



Canine Cognitive Dysfunction (CD)

What is Canine Cognitive Dysfunction?

Canine cognitive dysfunction syndrome is a degenerative condition of the brain present to some degree in most senior dogs (up to 60-70% of dogs over 6 years of age). This deterioration is progressive, and although treatable, it has no cure.

What Causes Cognitive Dysfunction?

The exact cause is still under study. We have found that low levels or imbalances of vital nervous system compounds contribute to the problem (acetylcholine, serotonin, norepinephrine, and dopamine). Monoamine oxidase (enzyme that helps break down dopamine) is found in higher than normal levels.

What Are its Symptoms?

The symptoms will vary from dog to dog—in both the signs that are present and in their prominence. Here are some of the more common signs of cognitive dysfunction syndrome:

1. Disorientation: Pet wanders aimlessly, appears lost or confused in house or yard, gets stuck in corners or underneath and behind furniture, stares into space or at walls, has difficulty finding the doors, does not recognize familiar people, does not respond to verbal cues or its name, appears to forget the reason for going outdoors.
2. Less interaction with family members: solicits less attention, is less likely to allow owners to pet it (walks away), displays less enthusiasm when greeted by family members, does not greet owners on their arrival.
3. Change in activity and sleep: displays repetitive behavior (e.g., excessive licking), appears lethargic, is unwilling to perform tricks, is disinterested in taking walks, sleeps more overall in a 24-hour day, sleeps less during the night, engages in less purposeful activity in a 24-hour day, pursues more aimless activity in a 24-hour day.
4. Failure of house training: urinates or defecates indoors, urinates or defecates indoors in view of owners, urinates or defecates indoors soon after being outdoors, signals less often the need to go outdoors.
5. Repetitive or compulsive disorders, such as excessive grooming or chewing on furniture or carpet, can also be present.

How is it Diagnosed?

The history is very suggestive. A physical exam can help eliminate other possibilities. Blood tests may be indicated also to eliminate other disease entities and to establish a health baseline. There is no definitive test that can be used, rather the diagnosis is made by a process of elimination.

The behavior chart on the next page can be useful in defining abnormal behavior patterns and can be used to compare responses to treatment.

How is Cognitive Dysfunction Treated?

The affected dog can benefit from the administration of a monoamine oxidase inhibitor called Selegiline (also called L-deprenyl or Anipryl). It is given for the rest of the dog's life on a daily basis. If started early in the disease, selegiline may delay the progression of the disease. It can substantially strengthen an affected dog's quality of life.

The percent of patients that respond to the medicine is quite high (some studies suggest almost a 100% response, though most indicate about 75% respond). The response can come early (as early as two weeks), but typically takes a month or so. After 4 weeks, if a response isn't forthcoming, the dose may be doubled. If the dog doesn't respond after a month on the higher dose, the medication is stopped. Maximum benefit will be seen after three months of medication.

What is the Long-term Outlook?

Canine cognitive dysfunction syndrome is a quality of life issue. Without medication an affected dog will sadly lie on the floor, totally disinterested in the family, or confused and disoriented about its surroundings. Even though the clinical signs are behavioral, the syndrome progressively destroys the brain and thus can be devastating to the pet and its human family.

Selegiline can favorably alter that grim outlook and add valuable time (even years) to the health and well being of the pet. After several months of treatment, you will be able to judge for yourself if your pet is happier and is once again an active member of your household.

Thank you for this opportunity to serve you.



Senior Dog Behavior History Form*
 Cognitive Dysfunction Syndrome (CDS) Diagnostic Aid

Client Name: _____ Patient Breed/Sex: _____

Patient Name: _____ Patient Date of Birth: _____

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 and neurologic examination should be completed.**

	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5	Visit 6
Date (month/day/year)						
Disorientation***						
Wanders aimlessly						
Appears lost or confused in house or yard						
Gets "stuck" in corners or under or behind furniture						
Stares into space or at walls						
Has difficulty finding the 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-hour day						
Increase in aimless activity (wanders, paces) in a 24-hour day						
Housetraining†						
Urinates indoors (indicate number of incidents per week)						
Defecates indoors (indicate number of incidents per week)						
Urinates or defecates indoors in view of owners						
Urinates or defecates indoors soon after being outside						
Signals less to go outside††						
Interaction with family members						
Solicits attention less						
Less likely to stand or lie for petting (walks away)						
Less enthusiasm upon greeting						
No longer greets owners (once dog is aware that owners have arrived)						

* Adapted with permission from Pfizer Animal Health. (Developed for Pfizer by Ilana Reisner, DVM, PhD, Dipl. ACVB.)

** These examinations 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 on chronicity; normal-aging (non-CDS) dogs tend to compensate for reduced vision or hearing.

† For dogs previously housetrained.

†† For dogs who previously signaled to go outside.