

Cognitive Dysfunction Syndrome & Senior Dog Behavior History Form

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General Information:

Dogs in their twilight years present a true diagnostic challenge. Not only are senior dogs more likely to develop health problems, but they are inclined to develop multiple health problems and greater variability in their responses to stress, drugs and environmental factors. A very fine line exists between "normal" and "abnormal" for a particular age of dog.

In general the definition of Cognitive Dysfunction Syndrome (CDS) is geriatric onset behavioral changes (usually gradual) which are not entirely attributable to (other) general medical conditions. Historically, geriatric behavior problems have fallen into diagnostic categories similar to those in younger dogs. Based on two studies, those include: separation anxiety; breakdown of housetraining; aggression toward dogs; aggression toward people or dogs; excessive vocalization; phobia; and, night time waking where often no motivation is noted.

Let's go now to the most important part of the history — ensuring that the pet does have the clinical signs consistent with CDS. Very seldom will a dog have an observable CDS problem during a visit to the veterinary hospital. Veterinarians must know all of the details about:

- what the problem is;
- when it started;
- its trend; and,
- any secondary problems.

To get this depth of information goes beyond simply asking how the dog is doing. You, as Owners, need to be tell your vet about behavioral problems that have arisen and/or need changing. Without your help, the signs of CDS may be passed over because you mistakenly assume behavioral changes associated with CDS are "normal aging," and not signs of a disease or condition. The history is seldom volunteered in an appointment. As owners, you need to carefully record what clinical signs are present and this is done best by the behavior history form below.

Please print this form out, keep your records on it and give it to your vet when you visit next. An addition you may want to make is to rate each occurrence of the abnormal behavior as 1 thru 10, with 1 being the very mild and 10 being very severe. Write this on the form and explain it to your vet. The Senior Dog Behavior History Form categorizes clinical signs into:

- Disorientation (confusion, wandering aimlessly, going to wrong side of doors; appearing to forget previously learned tasks getting "stuck" in corners and behind furniture);
- Activity/sleep behavior (Dogs often sleep more during the day, and much more deeply; they often are awake at times they "should" be sleeping, e.g. during the night. They may act restless and pace or wander inappropriately - hence we often state that they have an increase in purposeless activity, and a decrease in purposeful activity);
- Housetraining (inappropriate elimination in dogs previously well housetrained, or increased accidents in dogs that had occasional ones. These dogs are often disoriented and will, for example, signal to go outdoors, stand in the yard for a while and re-enter the house to urinate, often right in front of the owners); and,
- Interaction with family members (walking away from being petted, greeting owners less (or not at all) at the door; no longer initiating play or petting).

Under each subheading it lists typical examples (not exhaustive however) of each category, about which you can document behavior changes over time. Let's review those signs one more time. Let's start with

Disorientation: This would include getting lost in places where your pet should be familiar, wandering aimlessly, not being able to find entry/exit doors and staring into space.

Activity and Sleep: It's not necessarily that these dogs are less active remember that the CHARACTER of the activity itself may be changed, i.e. increased pacing or wandering purposeless activity and sleep is increased, often very DEEP, and often at times the dog was previously awake. So you may think that your dog is MORE active than in the past (for example: my dog is now sleeping 21 hours a day, and pacing the other 3).

Housetraining: these dogs may soil the home but may also signal, go out and not eliminate, fail to signal or go out, not eliminate and then come in and eliminate indoors.

Change in Family Interactions: Dog social behavior changes. They tend to walk away while being petted, and generally initiate petting and play less (or none at all). Greeting behavior is decreased or gone. If you think about it these are qualities that people value in their dogs as members of the family.

Hearing Loss vs. the Signs of CDS

"Naturally" occurring hearing loss (that is, changes we expect to see as our dog, AND OURSELVES, for that matter, gets older) is gradual and dog's usually compensate in their actions and response to stimuli. With CDS the hearing loss can be present but there are elements of confusion, so that perhaps if you clap your hands to wake your dog, s/he may alert to the sound if s/he hears a little. If s/he does have CDS, s/he will be confused and not respond appropriately.

Other Possibilities

They can be divided into behavioral and medical. Another way of thinking of these is to consider primary behavior problems, and those secondary to medical problems which may mimic signs of CDS. Your vet needs to rule out medical conditions. The physical examination and neurological examination would be a key here as with any diagnostic dilemma, since your vet would see changes in the neuro exam similar to most neurological diseases. Remember that for the most part CDS is a "diagnosis of exclusion" - it cannot be confirmed in our patients until after death, so it is important to determine other possible causes. Medical diseases that are similar to cognitive dysfunction include:

- Any Central Nervous System disease, such as a tumor;
- Any disease that indirectly affects the Central Nervous System, such as end stage organ dysfunction like renal (kidney) or hepatic (liver) disease;
- Endocrine disorders, such as diabetes
- Conditions that affect circulation or blood supply (especially to the brain). Therefore anemia, hypertension cardiac disease, respiratory disease (and their causes) must be examined;
- Painful conditions can affect the pet's response to stimuli or increase irritability and perhaps aggression;
- Deafness - and blindness - technically fall into the "secondary" behavioral problem category. Dogs with sensory impairment though — if they do not have CDS — are very good at compensating for the impairment. Deaf dogs learn to recognize other signals; blind dogs find their way around fine, and learn (for example) by bumping into things, if it's gradual onset impairment. Often in real life, of course, we see dogs with both sensory failing and CDS.
- Any condition that affects the pet's mobility (arthritis, degenerative joint disease, etc.), or the pet's senses could also directly or indirectly affect behavior; and,
- If we are dealing with house soiling we have all of the rule outs from a medical standpoint, for polyuria, incontinence, increased frequency, etc. (such as urinary tract infection, kidney disease, etc.).

In fact between the neuro exam, the physical exam, the acute onset, and laboratory tests (Blood Chemistry, Complete Blood Count and Urinalysis, as a minimum), it should be possible to rule out cognitive dysfunction in many cases. With a slower onset, a progressive condition and no laboratory tests or physical findings on exam that would indicate a medical problem that might contribute to the clinical signs (behavioral), then your vet could consider CDS a diagnosis.

Stepping back to the five "signs", is one sign enough to make diagnosis or do we need 3 of 5, or 5 of 5?

In very general terms, this is a diagnosis based on MULTIPLE signs that could be within one category or in more than one. If a dog is showing just one (say, inappropriate elimination) CDS should certainly be part of the possibilities (in an old dog with a problem that's gradual in onset) but CDS is typically a syndrome with multiple signs.

In general it is unlikely that, with a good behavioral history, you'd find aggression to be the sole sign of CDS. To answer more vaguely, aggression is a very broad, very nonspecific sign, of anything from metabolic disease to osteoarthritis to intensified dominance aggression due to impaired vision and hearing. But aggression/irritability can occur (and does) as part of this syndrome in some dogs. Also, we can have concurrent medical problems AND CDS.

In addition, there are other behavioral considerations. Primary behavior problems in dogs — those not secondary to a medical condition — may be either new or chronic. If an old dog exhibits behavior changes in one category (for example inappropriate elimination) but lacks any other signs of CDS, it is important to consider non-CDS related problems in your vet's behavioral differential. Some important primary behavior differentials include:

- Obsessive/compulsive disorders;
- Separation anxiety;
- Separation anxiety with destruction of property;
- Fear biting;
- Environmental phobia (e.g. noise/thunder);
- Inadequate housetraining (or breakdown of housetraining);
- Urine marking; and,
- Aggression of assorted varieties (dominance, fear, territorial). It must be determined whether or not these dogs are chronically predisposed to aggressiveness. Aggression is not particularly pathognomonic for CDS however. A point about separation anxiety since it may come up quite frequently as a possible diagnosis. In old dogs as in young, separation anxiety (without CDS) is classically a problem that occurs in the absence of owners and shortly after they depart (not 6 hours later) in direct response to departure, and at exit points (doors) Most important, signs of disorientation are absent. As you look at the clinical categories of CDS you may notice that all 4 categories involve disorientation to some degree (even inappropriate elimination in which dogs eliminate at their owners' feet).

Your vet will also consider drug side effects when looking at symptoms and responses to therapy when diagnosing CDS. S/he may first try therapy and wait for response if you diagnose or suspect a medical problem. Sometimes s/he may even do drug trials before making the CDS diagnosis. If a pet is on drugs, s/he will also consider the side effect of those drugs. And even if a diagnosis of CDS is made, s/he will have to remember that these are older dogs and that other medical problems may soon develop. In fact, other medical problems are LIKELY to develop, in approximately 50% of older dogs. Moreover, another medical disorder (other than CDS) is likely to occur within the same year.

Be aware that these signs are not necessarily those of normal aging. Consider also that controlling the signs of CDS can significantly improve quality of life for your dog and indirectly for the human family (and the relationship). Supportive care of your dog for other (concurrent) problems is also important in that you must have realistic expectations for management of a progressive disorder.

Is it known if primary CDS dogs have a shorter life span than other geriatric dogs, in other words can it be considered a cause of death? Indirectly the answer appears to be yes — because untreated or unresponsive CDS appears to accelerate the decision to euthanize.

Treatment Information:

Although there is no cure, your vet can help prolong the quality of your dog's life, and preserve his/her role in the family, by decreasing the behavioral problems resulting from the syndrome. There are some relatively simple steps to ease your

dog's clinical signs. For example, environmental changes (in the home or yard) can help. Examples include placing baby gates in the house to prevent injury (stairs); also using leads and fences outdoors. Old dogs with CDS wander away from home and appear lost. In the home removing clutter can ease the dog's mobility. Dogs can also be restricted to areas easily cleaned if they are inappropriately eliminating. It is important, however, not to socially isolate the dog.

We can use house soiling as an example. Even if we were to treat control or perhaps resolve an underlying medical condition such as diabetes, a urinary tract infection or CDS, the problem may persist. For these dogs we may have to alter the environment, such as taking the pet out more frequently or confinement training but behavior modification in the form of reinforcing the appropriate behavior (with food and praise) and supervision and interruption of any indoor elimination. Although supervision and interruption with perhaps a leash and halter is important if the dog begins to eliminate indoors, punishment has no place. It causes fear, anxiety, and in these older dogs perhaps even injury.

Medication:

Your vet will send home L-Selegiline (Anipryl (R)) which has been recently approved for use in the clinical indication of cognitive dysfunction (CDS) in dogs. Generally - and remember, your vet will make a decision based on what's correct for YOUR INDIVIDUAL DOG - it's dosed at 0.5 to 1 mg/kg per day for about a month. The dose is once daily in the mornings (the best time to enhance cognitive function). While most dogs seem to improve within the first couple of weeks, there are some dogs that do not show improvement until the second month.

The drug has few side effects. Occasionally, some mild gastrointestinal upset that usually resolves on its own in a few days, and there are occasional reports of increased activity, but that's about it. There are a few drug contraindications that your vet will discuss with you.

Your vet may start with a tablet size (one of 2 mg, 5 mg, 10 mg, 15 mg, or 30 mg) that is at or above 0.5 mg/kg and after about a month if there is no significant response s/he may increase to the next tablet size if it is still within the dose range. If your dog were responding at 0.5 mg/kg for a while and then started to deteriorate, your vet might increase the dose for a month if your dog was not already at the maximum recommended dose. Generally the dogs that improve are on Anipryl for the balance of their lives, which in many cases will be until they develop a medical problem that leads to death or necessitates owner euthanasia. In some cases the cognitive dysfunction will progress to a point that the medication is no longer effective.

Senior Dog Behavior History Form: **Cognitive Dysfunction Syndrome (CDS) Diagnosis**

Client Name: _____ **Patient Name:** _____

Patient Birthdate: _____ **Patient Breed/Sex:** _____

This checklist is intended to help facilitate the diagnosis of CDS as well as to document a patient's behavior changes. If a dog (7+ years of age) shows signs in one or more categories, CDS should be considered and a complete physical, neurological and laboratory workup should be completed.*

	1	2	3	4	5	6
DATE (month/day/year)						
DISORIENTATION **						
Wanders aimlessly						
Appears lost or confused in house or yard						
Stares into space or at walls						
Has difficulty finding door; stands at "hinge" side of door; stands at wrong door to go outside						
Does not recognize familiar people						
Does not respond to verbal cues or name						
Appears to forget reason for going outdoors						
ACTIVITY and SLEEP						
Sleeps more (overall) in a 24-hour day						
Sleeps less during the night						
Decrease in (purposeful) activity in a 24-hr. day						
Increase in aimless activity (wanders, paces) in 24-hr. day						
HOUSETRAINING ***						
Urinate indoors (indicate # of incidents per week)						
Defecates indoors (indicate # of incidents per week)						
Urinate or defecates indoors in view of owners						
Urinate or defecates indoors soon after being outside						
Signals less to go outside ****						
INTERACTION WITH FAMILY MEMBERS						
Solicits attention less						
Less likely to stand/lie for petting (walks away)						
Less enthusiasm upon greeting						
No longer greets owners (once dog is aware that owners have arrived)						

* These can be supplemented, as appropriate, with diagnostic laboratory screening to identify other unrelated medical conditions that may be contributing to the clinical signs. Primary behavior problems (in addition to, or rather than, CDS), such as separation anxiety, may also be seen in older patients. If other behavior problems are suspected, consultation with a veterinary behaviorist is suggested.

** The contribution of vision or hearing loss to behavior problems should be considered based upon chronicity; normal aging (non-CDS) dogs tend to compensate for reduced vision or hearing.

*** For dogs previously housetrained.; **** For dogs who previously signaled (asked) to go outside.