

Complementary and Alternative Medicine

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Introduction

Complementary and alternative medicine has been practiced in various forms for thousands of years, originating in ancient Asian and Indian cultures. Through trans-oceanic exploration and colonization, non-traditional medical treatments eventually spread to Western civilizations. Many of these therapies were, and still are, practiced by folk healers. The use of complementary and alternative medicine therapies has become an emerging niche in the fields of human and veterinary medicine in the past 30 years. In 1982 Carvel G Tiekert, DVM, established the American Holistic Veterinary Medical Association. According to the association's charter, holistic veterinary medicine combines conventional and complementary (or alternative) modalities of treatment. Diagnoses and treatments are based on physical examination, behavioral history, medical and dietary history, and consideration of the animal's environment (including diet, emotional stresses, etc.).

Complementary and alternative medicine therapies are considered to be so important in human medicine that one branch of the National Institutes of Health – the National Center for Complementary and Alternative Medicine (NCCAM) – was founded specifically to study them. The National Cancer Institute maintains an Office of Cancer Complementary and Alternative Medicine.

The Basics of Complementary and Alternative Medicine

The NCCAM defines complementary and alternative medicine as a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine (also known as allopathic medicine). Complementary medicine, by definition, is used in conjunction with conventional medicine, while alternative medicine is used instead of conventional medicine. Complementary and alternative medicine can be divided into four general categories: mind-body medicine, biologically based practices, manipulative and body-based practices, and energy medicine.

Mind-Body Medicine

The first category, mind-body medicine, includes prayer, mental healing, and therapies that utilize creative outlets such as art, music, or dance. Oriental practices, such as tai chi, qi gong, meditation, and relaxation techniques are included in this category as well. This category has little practical

relevance to the veterinary profession, although there is some research that supports the use of music to ease canine anxiety. One such study was conducted in Belfast, Ireland by Dr. Deborah Wells (Wells, et. al., 2002), a psychologist and animal behaviorist. The study focused on the influence of five types of auditory stimulation: human conversation, classical music, heavy metal music, pop music, and a silent control (i.e., no music). Results revealed that classical music had a calming effect on dogs in animal shelters when compared to the other types of auditory stimuli.

One of us (JR) has successfully used classical music therapy, in his practice, for dogs with obvious anxiety disorders, including dogs that are severely reactive to loud, sudden sounds (Fourth of July fireworks, for example). It is known that dogs have a considerably larger frequency range and increased perception of sounds compared to humans. Exposing dogs to regular, rhythmic, and complex sounds (symphonies, for example) at the same time that they are being rewarded and comforted, allows dogs, over time, to associate the music with positive and relaxing experiences. Playing music at times when dogs are experiencing stress (Fourth of July fireworks!) will relax them and also dilute perception of any sudden or unexpected background sounds. This type of therapy is inexpensive and allows owners alternatives to the uses of sedative, tranquilizers, and antidepressants for calming anxious dogs.

A web search reveals a number of companies that make and market CDs specifically for dogs that experience anxiety problems. Here is one such company's website: www.throughadogsear.com/shelter-program/

Biologically Based Practices

Herbal medicine (also known as phytomedicine) has been used for thousands of years in the prevention and treatment of human disease. In recent years, it has become accepted as standard allopathic therapy to make use of substances found in flowers, roots, berries, and herbs (*Figure 1*). Many potent and effective therapies, in common use, were derived from plants. For example, corticosteroids were derived from the molecule diosgenin, originally isolated from wild yams (*Dioscorea villosa*). The cancer chemotherapy agent, vincristine, is derived from compounds found in periwinkles. Aspirin, a non-steroidal drug, is a salicylate related to compounds found in willow tree bark and cambium. Quinine, a preventative for human malaria, was also derived from Cinchona tree bark (Chevallier, 1996). Antibiotics, such as penicillin and streptomycin, came from molds and fungi. The drug digitalis, from purple foxglove (*Digitalis purpurea*), is a mainstay of therapy in dogs and people for treatment of heart failure.

It should be pretty apparent that substances derived from plants can also be extremely toxic. A small dose of aspirin may lower the body temperature in a person with a fever or help prevent blood clots from forming by keeping blood platelets from becoming sticky. Two or three times that small dose may cause heartburn, stomach ulceration, and bleeding tendencies. We pointed out (above) that some very common and useful antibiotics are derived from growing molds. The growth of other molds, like the fungus *Aspergillus flavus* on peanuts and grains, can produce mycotoxins which are capable of causing cancer (aflatoxin B) or destroying brain tissue (Fusarium toxin – fumonisin). Methylxanthines found in chocolate (derived from the cocoa plant – *Theobroma cacao*) are very toxic, even in small amounts for dogs. Dog owners should understand that the metabolism of dogs and people are very different. Herbal remedies that may be relatively safe for people, may not be safe for dogs. The doses of drugs used to treat disease in humans and dogs have been established through scientific studies. The doses of herbs for treatment of disease in dogs have not been well-studied.

According to the World Health Organization (WHO), in some Asian and African countries, 80% of the population still depends on traditional medicine for primary health care. The WHO also notes that herbal medicine is the most popular worldwide form of complementary and alternative medicine. Herbalists seek to treat a variety of human conditions, including arthritis, depressed immunity, Alzheimer's, asthma, depression, fatigue, skin problems, and a host of others.

Three common herbal remedies used in both humans and animals are St. John's wort, ginseng, and echinacea. St. John's wort (*Hypericum perforatum*) is used in humans as an analgesic, anesthetic and an anti-inflammatory agent. In dogs, it has been used to treat obsessive problems such as lick granulomas, aggression, barking, jumping, scratching, chewing and separation anxiety. Its use is contraindicated with antidepressant drugs.

Ginseng root, from the plant *Panax ginseng*, is native to North America and China. In Chinese, the word ginseng means "the essence of man." This is because it has been used to treat a wide variety of ailments. In humans, Ginseng is administered to treat fatigue and headaches, stimulate the appetite, and to increase both vitality and immune function (Kim et al, 1990), especially in older individuals. It is marketed to treat many of the same conditions in both dogs and cats.

Ginseng, when chemically analyzed, is shown to contain over 35 distinct chemical compounds (ginsenosides, triterpenoid saponins, panaxans, sesquiterpenes) that may have medicinal actions for humans (Chevallier, 1996; Blaylock, 2003). Studies have shown that ginseng will inhibit human tumor cell growth in tissue culture (Shinkai, et. al., 1996). Whether these findings can be extrapolated to dogs would require further studies.

Echinacea is a wildflower (*Echinacea angustifolia* and *E. purpurea*) native to the central United States. Its main uses are to improve the function of the human immune



Figure 1 - Herbal medicine makes use of substances present in specific flowers, roots, berries, and herbs



Figure 2 - Chiropractic can be used in the diagnosis and treatment of specific conditions involving the back, neck, and extremities, as well as pain associated with muscle spasms and certain injuries.

system, especially against the common cold and influenza. It can also be used to help wounds heal faster and decrease inflammation. In dogs, echinacea has been used to bolster the immune system, aid in the treatment of viral infections, and prevent cancer.

And now, a final word of caution and warning about herbal remedies and phytotherapy for your Westie. While plants and herbs have been used for literally thousands of years as folk remedies in humans, much less is known about the effects of plant-based compounds as therapies for disease in dogs. Before beginning any herbal remedy with your pet, always consult your veterinarian first. When in doubt, leave them out - as therapy for sick dogs.

Manipulative and Body-Based Practices

The use of chiropractic/osteopathic manipulation and massage are well-known forms of manipulative and body-based complementary and alternative medicine therapies. Osteopathic manipulation is used by osteopathic physicians, combined with physical therapy, in order to shorten patient recovery time. Reflexology, Tui Na, rolfing, the Bowen technique, Trager bodywork, and many other techniques are also included in this category. Most of these therapies are impractical for veterinarians and their patients, but there is a growing chiropractic movement within the veterinary field.

Formal animal chiropractic education began in 1989 with the formation of the American Veterinary Chiropractic Association (AVCA). The first courses were taught by the founder, Sharon Willoughby, DVM, DC. She began the

practice of teaching Doctors of Veterinary Medicine and Doctors of Chiropractic side by side. Doctors of Veterinary Medicine receive a foundation of chiropractic theory and technique, and Doctors of Chiropractic learn common animal diseases, zoonotic diseases, comparative anatomy, and animal handling techniques.

The AVCA has a multi-tiered mission: to provide a professional membership group, to promote animal chiropractic, and provide certification for doctors who have completed animal chiropractic training. The AVCA also seeks to provide the public with access to doctors trained in animal chiropractic.

Animal chiropractors treat many different animals and a wide array of problems. Cats, dogs and horses are the most common patients, but chiropractic medicine is also used to treat zoo animals, wildlife, and exotics. A chiropractic exam includes evaluation of the patient's history (including prior radiographic results), a full neurological exam, and finally the adjustment of vertebral joints, extremity joints, and cranial sutures (*Figure 2*). Animal chiropractic has been used in the treatment of neck, back and extremity pain, muscle spasms, injuries, internal medicine disorders, and temporomandibular joint syndrome.

To find out more information or to locate an AVCA certified veterinarian, review the following website:
www.AnimalChiropractic.org

Most Westie owners know that their dog enjoys being petted and held. Some dogs seem to particularly enjoy massage, if they are acclimated to it and rewarded for 'participation.'

Dogs that have suffered injuries may be painful and resentful of manipulation and massage, but may benefit from the gradual introduction of common-sense physical therapies, including gentle massage and range-of-motion exercise, warm and cool compresses and even hydrotherapy. Most veterinarians receive little, if any, training in physical therapy and rehabilitation of their patients. However, they may work with you and local physiotherapists to custom design programs for dogs with injuries that would be helped by therapy. This should be discussed with your veterinarian.

Energy Medicine

Energy medicine, perhaps the least studied and least understood of all the complementary and alternative medicine therapies, involves manipulation of the energy fields that purportedly surround living beings and the use of electromagnetic fields for therapeutic outcomes. Energy medicine includes Reiki, Therapeutic Touch therapy, light and sound therapy, qi gong, homeopathy, acupuncture, and a host of other treatments. Although we have known some pet owners to practice Reiki and Therapeutic Touch therapy, the most common energy medicine techniques practiced by holistic veterinarians (and endorsed by the American Holistic Veterinary Medical Association) is homeopathy and acupuncture.

Homeopathic remedies date back to the time of Hippocrates, and include the use of plants, minerals, drugs, viruses, bacteria and/or animal substances to treat illnesses. Homeopathy involves treating an ill patient using a substance that can produce, in a healthy individual, symptoms similar to those of the illness. This substance is created through serial dilution of the normally toxic agent. For example, snake venom, poison ivy and opium have been used to make homeopathic remedies, but in high enough concentrations can cause serious problems. Homeopathy has been used to treat a wide range of problems in both humans and animals, but has not been studied scientifically to prove effectiveness or safety.

Acupuncture, by definition, is the Chinese practice of piercing specific areas of the body along peripheral nerves with fine needles to relieve pain, induce surgical anesthesia, and for therapeutic purposes (Dorland's Pocket Medical Dictionary, 25th ed. W. B. Saunders Co., 1995). Acupuncture dates back thousands of years and is considered part of traditional Chinese medicine. According to traditional Chinese medical theory, the qi (life force) flows through various meridians (channels) throughout the body. When this flow is disrupted, it manifests as pain, and other ailments. In the United States there are currently more than 50 schools



Figure 3 - The primary goal of veterinary acupuncture is to strengthen the dog's immune system.

and colleges of human acupuncture and Oriental medicine. Many offer masters degree programs and are accredited by or have been granted candidacy status by the Accreditation Commission for Acupuncture and Oriental Medicine. Here is a website for finding out more about the acupuncture schools in the United States and the programs they offer: www.acupunctureschools.com

The National Cancer Institute website for complementary and alternative medicine (www.cancer.gov/about-cancer/treatment/cam) provides a wonderful overview of the use of acupuncture as a treatment for individuals (humans) with cancer or cancer-related side-effects. Research supports acupuncture as an effective complementary therapy to reduce nausea and vomiting after surgery and chemotherapy, as well as an effective pain inhibitor. There are many studies currently underway involving acupuncture and its ability to relieve lower back pain, breast cancer, limb pain, menopausal symptoms, nausea, dry eye, and the list goes on, and on. One of us (JR) has undergone acupuncture treatment of painful lower back spasms (due to disc prolapse) and will personally attest to its effectiveness!

A full list of current clinical trials involving human acupuncture can be found at: www.clinicaltrials.gov/search/open/intervention=acupuncture

There are a growing number of veterinary acupuncturists (*Figure 3*). According to the AVHMA, the main goal of veterinary acupuncture is currently to strengthen the body's immune system. The etiology of acupuncture's therapeutic effects, however, is not well understood. As you might imagine, dogs that are going to be acupuncture subjects may not understand what you and the acupuncturist are trying to accomplish – or how you are doing it. It takes little imagination to realize that your Westie might not think it is such a good idea to get stuck with one or more long needles and then to hold still for the therapy to work (5-30 minutes). It is probably a very good idea, if you are considering acupuncture therapy for some painful condition, to discuss this with your veterinarian and the veterinary acupuncturist. It may be worthwhile to get the names of clients who have had dogs treated with acupuncture and to contact them to see how the therapy worked. Remember: dogs don't seem to experience a "placebo effect" – there is no amount of talk that will convince the dog it is going to feel better!

To contact and/or locate a holistic veterinarian who practices homeopathy or acupuncture, check out the websites listed at the end of this chapter.

A Personal View of Complementary and Alternative Medicine – John Robertson

Imagine for a minute that you are sick. Perhaps suffering from arthritis and the ravages of age on our bones and muscles. How do you view your disease and suffering? The result of normal wear and tear? Perhaps the result of injuries sustained many years ago? Bad diet? Not enough vitamins? Poor posture, a bad mattress or old shoes? It is very hard to say if any or all of these factors are the cause of your current disease, but you know you want some relief. What are some things that might be effective?

- Anti-inflammatory drugs (cortisone, non-steroidal drugs like aspirin) to decrease joint inflammation and potentially slow the progression of disease
- Anti-inflammatory drugs to decrease pain, allowing more normal mobility and better quality of life, with normal daily activities
- Application of topical heat to sore joints and muscles, with or without application of heating and cooling topical gels and ointments
- Vitamin and mineral supplements, including calcium and magnesium, to help rebuild and maintain bone

- Vitamin supplements, including chondroitin-glucosamine, for helping the healing process
- A balanced program of exercise, perhaps including exercise in water, and stretching to gain/regain mobility, decrease stiffness, and increase a feeling of well-being
- New mattress and new shoes
- Better diet, coupled with sensible weight loss (if overweight)
- Rest in a comfortable place when tired
- Avoid repetitive injury than makes the arthritis worse

If you did all the things (ten of them) on the list, do you think you would feel better, especially if you did them over and over? At least 80% of the items on the list (the bottom 8 items) are not a pill prescribed by your doctor. Each, however, would be complementary to the occasional use of drugs (steroids and non-steroidal anti-inflammatory drugs). Complementary therapy provides a system of holistic healing, optimizing diet, exercise, and judicious use of drugs that have been proven to be effective. This would work for you and for your dog. And (I hope) you would accept that neither strict medical therapy (the drugs alone) nor the combination of medical and complementary therapies are going to cure your arthritis.

Suppose, now, that your dog has developed a serious cancer, such as malignant lymphoma. Malignant lymphoma is one of the most treatable forms of cancer in dogs. With multiagent chemotherapy, many (over 50%) dogs, even those with moderately to markedly advanced cases, may live 1-2 years. The drugs, however, do not cure the cancer, and virtually all dogs diagnosed with malignant lymphoma will succumb to the disease or complications of the disease. We know this from studying the outcomes of treatment of thousands of dogs that have developed malignant lymphoma. In general, about 10% of dogs getting chemotherapy (the treatment of choice for malignant lymphoma) will develop treatable side effects during therapy, including vomiting and diarrhea. Dogs with moderately to markedly advanced malignant lymphoma that do not receive multi-agent chemotherapy rarely live more than a few months.

What do you do? Treat? Not treat? Hard choices. Life and death choices. Some owners, concerned with the potential suffering that their dog might have, decide on humane euthanasia, and this is both a personal and rationale choice. Some other owners might decide to go ahead with chemotherapy, realizing it is expensive (perhaps \$3,000 to \$6,000), and that they may prolong life, good quality life, for up to a year or two. And that your dog is going to very likely die as a result of the cancer. For most owners, making this decision is very difficult and there is almost always sadness

and frustration for your canine friend and companion having an incurable disease. But, there are two rational choices – euthanize or treat.

In trying circumstances, some owners may reject rational choices, feeling that traditional allopathic and complementary medicine has failed them and their pet. When they ask the veterinarian to cure the incurable and treat the untreatable, they indicate that current medical and surgical practice has failed them. They may wish to avoid well-documented and supportive therapies in favor of treatments whose value, effectiveness, and safety have not been established. While it is quite normal to feel frustrated that our pets get ill and eventually die, it is not rational to reject proven therapies for unproven alternative therapies. I've lost eight dogs and as many cats to disease. As much as I hoped I could fix them, in the end I could not. There were no magic medicines, no secret herbs, and no intervention that would keep them with me. I've reflected on my limitations and failings quite a bit. In the end, I always come back to the same answer. As pet

owners, as veterinarians, as scientists, we owe our pets the best possible life we can provide for them and we need to constantly work harder to make the years they have with us quality time, free of disease. We need to understand disease and develop better treatments, not harbor resentment over the limitations we now experience. In the end, it's all about understanding more and doing more, not rejecting treatments that aren't perfect or foolproof.

In summary...

There are many forms of complementary and alternative medicine that have a place with common and traditional medical and surgical therapies in treating disease in dogs. There is a lot of information available (see below) describing some tested and helpful therapies. Westie owners should be cautious about subjecting their dogs to unproven therapies and should reject stuff that promises unrealistic results (like curing or preventing cancer). Do not use toxic and potentially deadly plant/herb products.

Relevant References

- Biddis, KJ, Homoeopathy in Veterinary Practice. Boston: C.W. Daniel Company, Limited, 1987.
- Blaylock, R, Natural Strategies for Cancer Patients, Kensington Publishing, NY, 2003
- Chevallier, A, The Encyclopedia of Medicinal Plants, Dorling Kindersley Ltd. London, 1996
- Day, CE, The Homoeopathic Treatment of Small Animals. Boston: C.W. Daniel Company, Limited, 1990.
- Devi, L, Flower Essences for Animals : Remedies for Helping the Pets You Love. Grand Rapids: Beyond Words, Incorporated, 2000.
- Goldstein, R, Broadfoot, PJ, Palmquist, R Integrating Complementary Medicine into Veterinary Practice. Malden: Wiley-Blackwell, 2008.
- Grosjean, N, Veterinary Aromatherapy. Boston: C.W. Daniel Company, Limited, 1994.
- Holloway, S, Animal Healing and Vibrational Medicine. Grand Rapids: Blue Dolphin, Incorporated, 2001.
- Kim, JY, Germolec, DR, Luster, MI, "Panax ginseng as a potent immunomodulator: studies in mice," Immunopharm Immunotox 12: 257-276, 1990
- Ramey, DW, Complementary and Alternative Veterinary Medicine Considered. Iowa State Press, 2004.
- Shinkai, K, Akedo, H, et. al., "Inhibition of in vitro tumor cell invasion by ginsenoside Rg3," Japan J Cancer Res 87:357-362, 1996
- Shojai, AD, New choices in natural healing for dogs & cats : over 1,000 at-home remedies for your pet's problems. Emmaus, Pa.: Rodale P, 1999.
- Stein, D, Natural Remedy Book for Dogs and Cats. New York: Crossing P, 1994.
- Tilford, GL, Wulff-Tilford, M, All You Ever Wanted to Know about Herbs for Pets. New York: BowTie P, 1999.
- Wells, DL, Graham, L, Hepper, PG "The Influence of Auditory Stimulation on the Behavior of Dogs Housed in a Rescue Shelter." Animal Welfare 11: 385-93, 2002
- Wynn, SG, Fougere, BJ, Veterinary Herbal Medicine. St. Louis: Mosby, 2006.

Related Websites

- National Center for Complementary and Alternative Medicine: <http://www.nccam.nih.gov/>
- Alt Vet Med, Complementary and Alternative Veterinary Medicine: <http://www.altvetmed.org/>
- Academy of Veterinary Homeopathy: <http://www.theAVH.org>
- American Academy of Veterinary Acupuncture: <http://www.AAVA.org>
- Veterinary Botanical Medicine Association: <http://www.VBMA.org>
- British Association of Veterinary Homeopathic Surgeons: <http://www.bahvs.com/>
- World Health Organization: <http://www.who.int/en/>

Links to Practitioners of Complementary and Alternative Medicine

- <http://ahvma.org/>
- <http://www.ivas.org/>
- <http://www.holisticvetconsult.com/>
- <http://www.holisticvetpetcare.com/>
- <http://www.petsynergy.com/>
- <http://www.AnimalChiropractic.org>