**What Is It?**

Canine Cognitive Dysfunction (CCD) is a medical condition that is characterized by the changes associated with the aging process of the brain that result in a decline of canine mental faculties associated with spatial orientation (where the dog is in space), facial recognition, memory, and learned behavior. Fifty percent of dogs over age ten will exhibit some degree of symptoms of CCD. Unfortunately, many times the symptoms of CCD are mistaken as normal old age behavior, resulting in an artificially low reported number of affected dogs. Cognitive dysfunction is a progressive disease with often rapidly worsening signs of senile behavior, similar to the behavior demonstrated by humans with Alzheimer's disease and dementia. Cats suffer from cognitive dysfunction as well. However, due to the subtle nature of the presentation of feline symptoms of Feline Cognitive Dysfunction, the reported numbers, and therefore information regarding successful treatments remains limited.

**Diagnosis**

The diagnosis of CCD is based on the account of historical events and symptoms at home while eliminating other possible medical causes, such as brain tumors. When the symptoms present in a geriatric dog the suspicion for CCD increases and warrants proactive intervention and management. Common symptoms and signs may include abnormal behavior including very deep sleep states, pacing at night, getting up to urinate through the night, staring blankly, standing in a corner, barking, wandering, and increasing anxiety. As memory is affected some pets may react to a well known person as if they were a stranger, and become irritable or aggressive. Other pets may display abnormal hunger, thirst, urination and defecation habits. As the disease progresses many pets display an increasingly severe loss of learned behavior such as lack of recognition of normal commands, defecation in the house, and urination in the house or multiple times at night with increasing night time behavior.

**Treatment and Management**

CCD is not a curable disease, however several medical, supplemental and management options have shown effectiveness for some pets. Natural products such as Neutricks, available for dogs and cats, is a daily oral tablet that has been shown to effectively slow the progression of the disease symptoms with minimal risk of side effects for some pets. An oral medication called deprenyl (Anipryl) increases brain concentrations of dopamine which for some dogs, within 2-3 weeks, will cause a marked improvement in overall behavior. Several available diets formulated for aging pets that contain high levels of antioxidants and omega fatty acids support brain health. Environmental enrichment can help all dogs and cats significantly. Stimulation of the pet's senses such as touch, smell, and taste, has been documented as one of the most successful therapies to improve quality of life while also lessening the severity of the symptoms. Natural calming products that come in multiple forms such as pheromone collars (Feliway, DAPP), Thunder Shirts, liquid supplements (Composure) and daily oral tablets (Adaptil) may provide some benefit for pets, especially when used in combination. Treating concurrent diseases such as arthritis helps to decrease stress and pain, which often exacerbate the deterioration of brain function.

**Prognosis**

The prognosis for CCD depends on each individual patient’s response to trial with...
multiple treatment options. Those that respond favorably may have a delayed progression, though these positive effects may be temporary. Prognosis is poor for dogs that do not respond to any therapies. Progressive disease will eventually lead to a static lifestyle regardless of treatment for the pet as the symptoms escalate in severity while quality of life declines. While not a painful disease, many pets display significant stress and/or anxiety and owners often feel as though their pet is no longer mentally present. A personalized treatment plan with multiple therapeutic trials is important to manage CCD. Talk to your veterinarian regarding the best treatment protocol for your pet.

### Management Tips

#### Consider providing:
- Easily accessible food and water
- Ramps/stairs to common areas
- Access to safe, quiet areas away from other animals
- Gates to block stairs and prevent falls
- Warm, soft sleeping areas
- Modified surfaces to increase traction
- Low-stress, creative stimulation
- Short play dates with other calm dogs
- Prescription senior diets
- Natural calming products
- Potty pads or diapers if needed

#### Try to:
- Be consistent with medications
- Track appetite, weight, urination, defecation, energy level, etc.
- Use hand signals rather than verbal commands as your pet’s hearing fails
- Limit stressors (kids, noise etc.)
- Stimulate taste and smell senses with healthy treats
- Groom your pet to stimulate touch
- Keep furniture arrangement stable
- Have a strict walking/eating schedule
- Keep up with preventative care
- Keep closets or other storage spaces closed off to prevent the pet from getting cornered or lost in the home

Before your dog’s condition becomes unmanageable it is important to begin palliative care discussions.