

# Medical Causes and Treatment of Behavior, Temperament, and Training Problems



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**T**rainers, as first line of defense in tackling behavior problems in dogs, should have some appreciation and knowledge of medical problems that may impact behavior. Certain medical issues contribute to behavior problems while others are actually instrumental in causing them. The fact that a medical problem may underlie a behavior problem is something that trainers should always bear in mind and certain factors can clue you in that health matters may be involved. These factors include obvious problems with the dog's physical condition (overweight, underweight, excessive shedding, alterations in thirst or appetite, and so on). Also arousing suspicion are behavior problems that occur unusually early in life, especially if the dog is the runt of the litter, any problems occurring seemingly out of the blue with no obvious environmental cause, any extreme or dysfunctional behaviors, and any behavior problems arising for the first time later in life. Medical problems can lead to enhanced aggression, anxiety, phobias, compulsive behavior, house soiling, and altered thought processes.

## *Hypothyroidism*

The full blown condition of hypothyroidism is quite easy to recognize. Affected dogs tend to be of certain breeds (Golden Retrievers rank #1) though any dog can be affected. Cardinal signs include weight gain, lethargy, and hair loss. It is jokingly said in veterinary circles that this condition is so easy to diagnose that it can be spotted from the top of a double-decker bus or a telescope turned the wrong way around. That said no vet worth his or her salt would make the diagnosis without running a blood test to check the levels of thyroid hormones. But full blown hypothyroidism is not the issue here. All vets are aware of the two extremes normal ("euthyroid") and hypothyroid, but there may also be an in-between state of "borderline" hypothyroidism, as occurs in people. Some of us believe there is such a state variously known as sub-clinical or sub-threshold hypothyroidism, in which clinical signs of hypothyroidism are subtle at best, perhaps only a little premature graying of the muzzle or year-round shedding, with thyroid hormone levels in the low/normal range or only slightly below normal. Believers in this limbo state of borderline hypothyroidism believe that it contributes to anxiety and aggression and perhaps some other behavior problems. Some more signs of this condition include a tendency to gain weight (which the owner may have taken

steps to address), dry skin, allergies, susceptibility to infection, and heat seeking behavior (affected dogs are very susceptible to the cold). If a few of these signs exist in a dog that is displaying anxiety or aggression, it is worth advising the owner to go and see a veterinarian to have the dog's thyroid levels checked. Bear in mind that not all vets are aware of the sub-threshold diagnosis and some are skeptical about it. However, if the vet does accept the possibility and agrees to trial treatment, a period of four to six weeks of hormone replacement therapy at standard levels is sufficient to see if things improve.

## *Behavior Related Seizures*

These events also known as partial seizures or limbic epilepsy express themselves in many different ways. Depending on the precise region of the brain involved, aggression, extreme fear, appetitive or predatory behavior may be expressed. Consciousness is not lost during this type of seizure though the dog's affect may be profoundly altered. Generic signs of a seizural disturbance of this nature are bouts of aberrant behavior preceded by a mood change and followed by reduced responsiveness bordering on depression. The behavior itself can be quite bizarre and dysfunctional and is sometimes associated with autonomic nervous system signs such as dilated pupils, drooping eyelids, salivation, or urination. Probably the best known form that behavioral seizures take is that of sudden uncontrolled aggression for trivial or no reason. This is termed "rage" and affects seizure-prone breeds like, for example, cocker and springer spaniels. Frequently, owners are the subjects of aggressive attacks, which, unlike typical owner-directed aggression are sporadic in occurrence and typically last longer than a few seconds. Diagnosis is not easy but is based on the extreme irrational nature of the aggression, its sporadic incidence, and other circumstantial evidence. Confirmation may be made at veterinary centers by electroencephalography (EEG) but not many veterinary centers are equipped to perform this test. The alternative is to have the dog's veterinarian agree to treat the dog with a short course of an anti-convulsant drug, like phenobarbital, to see if this improves the situation. Owners must be informed of safety issues involved and advised of what must be a guarded prognosis. Even one rage attack per year can be one too many.

Other possible manifestations of dogs with seizures include fly snapping, tail chasing, abnormal ingestive behavior, and paroxysmal fear. Look alike conditions that must be ruled out before a diagnosis of partial seizure can be made include attention-seeking behavior, canine ➤

compulsive behavior, and an assortment of other medical conditions. For example, a dog that is circling may have a brain tumor; a dog displaying abnormal ingestive behaviors may have anemia or a gastrointestinal problem. It's best to involve the local veterinarian right from the get-go to rule out any or all of these medical causes of aberrant behavior before embarking on a retraining program.

### *Canine Cognitive Dysfunction*

Only relatively recently recognized, canine cognitive dysfunction is the canine equivalent of Alzheimer's disease in people and the signs are quite similar too. Affected dogs tend to be at least ten years old and display signs such as disorientation, altered social interactions, sleep disturbances and/or a breakdown of housetraining. Disorientation takes the form of getting stuck behind furniture, standing at the wrong side of the door to go out, vacuous staring, and failure to respond to verbal cues or name. Altered interactions with family members includes soliciting less attention, not wanting to be petted, and less enthusiastic greeting behavior. Sleep abnormalities involve sleeping more in a 24-hour period and sleeping less and more fitfully at night. A breakdown of housetraining where there is no medical explanation is a cardinal sign of this condition and is, all too often, the *straw that breaks the camel's back* of the owner's patience. A customized form is available on the Pfizer Animal Health website which allows owners to check boxes and get a rough idea whether their dog is heading in the direction of canine cognitive dysfunction or not. It is especially helpful to fill in the checklist more than once and note increasing impairment, though sometimes the condition is evident right from the start. Canine cognitive dysfunction is not simply normal aging but is a pathological condition in which plaques of a protein, beta amyloid, are deposited between nerve cells in the brain. This is what causes the mental perturbation and the degree of pathological change (post mortem) correlates well with the behavioral change. The deposition of amyloid plaque is now thought to be instrumental in human Alzheimer's disease also.

The changes that take place in the brain of dogs with canine cognitive dysfunction are many but include decreased release of a neurotransmitter called dopamine. Dopamine is a vital neurotransmitter that essentially connects thought with action. Too little dopamine causes Parkinson's disease in people and is probably responsible for the sluggish behavior of dogs with canine cognitive dysfunction. Fortunately, a treatment is now available in the form of a drug called Anipryl® which works by preventing the breakdown of dopamine, vastly enhancing its action. The results of treatment can be quite spectacular and can buy affected dogs several months or more of quality existence. Other things that can be done to help combat aging changes are to switch to a prescription diet, Hill's b/d (available only from veterinarians) and suggest to the veterinarian that (s)he considers other innovative strategies to combat cognitive dysfunction such as the addition of supplements like acetyl L-carnitine, coenzyme Q10, or even Resveratrol. Melatonin given at night will

also help an old-timer sleep through and, in addition, has antioxidant effects which some think prolong active life.

### *Nocturnal Separation Anxiety*

This condition is easy to confuse with canine cognitive dysfunction because nighttime anxiety attacks are a feature of both conditions. However, dogs with nocturnal separation anxiety exhibit no signs of cognitive decline, quite the reverse they appear anxious and hyper vigilant and, temperamentally, are somewhat on the sensitive side. Frequently, dogs with nocturnal separation anxiety have shown some mild separation anxiety earlier in their lives but suddenly, on reaching the ripe old age of ten, twelve, or fourteen, the wheels fall off and the dog can no longer handle being alone at night when deprived of the awake attention of his owners. In all cases of this pathetic problem that I have encountered, once cognitive dysfunction and noise phobia have been ruled out, the cause has been some painful medical condition that has not always been obvious on initial presentation. Clearly this is a situation where the vet should be involved immediately to try and determine the underlying cause of the anxiety. Causes I have found in the past include brain tumor, bone tumor, bladder tumor, eye tumor, and severe arthritis of the spine. Note that "tumor," a.k.a. cancer, figures prominently in the list of causes. So common is nocturnal anxiety in people with cancer that there is even an outpatient handout on what to expect and how to deal with it. So it is with dogs. Their pain seems much worse at night when there is nothing else to distract them from it, so they become exceptionally needy. The obvious solution is for the veterinarian to find and remove the offending cause of the problem but this is not always possible. Sometimes palliative treatment with medications to reduce pain and anxiety is all that can be done while owners prepare themselves for a difficult decision.

### *Rapid Eye Movement (REM) Behavior Disorder*

Rarely dogs present with violent movement disorder accompanied by vocalization and/or perambulation and wanton aggression arising midst a deep sleep, in fact the REM phase of sleep, which is the dreaming phase. One such dog I saw would wake from a deep sleep, barking and growling, sometimes with his eyes shut attacking his own blanket and shaking it in a predatory way or he would get up and uncharacteristically go after his owners or the other dog in the house. Within minutes the problem had resolved and the dog was its normal contrite self. There are only two possible explanations for this type of behavior disorder, either REM sleep disorder or a partial seizure (which we have dealt with previously). There is no point in trying to train this out of a dog as it is a medical problem. Veterinary treatment ranges from the use of a Valium®-type drug, Klonopin, which seems to have specific anti-REM behavior disorder effects, or anti-depressants. Treatment is not always 100% effective but can substantially reduce the frequency and intensity of these troubling nocturnal attacks.

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### *Attention-deficit Hyperactivity Disorder (ADHD)*

Opinions vary about whether this condition actually exists in dogs. Some behaviorists believe it is really quite common, as it is in children, but others do not believe in it at all. I believe it does occur but that it is rare. It is common to misdiagnose ADHD in a dog that is reactive or just plain overactive for genetic or managemental reasons. True ADD is a veterinary diagnosis made by observing a paradoxical (calming) effect to the administration of stimulants like Ritalin®. The test is easily done in hospital where the dog is observed for a couple of hours after the administration of oral Ritalin®. A calming effect plus reduction of the heart rate and respiratory rate confirms the diagnosis. Normal (non ADD) dogs become agitated and somewhat hyper when given Ritalin®. One dog I heard of could be barely be restrained during a walk and ended up pulling his owner's pants down. That was a first!

### *Narcolepsy*

Dogs with narcolepsy fall asleep at the drop of a hat, more specifically, at the sight of food or exposure to some exciting event or opportunity. Common in Dobermans, Poodles, Labradors, and Dachshunds, it is caused by a single recessive gene (hypocretin-receptive 2) which prevents molecules called hypocretins from facilitating the wakeful state. Treatment is with either Ritalin®, Provigil (a drug that has been shown to reduce excessive daytime sleepiness), or anti-depressants.

### *Liver Shunts*

Certain breeds, including the miniature schnauzer, Yorkshire terrier, Irish wolfhound, Cairn, Maltese, Australian cattle dog, retrievers, and old English sheepdog are predisposed to congenital vascular shunts that cause blood coming from the intestines to bypass the liver instead of going through it. Consequently, unprocessed toxins, in particular, ammonia, reach the general circulation unmodified causing a variety of behavioral and physical signs ranging from inappetence to disorientation, circling, pacing, and staring. Some dogs become considerably worse a short time after eating a meal, particularly one high in protein. There is no way to train a dog out of any of these behaviors so it is important for trainers to suspect this curveball diagnosis because of the odd assortment of clinical signs and immediately to steer the dog on to the local vet for treatment. Sometimes shunts can be treated surgically or managed medically but other times they are overwhelming and will eventually lead to the demise of the affected dog.

### *Lethal Acrodermatitis*

This rather specific disorder appears only in bull terriers. It is called lethal because affected dogs usually die young if not put to sleep first. The term *acrodermatitis* refers to inflammation of the lower extremities of the limbs, in particular the paws, which become secondarily affected with bacteria and fungi. Signs of the full blown condition are really unmistakable that include stunted growth and aggression

even in very young pups. Along with the skin problems, affected dogs also have difficulty in swallowing and often get aspiration pneumonia. The message to trainers here is that if you are presented with an undersized, aggressive bull terrier pup in a puppy training class, it is probably a good idea to turn it over to a local vet immediately for a thorough physical examination and blood tests.

### *Lissencephaly*

This is a rare condition in dogs that, to my knowledge, has only been reported in Lhasa Apso's. The condition is one in which the normal vermiform corrugation on the surface of the brain are absent leaving it with a smooth, unwrinkled surface. This serious neurological problem causes affected dogs learning difficulties and visual deficits that owners sometimes don't recognize. It is often the fact that affected dogs are almost impossible to housetrain that first brings them to the attention of a canine behavioral professional or vet.

### *Other Medical Causes of Behavior Problems*

The list of medical problems leading to the behavioral abnormalities compiled above is not comprehensive. Any painful condition can affect behavior in a variety of ways, including increased irritability and aggression as well as the nighttime anxiety referred to earlier. Certain infections, most notably rabies, also affect behavior in a variety of ways and should be considered when a dog's behavior is quite different from the run-of-the-mill cases that we all see on a daily basis and is extreme or dysfunctional. Finally brain tumors, which occur most commonly in older dogs, can cause profound personality changes and a plethora of behavior disorders. It is almost a rule of thumb that if you see a behavior problem arising for the first time mid to late life in a dog that *some medical problem* underlies it.

### *Conclusion*

While it is not a trainer's job to be fluent in medical matters and it is not legal for them to make diagnoses or institute medical treatments, it is nevertheless imperative for them to realize that not everything that appears behavioral necessarily is purely behavioral. Keeping an eye out for things that are out of the ordinary - extreme, unexpected, bout-like or just plain strange behavior - makes a valuable contribution to overall behavioral and health care management of the pet. As I said before, trainers are often in the front line when it comes to recognizing oddities in behavior and it is vital for them to know when to refer things to their medical colleagues.

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