

Cognitive Dysfunction

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Cognitive dysfunction describes a series of clinical signs seen in aging cats and dogs. Senility is a familiar concept and most people likely have a relative who appears to have memory issues or has been diagnosed with dementia. Autopsy findings in dogs and cats have shown brain lesions histologically similar to lesions seen in Alzheimer's patients,^{1,2} including decreased dopamine levels, cerebral atrophy, beta-amyloid plaques, and decreased numbers of neurons.^{1,2}

Veterinary professionals and pet owners have dismissed many of these issues as part of the aging process, but they may be signs of a disease state the veterinary health care team can treat.

Indicators of cognitive dysfunction in canine patients include behavioral signs such as loss of housetraining, increased anxiety, disorientation, sleep and activity changes, shifts in

levels of aggression, and a general change in alertness. In feline patients, signs include excessive vocalization, house soiling, changes in play and levels of aggression, and a tendency toward isolation.

Studies have shown the prevalence of cognitive dysfunction to be anywhere from 22% in dogs 9 and 10 years of age to as high as 73% in older geri-

atric dogs.^{3,4} Following a decade of research, new treatments are available that, along with client education, may help improve senior patients' lives.

DIAGNOSIS

When a patient presents with cognitive behavioral changes, rule out underlying issues because some disorders can mimic cognitive dysfunction or worsen the signs (eg, hypothyroidism, hypoglycemia [insulinoma], hypocalcemia, hepatic encephalopathy, hyper- or hypoadrenocorticism, brain lesions, other metabolic or electrolyte disturbances). Even a disease causing no behavior changes may be contributing to the problem, and a thorough workup is always recommended.

Team members should always take a thorough history, be educated about the differences between normal aging and cognitive dysfunction, and know how to educate clients (see handout at veterinaryteambrief.com/cognitive-dysfunction-client-handout). Determining true cognitive dysfunction can be difficult, but veterinarians and veterinary technicians must work to recognize cases that may not be normal aging.

The overriding discussion with the client should be the effect on the patient's quality of life and family relationships. If family life is not disrupted, intervention may be of no benefit; however, if the patient's quality of life or the pet owner-pet bond is deteriorating, treatment may be appropriate.



STEP 2 Treatment Plan ►

Treatment Plan

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Cognitive dysfunction treatment varies from drug-specific regimens aimed at underlying causes of brain aging and dysfunction to supplements that help support brain function. Specific signs should be treated directly.

SENSORY STIMULATION

Multiple studies with human and canine dementia patients have demonstrated that sensory stimulation positively affects cognitive function.^{5,6} It may seem odd to prescribe petting, brushing, massaging, and general stimulation, but clients informed of the benefits will likely comply. Walking provides the drug-free benefits of exercise and sensory stimulation, but always consider arthritis and pain when encouraging increased activity. NSAIDs can have a potential antiinflammatory effect neurologically,⁷ as well as relieve joint and general pain. Tramadol can also help with pain control, but the sedative effects can worsen cognition signs. Omega-3 fatty acids help support brain and joint function.

DIETS & NUTRACEUTICALS

Some diets (eg, Hill's Prescription Diet b/d, Royal Canin Calm) and many nutraceuticals are specifically designed for cognitive dysfunction. These diets are believed to help by neutralizing free radicals, providing antioxidants, and promoting cell membrane health.

Memory-enhancing agents (eg, *Ginkgo biloba*, coenzyme Q10) may help. The use of supplements specifically designed for cognitive dysfunction (eg, Neutricks, Senilife) is growing, although the author knows of no controlled studies showing a proven benefit with any particular nutraceutical. For patients exhibiting disorientation or sleep pattern changes, homeopathic and natural supplements (eg, melatonin, valerian, D.A.P. [Dog Appeasing Pheromone], Feliway) have been suggested for calming, reducing anxiety, or inducing sleep. Natural supplements such as *Ginkgo biloba* and phosphatidylserine may also be considered.

Veterinarians should explain to clients what nutraceuticals may or may not do and consider testing any benefits with a trial run of 3 to 4 weeks.

DRUG THERAPY

Studies have shown improvement in older patients' behavior after use of selegiline (anipryl, a monoamine oxidase inhibitor),⁵ the drug most commonly used for cognitive dysfunction; however, whether the improvement was related to improved neurologic function or increased alertness has been debated. S-adenosylmethionine (SAME, marketed as Novifit) and donepezil (a cholinergic agent) have also been used.⁵

Some drugs, such as promethazine, may aid sleep patterns; however, promethazine is an antidopaminergic emetic that, like other neuroleptics, can cause adverse effects. Benzodiazepines can be used as anxiolytics but should be used with caution because they may have a paradoxical effect in patients with dementia.

Increased anxiety can be addressed with pheromone diffusers, supplements such as L-theanine (marketed as anxitane), or psychotropic drugs such as fluoxetine or clomipramine. A Thundershirt may also be helpful. Consultation with a veterinary behaviorist before suggesting psychotropic drugs is recommended.

Veterinarians should be familiar with the dosage and adverse effects of any of the drugs they prescribe. Using a multimodal approach is beneficial, as it would be for treating any other disease state. Introduce one or 2 treatments at a time to help assess efficacy and not overwhelm clients.

Some clients will not wish to pursue extensive measures for their senior pet, but for those who do, many options are available that will likely yield some positive results.

Consultation with a veterinary behaviorist before suggesting psychotropic drugs is recommended.

STEP 3
Team Roles ►

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RECEPTIONIST

Client communicator

- Be familiar with the practice's approach to treating cognitive dysfunction (eg, treatment plan, educational client and team handouts)
- Recognize signs as described by clients
- Encourage clients with questions to make an appointment to discuss possible interventions
- Be sensitive to the needs of aging patients in the waiting area (eg, a quiet spot to ease anxiety, bedding to improve comfort)

TECHNICIAN

Client educator, patient caregiver

- Be familiar with the practice's approach to treating cognitive dysfunction (eg, treatment plan, educational client and team handouts)
- Know the appropriate questions to engage clients with elderly pets
- Introduce cognitive dysfunction and the difference from normal aging
- If drawing blood for heartworm screening, fill a serum separator and EDTA tube in case a full panel is indicated

VETERINARIAN

Medical expert, client and team educator

- Be familiar with the practice's approach to treating cognitive dysfunction (eg, treatment plan, educational client and team handouts)
- Stay current with available treatments and approaches
- Highlight the concept of cognitive dysfunction as a disease
- Follow up with appropriate diagnostics and recommended treatment options

PRACTICE MANAGER

Team and client education facilitator

- Be familiar with the practice's approach to treating cognitive dysfunction (eg, treatment plan, educational client and team handouts)
- Regularly update practice handouts and website information
- Keep clients informed with occasional social media posts
- Educate team members regularly to keep the topic fresh

STEP 4
Team Training Plan ►

Well-Prepared Team Members

Heather Prendergast, RVT, CVPM
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Cognitive dysfunction can be frustrating for clients until they understand the disease and realize they are familiar with the condition. Team members must be fully trained about cognitive dysfunction; be familiar with all treatment options, including risks and benefits; and be able to formulate quality answers and communicate information effectively when clients have questions, concerns, and objections. Relating the disease to the human form of dementia helps clients grasp the information and provide the support needed for their pet.

Veterinarians should develop a standard practice protocol (SPP) that includes a general description of cognitive dysfunction, clinical signs, diagnostic laboratory tests (to rule the disease in or out), and all treatment options. The SPP should also list any client handouts that enhance education and communication. The SPP is the basis for team training (see handout at veterinaryteambrief.com/cognitive-dysfunction-practice-protocol-handout).

Training for all team members is most important to ensure successful communication with the client.

Training for all team members is most important to ensure successful communication with the client. Receptionists need to be familiar with the condition (eg, scientific terms, clinical signs) and available treatment options. Veterinary technicians should receive more specific training on the science of the condition and any underlying diseases and treatments. Veterinary technicians may also be responsible for cost estimates for the medical treatment plan. Team knowledge about the disease, confidence in presentation style, and the ability to answer client questions can positively affect clients and influence them to accept the recommendations.

Training should include team members developing questions that clients may ask when a patient is diagnosed with cognitive dysfunction. These questions can then be practiced in role-playing

scenarios, which build team members' confidence when responding to clients.

Effective team training topics:

- Disease presentation
 - Obtaining an accurate patient history by asking the right questions
- Diagnostic techniques
 - Obtaining a CBC and chemistry panel
 - Some tests will be used to rule out conditions
 - Ordering additional chemistries depending on the original panel results
- Potential client questions and comments
 - Why has my pet been pooping in the house now? She has never done that before!*
 - Why is my pet restless at night? He was never like that!*
 - My pet has become grumpy in his old age. I am worried about my kids.*
 - Tug doesn't play with his ball anymore. I guess he is just getting old.*
 - Fluffy walks around the house crying all day. I do not know what is wrong with her.*
- Treatment
 - Treating specific conditions (eg, sleep patterns, anxiety) immediately
 - Identifying sensory stimulation techniques to enhance quality of life
 - Considering changes in nutrition and dietary intake, and giving patients nutraceuticals and/or drug therapy.

STEP 5
Communication Keys ►

Client Communication

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Clients must be able to understand cognitive dysfunction and its effects on their pet, particularly because they are typically very attached to older pets and strive to provide an excellent quality of life for their remaining years.

Team members should perform a self-empathy check and walk in their clients' shoes so they understand how and why clients can become frustrated with this disease. Many clients do not know that pets experience aging diseases, like humans, and they may better understand the disease when it is explained in those terms. Team members see this disease on a daily basis so it often becomes routine for them, but it is not routine for clients. Team members who can show empathy and compassion will gain clients' appreciation, understanding, and compliance.



Client education topics:

- Disease description, including these signs
 - Change in sleep patterns
 - Loss of housetraining
 - Increased anxiety
 - Changes in levels of aggression
- Diagnostic tests required to diagnose cognitive disease
 - CBC and serum chemistry panel
- Treatment options
 - Environmental and sensory stimulation
 - Nutrition and nutraceuticals
 - Drug therapy
- Expected outcomes (short- and long-term) with selected treatment options
- Financial estimates for
 - Disease diagnosis
 - Immediate disease treatment
 - Long-term disease maintenance, including all medical progress examinations.

Follow-up is important. Veterinary technicians and/or veterinarians should check in with the client on a regular basis, with the frequency depending on the complexity of the case and client understanding.

Team members must remember that cognitive dysfunction is difficult for the client to understand and may be frustrating when immediate resolution does not occur. 

Editor's note: Heather Prendergast has been in the veterinary industry for more than 20 years, working in small animal practice and as a consultant. She authored Front Office Management for the Veterinary Team and lectures nationally on practice management and veterinary technician-related initiatives.

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