistic manner.



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Complementary and alternative medicine (CAM) is the official term used by the U.S. National Institutes of Health to describe therapies that are outside of standard medicine. This includes acupuncture, chiropractic, Chinese Traditional Medicine, and a host of other practices including herbal remedies, diet and exercise. Some of these systems of complementary medicine are thousands

of years old. Although Western science has changed medicine radically over the last 100 years and has come to dominate all thinking about disease and treatment, complementary medicine has been increasingly sought out by the public.

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## FROM THE CEH DIRECTORS



*Dr. Claudia Sonder, Assistant Director*

This is a fantastic time in human and veterinary medicine. Technology has opened the door to looking at science in ways that completely change or enhance our understanding of biological processes. However, it is our reliance on the scientific method that has allowed us to advance. Evidence-based medicine continues to pave the path for new knowledge and better understanding of current practices. The objective assessment of what works and doesn't work is invaluable. Veterinarians tend to be good investigators, as their patients cannot talk. They rely on a thorough history and physical examination to guide diagnosis and treatment. The ability to perform a comprehensive physical exam still trumps all the bells and whistles of technology and is the foundation of clinical veterinary medicine.

Equine athletes pose a diagnostic dilemma when they display pain associated with their neck or back. Most sport horses have multifactorial lameness that can produce upper body discomfort as they attempt to compensate. Primary neck and back injuries can result in peripheral limb

lameness as well. The trick is to figure out what is primary and secondary and to localize pain in the upper body. If the primary problem is identified and treated, the secondary symptoms will often resolve. Our ability to examine the spine of the horse with Western medicine alone is limited in a field setting. This is further complicated by the potential risks associated with using diagnostic nerve blocks in areas close to the spinal cord.

Alternative modalities of veterinary practice are becoming more commonplace, especially in horses demonstrating performance issues. It is estimated that 80% of elite show jumpers and dressage horses are treated with an integrative approach. Veterinary acupuncturists and chiropractors can add valuable information to the physical examination of the horse. They have augmented their veterinary repertoires with additional tools to gather information. These findings can be used to localize and treat sources of discomfort. There are countless anecdotal reports of horses responding beneficially to these types of treatments. Yet there is moderate pushback in the veterinary community as many of these practices have not been subjected to evidence-based study. Furthermore, there are nonveterinarians performing these practices which further murks the waters and slows down the scientific advancement of knowledge.

The timing is right to continue to investigate chiropractic and acupuncture accuracy and efficacy. Most of the studies to understand pain transmission in humans were conducted using the animal model. We know that electroacupuncture increases circulating endorphins and works through multiple pathways to mitigate pain. We know that a contracted or shortened muscle that is painful can alter the functional anatomy of a

joint and affect joint health. We have human models of study that compare gait analysis before and after treatment with acupuncture with positive results. Current technology will allow us to examine these modalities and determine how best to use them.

The inclusion of acupuncture and chiropractic into veterinary school settings will facilitate evidence-based study and dissemination of information. The use of double-blind studies to assess response to treatment as well as force plate technology to evaluate improvements or change in gait after manipulation should be implemented. Ultrasound imaging as well as pressure algometry will be helpful in measuring responses of soft tissue to treatment. The use of local blocks (analgesia) to substantiate diagnoses should continue to be the gold standard when achievable for localization of pain. Client education focusing on integration of the modalities and selection of credentialed professionals will be necessary. Comparisons of outcomes with traditional treatment regimens should be conducted and recommendations for an integrative approach for specific types of injury made. This type of exploration will help veterinarians to make diagnostic and treatment recommendations that will optimize success in restoring comfort and athleticism to their equine patients. —Claudia Sonder



Acupuncture and chiropractic methodologies are rapidly being integrated into equine athletic medicine due to an increasing demand from horse owners. More veterinarians are seeking training in these techniques and employing them as an adjunct to their standard diagnostic and treatment services. Indeed, the UC Davis Veterinary Medical Teaching Hospital's Large



*Dr. Gregory Ferraro, Director*

Animal Clinic offers these techniques under the capable hands of Dr. Sarah le Jeune, a board-certified equine surgeon.

The inclusion of these alternative methods of treatment is not without controversy, however. Veterinarians, physicians and other medical experts have significantly differing views on the subject of acupuncture and chiropractic based on their medical training, clinical experience and personal biases. It is a given that more research is needed to provide the objective evidence that skeptics, perhaps rightfully, require. At UC Davis, we are well aware of these disparate opinions and lack of documented scientific analysis but respect all sides of the argument as it stands today.

Notwithstanding the controversial nature of complementary therapies, both Dr. Sonder and I believe it is our responsibility, as CEH Directors, to present as much of the available information as possible to our readers, including the opposing viewpoints and the availability of this service at UC Davis from an integrative medicine approach. We hope that the information presented is helpful and informative, and we welcome your thoughtful responses to this topic. —Gregory Ferraro

## **Integrative Medicine** — *Continued from page 1*

So, too, has it been increasingly accepted and integrated into Western medicine.

In 1992, Congress established the Office of Alternative Medicine, later modifying its name to the National Center for Complementary and Alternative Medicine (NCCAM). The NCCAM is part of the National Institutes of Health and the U.S. government's lead agency for scientific research on CAM. Annual research funding has steadily increased from \$2.0 million in 1992 to \$127.7 million in 2011 in an effort to explore complementary and alternative healing practices in the context of science, train CAM researchers, and disseminate authoritative information to the public and professionals.

Basic research studies have probed local effects of traditional acupuncture and electro-acupuncture, and neurochemical studies have been conducted to examine the effects of acupuncture on neurotransmitters associated with a reduction in pain. Clinical studies also are being conducted using randomized controlled clinical trials of acupuncture for postoperative pain. Recently, the American Pain Society and the American College of Physicians published new clinical treatment guidelines for persistent back pain that now include acupuncture as a treatment option.

In a survey of CAM therapies offered by U.S. hospitals, the American Hospital Association reported that more than 42% of hospitals responding to the survey offer one or more CAM therapies, up from 37% in 2007. This increase reflects the continuing demand by the public for CAM therapies and the continued

effort by hospitals to broaden the services they provide to patients.

The use of CAM in veterinary medicine has closely paralleled its development in human medicine, and integrative medicine for animals is becoming more and more mainstream. While there are myriad modalities that fall within CAM, the two most widely used are veterinary acupuncture and chiropractic.

The International Veterinary Acupuncture Society (IVAS) was established in 1974 and is the oldest organization in the United States to offer training to veterinarians in veterinary acupuncture and Chinese veterinary herbal treatment. The IVAS is dedicated to promoting excellence in the practice of veterinary acupuncture as an integral part of the total veterinary health care delivery system. It endeavors to establish uniformly high standards of veterinary acupuncture practice through educational programs and accreditation examination and process. The IVAS requires a DVM to complete 200+ hours of training, including completion of coursework, written exam, peer-reviewed case report, and 40 hours of internship with a current certified member.

The Chi Institute was founded in 1998 and is the leading veterinary continuing education provider of Traditional Chinese Veterinary Medicine (TCVM). Its mission is to train licensed veterinarians to become cutting edge animal health care providers capable of practicing veterinary acupuncture, Chinese herbal medicine and other TCVM skills. They believe that the best veterinary health care is the integration of TCVM and conventional veterinary medical care and that both systems offer unique advantages.

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The American Veterinary Chiropractic Association (AVCA) is the primary national credential for chiropractic in North America. The AVCA develops standards of care in animal chiropractic, conducts a professional certification program and awards credentials to individuals who meet established criteria and assessments in different modes of care. Certification courses are offered to licensed veterinarians and chiropractors, consisting of a minimum of 200 hours of lecture and laboratories completed at one of three recognized animal chiropractic schools. Upon completion of the course, a final exam is administered which would enable the candidate to register for the AVCA or International Veterinary Chiropractic Association certification examination.

A 2008 survey conducted by the American Association of Equine Practitioners identified that 20% of equine practitioner respondents perform some form of complementary medicine treatment modality themselves (most commonly acupuncture), and of those that do not, 80% refer cases specifically for complementary medicine to veterinarians who have this expertise. Multiple veterinary institutions including the University of California, Colorado State University, the University of Florida, Oregon State University, and Virginia Tech, to name a few, are including acupuncture in their clinical services and veterinary curriculum.

## **Controversy Surrounding Complementary and Alternative Medicine**

As the use of alternative medical therapies has grown in the United States, so has the controversy

surrounding it. The controversy lies primarily in the fact that these methods have not been subjected to the rigorous scientific testing (the experimental method) on which much of conventional Western medicine is based. Opponents of CAM believe that there is not enough scientific evidence to support its efficacy and use. While some conventional medicine practitioners see this as a clear black-and-white issue, others embrace the availability of therapies that have proven effective in patients, particularly for the management of chronic diseases and pain.

Medicine's ancient and still primary calling is the care of the ill. Western societies have endorsed and followed the practice developing from a scientific method of disease, in which the body is dissected in molecular and genetic terms. This approach is effective for certain diseases, but not for all. A host of chronic ailments, nuisance conditions, and psychologically oriented problems have thus far proved resistant to effective therapies from this scientific orientation.

Many physicians have adopted a viewpoint that accommodates the possibility that CAM therapies are as valid as conventional medicine. They believe that CAM therapies do need to be proven scientifically but contend that the criteria of judgment should be broadened to include social and psychological factors. Even if the response to certain alternative therapies proves to be a placebo effect, this does not in itself exclude their efficacy.

Dr. Wayne Jonas, a physician and fellow of the American Academy of Family Physicians, provides a compelling argument for broadening the scope of Western medicine to include nontraditional ways of viewing health and disease. He states:

*Modern medicine is largely an invention of Western cultures. While it succeeds dramatically in many areas, such as the control of acute and infectious disease, it also fails in others, such as the management of chronic conditions with complex etiologies [causes]. It has mastered the cure, but struggles with the care... Its successes and failures have arisen largely from a focus on science as defined by laboratory and experimental methods and it is empowered by technology. A singular orientation of research methods toward the experimental method for defining what is valuable in medicine accompanies this success.*

*However, forces such as information technology, the increasing democratizing of medicine, migration of peoples, the speed of travel, and the subsequent globalization of cultural concepts once isolated to certain parts of the world have opened a new challenge for this approach to medicine. Basic assumptions about the building blocks of the world and the nature of life, health, disease, and treatment are now opening up to the diversity of concepts in the world's healing traditions.*

Jonas poses the question of whether it is possible to develop a pluralistic approach to research methods that retains the value of Western science for medicine and yet respects the diversity of radically different concepts about life, health, and disease.

Dr. Alfred Tauber, a physician and philosopher at Boston University, believes that disease and human suffering cannot be understood solely from one perspective. He says:

*The experience of being sick and caring for the ill are different... Biomedicine, for all of its explanatory power and therapeutic triumphs, is, finally, an*

approach to care in constant evolution as it seeks to optimize its own methods and successes...

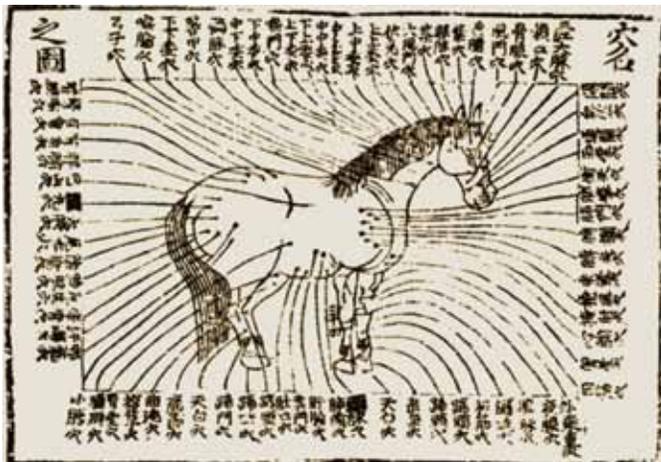
What is "alternative" at one time might well become "conventional" at another. What some take as wild inference may be a question for another of considered judgment and justifiable interpretation. Medicine is not a formal science and intuition plays a role more prominent than we might like, and physicians must often practice the "art of medicine" with a lack of authoritative scientific knowledge that plagues nonconventional therapies.

The Integrative Medicine Center in Connecticut, developed at Yale University in 2000, is a model of integrative care that blends conventional care with CAM, research and clinical care with education, and the training of naturopathic physicians with the training of students from the various conventional medical programs. Their belief is that if complementary therapies and conventional care are both here to stay, their graceful alignment must be a priority. Integrative medicine, they say, is the promise of a bridge across troubled waters.

### Acupuncture

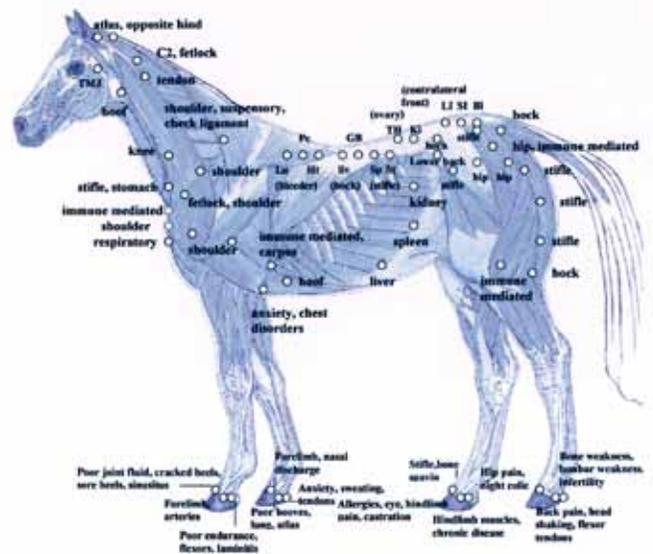
Acupuncture is the stimulation of specific predetermined points on the body (acupoints) to achieve a therapeutic effect. It has been a diverse tradition with many styles both in historical and modern times. It is generally believed to have originated in China and has an extensive body of literature that began around 200 BCE. It is one aspect of Traditional Chinese Medicine (TCM).

Acupuncture involves the insertion of a needle through the skin at acupuncture points for treating disease, including pain. The ancient Chinese discovered 361 acupuncture points in humans and 173 in animals.



The ancient Chinese discovered 361 acupuncture points in humans and 173 in animals.

Modern research shows that these acupoints are located in areas with a high density of free nerve endings, mast cells, small arterioles and lymphatic vessels. Stimulation at acupoints induces the release of beta-endorphins, serotonin and other neurotransmitters. Therefore, the use of acupuncture for pain relief is well supported by modern research studies. The effect of acupuncture on internal organs and on the equilibrium of the body as a whole is less well understood, and more research is necessary to fully explain this ancient therapy.



Diagnostic acupuncture palpation points. Illustration used with permission from Elsevier.

The effects of acupuncture therapy cannot be explained in terms of a single mechanism, but rather a series of interactions between the nervous system, the endocrine system and the immune system. Acupuncture needling causes microtrauma, which in turn causes a local inflammatory effect. This inflammatory effect results in an increased local tissue immune response, improved local tissue blood flow, and muscle and tissue relaxation. Some acupoints are known as "trigger points." These are tender areas found in skeletal muscle associated with a tight band or knot in the muscle. The principal trigger points in a muscle are located at its center in the motor endplate zone. This is where the nerve ends in a muscle and causes the muscle to contract.

Acupuncture point selection is based on locating points on the body where stimulation will produce a beneficial change in the central nervous system by modulating ongoing physiologic activity. The exact anatomical location of equine acupuncture points has been debated

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over the past two decades. Some veterinarians base their acupoint location on the traditional Chinese equine acupuncture maps. Others base their equine acupuncture point location on an extrapolation from human acupuncture meridians to the equine, adjusting point location to the equine anatomy. Interestingly, there is substantial overlap between these two systems.

Modern acupuncture needles are 0.5 to 3 inches long, ultrafine, and are made of very flexible stainless steel. They are presterilized, nontoxic and disposable. Depending on the condition being treated, 1 to 30 needles may be inserted and left in place for 5 to 30 minutes. Depending on the sensitivity of the patient, additional stimulation of acupoints by needles can be done by rotating the needles or attaching electrodes to send a weak electrical current through the needles (electroacupuncture). Heating the needles with a burning moxa herb (moxabustion) may be indicated in certain conditions.

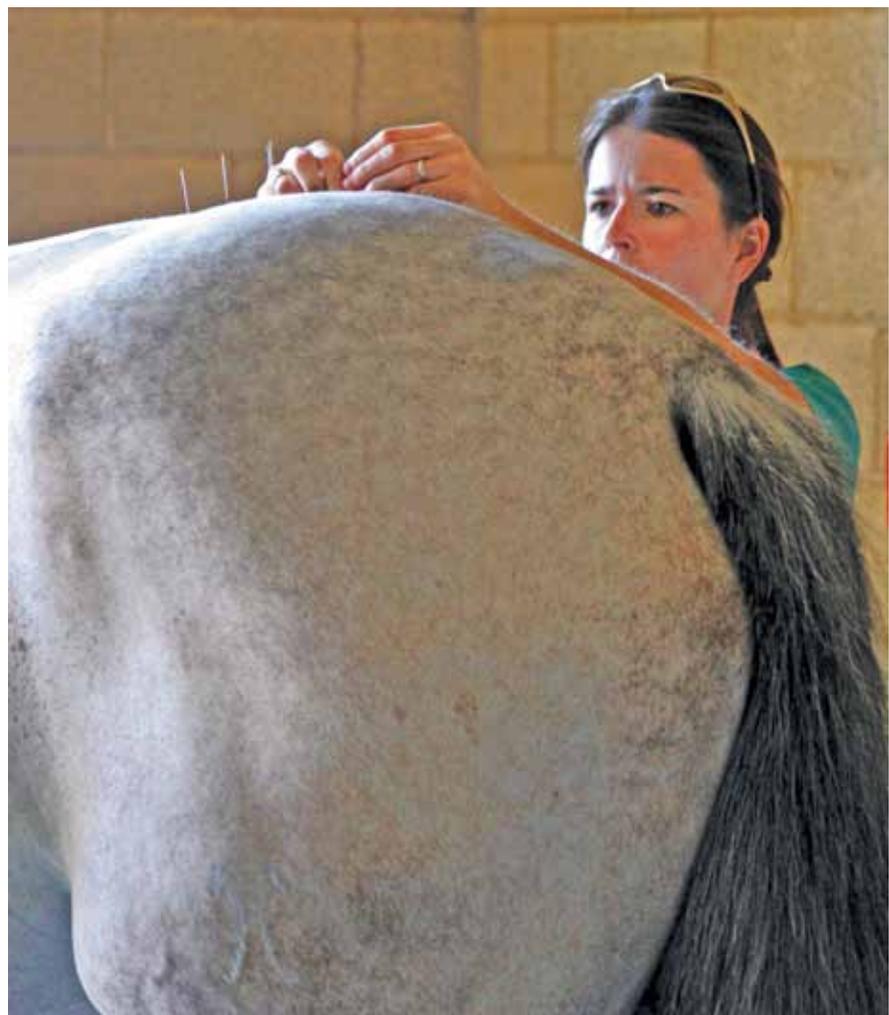
The number of treatments depends on the nature, severity and duration of the problem. A single treatment may be enough for a very acute condition, but generally three to five treatments are necessary to obtain results for chronic conditions such as back pain. Some animals may need to be treated at regular intervals to prevent recurrence of degenerative conditions; this is particularly true for horses with back pain.

**Clinical trials indicate that acupuncture therapy may be effective as an adjunctive treatment (an additional therapy) in the following conditions:**

**Musculoskeletal problems—Muscle**



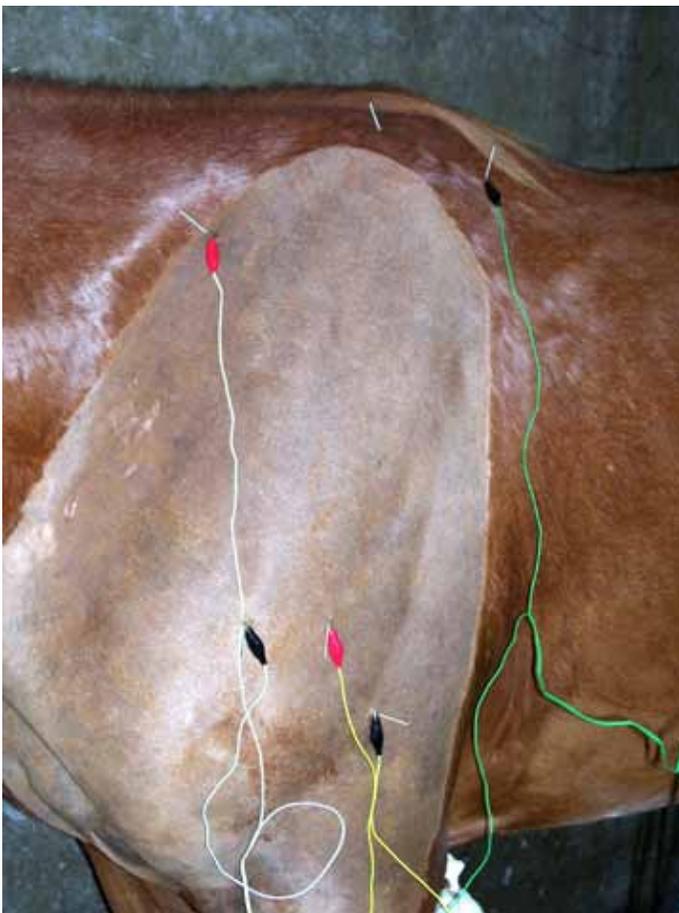
*Acupuncture on a horse. Acupuncture is very safe when performed by a trained veterinarian and is well tolerated by horses. Horses do not require sedation and need only mild restraint for this procedure.*



*Acupuncture needle placement in a horse. Points are selected based on the horse's sensitivity to needles, pain pattern and personality type.*



*Electroacupuncture on a horse with back pain. Back pain is commonly seen in horses and can be successfully treated with acupuncture and chiropractic. Typically, at least three consecutive treatments are required to obtain resolution of clinical signs.*



*Electroacupuncture on a horse with sweeney (damage to the supra-scapular nerve, which will cause shoulder joint instability and lameness). Electroacupuncture is a stronger way of stimulating the acupuncture point and is particularly useful in injuries involving nerve damage.*

soreness, back pain, osteoarthritis, degenerative joint disease, obscure lameness, tendon/ligament problems, laminitis

**Neurological disorders**—Seizure, laryngeal hemiplegia, facial and radial nerve paresis

**Gastrointestinal disorders**—Diarrhea, impaction, chronic colic, gastric ulceration

**Other chronic conditions**—Heaves (chronic obstructive pulmonary disease, recurrent airway obstructions, asthma), anhydrosis, uveitis, behavioral problems, Cushing's disease, hypothyroidism, hyperthyroidism, infertility, renal failure, geriatric weakness, skin problems

**Performance enhancement and prevention of disease**—Horses experiencing performance issues associated with musculoskeletal pain, who must comply with prohibited substance policies mandated by show associations, can benefit showside from acupuncture and/or chiropractic treatments. This occurred at the 2008 Olympics and the 2010 World Equestrian Games in compliance with the FEI.

The physiological effects induced by acupuncture include:

- Pain relief
- Regulation of gastrointestinal motility
- Anti-inflammatory effects
- Immunoregulation
- Endocrine and reproductive regulation
- Antipyretic effects
- Promotion of microcirculation

Acupuncture is a very safe medical procedure when performed by a

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qualified veterinarian. Very few negative side effects have been reported in clinical cases and most horses tolerate the treatments well with minimal restraint and no need for sedation.

### **Contraindications**

**Acupuncture is NOT recommended during pregnancy as it can cause uterine contractions. It is also not recommended as the sole treatment modality in cases involving fractures, open wounds or infectious conditions.**

### **What to Expect During an Acupuncture Appointment**

A veterinary acupuncturist's diagnosis is based in part on conventional Western methods: obtaining a thorough medical history, discussing the primary complaint and goals for improvement, performing a physical exam, blood work, radiographs, ultrasound, and so forth. However, particular attention will be given to the tongue color and pulse quality of the animal, and a diagnostic acupoint palpation exam will be performed to identify particularly painful areas along acupuncture meridians translating to disease patterns and/or referred musculoskeletal pain.

### **Chiropractic**

Chiropractic care focuses on the health and proper function of the spinal column, although the pelvis, limbs and head are also considered. Chiropractic uses controlled forces applied to specific joints or anatomic regions to cause a therapeutic response due to induced changes in joint motion, muscle function and neurological reflexes.

When a chiropractor examines a patient, he/she is looking for joints with a reduced range of motion. The common principle in all chiropractic theory is that joint dysfunction affects the normal neurological balance found in healthy individuals. The spinal column should be considered as a series of "motor units." These consist of two adjacent vertebrae and all their associated soft tissue structures—muscles and ligaments, nerves, blood vessels and all the contents of the intervertebral space. Any restriction in the normal range of motion of a motor unit is defined as a "vertebral subluxation complex," which is very different from the term "subluxation" used in conventional veterinary medicine, indicating that the joint is "out of place." When a restricted joint or subluxation complex is identified, a chiropractic adjustment is done to restore normal joint motion and correct neurologic dysfunction.

A chiropractic adjustment involves a high velocity, low-amplitude thrust that induces segmental spinal motion. This motion usually exceeds that

created by normal locomotion. The adjustment activates muscle spindle cells and other local proprioceptive receptors, which provide stimulation to override the neurologically induced restrictions in that area and inhibit the perception of the painful stimulus.

The goal of any adjustment is to restore the optimal range of motion to that joint, which will subsequently alleviate inflammation in and pressure on surrounding nerves and soft tissue. The inflammation makes it difficult for nerves to transmit their messages accurately, similar to static on a telephone line. Considering that nerves coupled with the brain and spinal cord (the central nervous system) control everything in the body, improving their ability to communicate well enhances overall health. This is particularly important in the spine.

### **Contraindications**

**Chiropractic is NOT recommended in cases involving fractures or infectious conditions.**

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*A chiropractic adjustment affecting the sacroiliac joint. Biomechanically, the sacroiliac joint is very important in horses because the power/energy generated in the hind end is transferred through the sacroiliac joint to the spine and then travels forward. Restrictions in this area are common.*



*Motion palpation of the lumbar spine. Restrictions in the lumbar spine are commonly identified in horses and can result in back pain, girthiness and loss of performance.*



*A chiropractic adjustment of a joint in the lumbar spine. The adjustment works by stimulating certain receptors (muscle spindle cells) in the muscles surrounding the joint, which will reactivate innate patterns in the nervous system telling that joint to move. The chiropractor is not moving the joint itself but just “reminding” the body that this joint could and should move. This is why it is possible for a relatively small person to adjust the joints of a large horse.*



*Chiropractic adjustment of the poll (atlanto-axial joint). Restrictions in the poll are very common and result in unwillingness to take the bit and collect, inability to bend and other subtle performance problems. Chiropractic is a very safe procedure when performed by a veterinarian certified in veterinary chiropractic.*

## **Integrative Medicine** — *Continued from page 9*

### **What to Expect During a Chiropractic Appointment**

During the exam, your veterinarian will carefully palpate your horse's joints and check their range of motion. This is referred to as "motion palpation." Particular attention is given to each joint in the spine, but limbs are also evaluated. When a restricted joint is identified, it is corrected by an adjustment, which is a very specific and gentle thrust into the joint. After the adjustment, the joint is palpated again to be certain that it is moving more freely.

The adjustments usually look like quick little pushes on the animal. In order to be at the correct angle to the spine and to be high enough above the horse, the doctor will stand on "bales," which are large Styrofoam blocks inside of cases that resemble hay bags. Most animals enjoy being adjusted and are relaxed during their appointment. Sedation is not required and is somewhat contraindicated since it will interfere with the ability of the nervous system to respond to the treatment. Most adjustments in horses take between 15 and 30 minutes.

### **Acupuncture/Chiropractic Complement Traditional Lameness Evaluation**

Acupuncture/chiropractic evaluation and treatment are not a substitute for a thorough lameness diagnostic evaluation because many horses have musculoskeletal issues that are identified and managed with traditional approaches. Most practicing equine veterinarians have not been educated or trained in procedures to perform a thorough functional biomechanical evaluation of the equine spinal column and joints. Consequently, horses with lameness issues not diagnosed readily using traditional methods, or with suspected concurrent neck or back pain, are good candidates for referral.

Veterinary chiropractic and acupuncture treatments are not meant to replace traditional veterinary medicine but instead work best when integrated with it.

### **Gathering Evidence for Complementary Medicine in the Veterinary Arena**

To become fully accepted in the veterinary and scientific community, there is a need to perform scientifically sound clinical trials for horses undergoing acupuncture and chiropractic treatments for a variety of conditions.

Objective and noninvasive methods of assessing foot-fall patterns and lameness in horses can be performed with force plate analysis, which would be an excellent tool to quantify the response of different treatment modalities in clinical patients over time. UC Davis recently acquired a force plate to enhance lameness evaluation and research and is working toward a goal of installation. This would provide objective information regarding limb loading and multifactorial lameness.

Colic is also a very common problem in horses and is frequently related to changes in gastrointestinal motility. Acupuncture and chiropractic are currently being used as adjunctive therapies to promote GI motility. An objective assessment of motility in clinical patients could be performed with noninvasive monitoring devices such as the Smartpill. This could have significant implications for postoperative ileus, which is a common complication after colic surgery. \*

### **Common Symptoms of Horses Presenting for Acupuncture/Chiropractic Treatment**

- ▶ Poor performance
- ▶ Lameness, stiffness
- ▶ Back, neck or tail pain
- ▶ Abnormal posture/changes in posture or topline
- ▶ Discomfort when saddled (cinchy, girthy)
- ▶ Difficulty bending to one side
- ▶ Reluctance to pick up a lead, inability to maintain a lead, cross-cantering
- ▶ Traveling with a "hollow topline" (head/neck elevated and back hollow)
- ▶ Hesitating to do things they normally do, such as picking up feet, stepping down out of a trailer, turning in either direction, refusing jumps
- ▶ Difficulty engaging the hindquarters or traveling long and low
- ▶ Holding tail abnormally
- ▶ Head tilt, difficulty chewing
- ▶ Uneven muscle development
- ▶ Uneven pelvis or hips
- ▶ Difficulty flexing at the poll, pulling on one rein
- ▶ Difficulty getting up and down
- ▶ Muscle atrophy
- ▶ Changes in behavior or attitude

## Equine Integrative Medicine Service at UC Davis

Acupuncture, Traditional Chinese Veterinary Medicine (TCVM) and Chiropractic are offered at the **William R. Pritchard Veterinary Medical Teaching Hospital's Large Animal Clinic** as an adjunctive clinical service to inpatients and outpatients. Horses may be examined at the Large Animal Clinic or at their local barn. Acupuncture, TCVM and Chiropractic can easily be integrated into conventional diagnostic and treatment modalities to optimize clinical outcome and performance, particularly in musculoskeletal conditions.



*Dr. Sarah le Jeune*

Dr. Sarah le Jeune, DVM, Diplomate ACVS, DECVS, CVA, is certified in both veterinary acupuncture and veterinary chiropractic. Dr. le Jeune graduated from the University of Liege (Belgium) and became a board-certified surgeon in 2003 after completing a residency in equine surgery at UC Davis. She has been a member of the UC Davis Equine Surgery faculty since 2003. Her surgical expertise includes emergency surgery (mainly colic surgery) and general surgery.

Dr. le Jeune also focuses on the treatment of various performance-related musculoskeletal injuries and lameness by an integrative approach including acupuncture and chiropractic. She received her acupuncture training from the Colorado State University and the Chi Institute in Florida. She also recently obtained certification in veterinary chiropractic by the International Veterinary Chiropractic Association.

Dr. le Jeune began riding horses at age 4 and later showed extensively in the Jumper division in Belgium until 1998. Her strong involvement with performance horses made her pursue all possible treatment and management modalities, including chiropractic and acupuncture, to maintain and preserve soundness in athletes.



*Dr. le Jeune performing with her horse Wiley E. Coyote.*

## Wrisque Returns to Dressage

*A Case Study from the William R. Pritchard Veterinary Medical Teaching Hospital*

Wrisque, an 8-year-old Dutch Warmblood mare used for dressage, presented to UC Davis for evaluation of multiple limb lameness for the last 5 months. The referring veterinarian could not localize the lameness with joint blocks and the horse did not respond to steroid injections into the lower hock joints. The horse was rested but remained unable to perform basic dressage movements. The mare was not able to round her back and push from behind. Her gait abnormalities were worsened when held in a frame.

On presentation to UC Davis, Wrisque was initially evaluated for possible neurologic issues. Overall, her neurologic exam was within normal limits except for a slight toe drag of the right hind leg during pivot exam. Multiple tests including EPM and Lyme disease serology, as well as a chemistry metabolic profile, parathyroid hormone and vitamin D levels were submitted to rule out possible infectious/dietary/metabolic sources of her clinical signs. These tests were all negative.

Wrisque also had a thorough lameness evaluation performed.

The evaluation revealed a mild left front limb lameness that partially improved after blocking her foot and was abolished after blocking all structures below her carpus. However, ultrasound of her flexor tendons and suspensory ligament in that leg did not reveal any significant abnormalities. She also showed mild lameness on the circle on hard ground on the right front leg, which resolved after blocking her right front foot. Wrisque's diagnostic acupuncture palpation exam revealed moderate to severe pain in her lumbosacral and sacroiliac area bilaterally.

Wrisque was kept at the UC Davis VMTH overnight for further evaluation and lameness exam the next day. Wrisque was re-examined the following morning. At that point, focal sweating was noted on her right side and she also appeared to have a shifting front and hind limb lameness. A full body nuclear scan was therefore performed to identify any additional causes of potential lameness. The nuclear scan identified increased radiopharmaceutical uptake in her distal coffin bones in all four limbs, suggestive of pedal osteitis. This was confirmed by radiographs and recommendations were made to change Wrisque's shoes.

Wrisque also had acupuncture and chiropractic treatment to address her secondary back and body pain and recommendations were made to continue acupuncture and chiropractic treatments every couple of weeks thereafter. In the meantime she was to gradually resume light work under saddle in soft footing, emphasizing long and low work. Wrisque's follow-up exam and treatment were performed at her farm where she was evaluated under saddle. No lameness could be identified at that point at all three gaits in either direction and the mare appeared to have no trouble working from behind and rounding her back. Even so, Wrisque was evaluated from an acupuncture and chiropractic standpoint and subtle sensitivity was identified in her lumbar area, which resolved after treatment. The mare has currently resumed full dressage training.



*Wrisque has resumed full dressage training.*

## James M. Wilson Award

We apologize for inadvertently omitting this announcement from an earlier issue. Congratulations to Dr. Lucy Anthenill for winning the 2010 James M. Wilson Award for her work investigating fractures in the proximal sesamoid bone of racehorses.

The Wilson Award is given each year to an outstanding equine research publication authored by a graduate academic student or resident in the UC Davis School of Veterinary Medicine. Dr. Anthenill's research culminated in the manuscript, *Comparison of Macrostructural and Microstructural Bone Features in Thoroughbred Racehorses With and Without Midbody Fracture of the Proximal Sesamoid Bone*.

Dr. Anthenill compared bone structure and microscopic features of fractured proximal sesamoid bones with those of nonfractured proximal sesamoid bones from other racehorses. Fractured proximal sesamoid bones were much denser (compacted) than the nonfractured bones. Most notably, irregular fracture margins at the back of the fractured bones indicate that proximal sesamoid bone fractures start from the back and travel to the joint surface. Several of the fractured proximal sesamoid bones contained focal bone loss along the fracture at the back of the bone that would predispose the bone to fracture.

Based on these findings, diagnostic imaging methods that detect porosity or localized areas of bone loss may help to identify horses at risk for a proximal sesamoid bone fracture and provide an opportunity to prevent this catastrophic injury by allowing for modifications of training, racing and layup schedules. Congratulations, Dr. Anthenill!



Dr. Lucy Anthenill



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## Take the Equine Industry Survey



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PUBLICATIONS

American Horse Publications is seeking horse industry participation in its second Equine Industry Survey to gauge trends in the U.S. equine industry. The purpose of the survey is (1) to obtain information regarding past, present and expected future participation in the equine industry, (2) to identify the issues most critical to those who own or manage horses, and (3) to analyze issues pertaining to horse health. Those eligible to participate in the survey are men and women 18 years of age and older who currently own or manage at least one horse and live in the United States.

Make your voice heard. To take part in the survey, visit [www.horsesurvey2012.com](http://www.horsesurvey2012.com).

# The Best Wake-Up Call Is A Near Miss

by Claudia Sonder, DVM

**A**s an equine veterinarian, part of my job is to educate my clients about disaster preparedness. In California, wildfires pose seasonal threat, and all of us who live in the countryside take a deep sigh of relief when the first rain hits. Recently, I found myself face to face with a wildfire and when the call came to evacuate my ranch, I learned the hard way that I was not prepared. Don't let this happen to you.

It was a warm, windy night and I walked into my house at the end of a long day. I sat down to eat my dinner and smelled smoke. It was mild at first and I thought my neighbor was burning wood in his fireplace, but it rapidly filled my house. I opened my front door to see a smoke-filled driveway and I could not make out my barn that was 300 feet away. The phone rang as I was pulling my boots on and one of my clients asked if I was okay. She went on to say that there was a large fire burning out of control about a mile from my ranch. As I was speaking with her, call waiting signaled an automated message from the fire department. I clicked over to hear that there was a mandatory evacuation in place.

My mind started to reel. I was alone, I have seven horses on my ranch, it was dark, my horse trailer was loaned out. I quickly began to call nearby clients for

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trailer assistance. I ran to my truck to grab my overhead light so that I could find my horses in the back pasture, which was nearest to the fire. I could see the glow of the fire over the hill and my horses were on alert. The wind was gusting and ash was raining down... the oaks swaying overhead and the nervous animals at my side created a real sense of danger. I gave myself a pep talk to calm down as I knew the horses would feel my anxiety. They were unusually compliant as I haltered them one by one. I suspect they realized my role as their guardian.

Once I had the horses up in my barn and paddocks, I scrambled to find halters and leads for each one. I searched frantically for water buckets to have on hand in their temporary enclosures as I awaited the trailer brigade. I regretted not replacing the bulbs on the overhead lights of my loading area. I did not have contact information for the fire marshall or an efficient way to get updates on the fire. I did not have a phone list at the ready for help. I realized that if the fire blew through, I would not have time to grab my sentimental from my home. I was too busy attending to the animals in an unorganized fashion, wasting time looking for items that should have been readily available.

The first trailer arrived and we loaded up the older crew. Luckily, they were good loaders and had had plenty of practice. The smoke was becoming less dense and a client of mine drove in the driveway with an update. The fire had slowed down and the degree of danger was downgraded. I left the rest of the horses up in the main yard with my additional trailers on standby. It was a long night, but my ranch was safe. When I finally climbed into bed in the early hours of the morning, I was thankful for the small deeply meshed horse community in Napa. The offers of help were abundant. Sometimes the best wake-up call is a near miss. Next time, I will be better prepared. ✱



Emergency Risk Management Group, [www.horse-safety.com](http://www.horse-safety.com).

The **Equine Risk Management Group ([www.horse-safety.com](http://www.horse-safety.com))**, founded by professional horsemen, provides the horse industry with an excellent resource for safety-risk management in all phases of equestrian activities. They suggest a proactive program of fire prevention, including weekly self-inspections of all electrical equipment used in the barn AND an emergency evacuation plan. They stress that such plans make a difference of everyone knows what to do in case of an emergency. Barn fires can happen to all barns and stables when least expected so an emergency plan can mean the difference between life and death.

### 1. Have an Escape Plan

- An escape plan should be established, displayed and given to all staff and persons using your barn and stables, including boarders.
- The escape plan should diagram routes of escape around the structures.
- Fire exit signs need to be posted at all appropriate safe exits of the facility.
- Determine a paddock and/or pasture large enough and far enough away from the barn and stables to hold horses if a fire occurs.
- Practice the escape plan route. Include all staff and stable boarders in an actual "walk-through" with the plan.

### 2. Fire Drill

- Annually practice a fire drill. If you have changes in personnel and boarders, perform drills on an as-needed basis.
- Work with your local fire department to figure out a response time and learn how to handle horses in a fire situation.
- Establish how long you have to remove horses safely from the fire.
- Take into consideration that **horses will go back into a burning barn even after being led to safety.** Make sure to close individual stall doors so the horses don't go back in as they might instinctively. Get horses out of the barn and into a safe, fenced holding area as carefully and quickly as possible.

### 3. Train Firefighters

- Annually schedule for a visit from the fire department to check for fire safety hazards. Firefighters would much rather visit the premises BEFORE a fire outbreak.
- Give the firefighters a layout of the barn and have them perform a full fire safety inspection.
- Train the firefighters on the process of handling horses and allow them to lead the horses in and out of the stalls.
- Training the firefighters on handling horses will not only save the lives of the animals but the lives of the firefighters.
- Make sure the firefighters know where to find halters and leads and how to put them on the horses.

### 4. Horse Training

- Assess which horses will be a problem should a fire occur.
- Be aware that the horses may be frightened by the visual and audio threats of firefighters, flashing lights, sirens, hoses, extra lighting, etc.
- Practice the escape plan with horses so they will know what to expect should smoke or dangerous situations arise. In some cases, artificial smoke could be used to simulate a fire, to train horses, farm personnel and firefighters about the risk of handling horses in these conditions.

### 5. Equipment

- Mount fire extinguishers every 50 feet and have them inspected and tagged annually.
- Use at least a 10-lb size extinguisher rated ABC or that recommended by your local fire officials.
- Always have halters, ropes and lead shanks near every stall.
- Have designated areas to keep flashlights, mobile phones, fire blankets and first-aid kits.

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