



Cognitive Dysfunction Syndrome (Dementia)

Cognitive Dysfunction Syndrome (CDS) is a common age-related disease that affects the brain. It causes a decline in cognitive abilities and behavioural changes that are comparable to Alzheimer's disease in humans. The condition may be under-diagnosed as the disease is slowly progressive, and many of the changes seen can be assumed to be part of normal aging, so it is important to consider in any senior cat or dog.

How common is Cognitive Dysfunction Syndrome?

Studies suggest 14% of dogs aged 8 years and older, 28% of dogs aged 11-12 years and 68% of dogs aged 15-16 years have cognitive dysfunction. Prevalence is similar in cats with 33% of cats aged 11-14 years and 50% of cats aged 15 years and older having cognitive dysfunction. However, the prevalence is increasing and is likely higher than reported.

What are the signs of Cognitive Dysfunction Syndrome?

- Disorientation – getting lost in familiar places, getting stuck in corners, aimless wandering, staring into space, vacant episodes, increased vocalisation.
- Interaction changes - attention seeking or hiding away, not recognising familiar people.
- Changes in sleep patterns – sleeping more during the day and restless or pacing at night.
- House soiling – urinating or defaecating indoors when they were previously house-trained.
- Changes in activity levels – decreased interest in playing or exploring, less interest in going outside, restlessness, pacing, reduced grooming.
- Anxiety – separation anxiety, noise phobia, irritability, aggression.
- Learning and memory deficits – no longer responding to known commands or struggling to learn new ones.

How can we diagnose Cognitive Dysfunction Syndrome?

Unfortunately, there is no test for CDS and it is instead what we term a “diagnosis of exclusion”. This means we rule out other medical, neurological or behavioural causes for the clinical signs seen.

Investigations that may be carried out when we are considering CDS:

- Obtain a summary of symptoms including onset and progression from the owner.
- Complete behaviour screening questionnaires such as the Purina Institute Cognitive Dysfunction Syndrome Evaluation Tool (<https://www.purinainstitute.com/sites/default/files/2024-02/DISHAA-Assessment-Tool.pdf>). This can also be used to monitor disease progression.
- Physical examination, blood tests, urine tests and blood pressure measurement to rule out conditions with similar signs such as arthritis, vision or hearing loss, dental disease, kidney disease, liver disease, high blood pressure, endocrine disease (e.g. thyroid disease) and cancer.
- In some cases, advanced imaging techniques like MRIs and sampling of the spinal fluid can be used to rule out brain lesions that may mimic CDS, like inflammatory or infectious diseases, or cancer.

How do we manage Cognitive Dysfunction Syndrome?

Sadly, there is no treatment or cure for CDS. Instead, our aim is to reduce the clinical signs, improve quality of life and delay progression.

Dogs:

- Environmental enrichment
 - The environment may need to be modified to accommodate the needs of your pet and improve their comfort.
 - Resources like food/water bowls and beds need to be easily accessible.
 - Rugs may be required for slippery floors and ramps can be useful to avoid the need to navigate stairs.
 - Older dogs may require more opportunities to go to the toilet outside.
 - Older dogs can be less tolerant of children and other pets in the house so they should have protected resting areas where they can enjoy some quiet time.
 - Enrichment
 - Increase human-animal interactions by spending more time with your pet, regular play, grooming and training.
 - New toys, puzzle games or puzzle feeding.
 - Regular exercise.
- Diet
 - Certain diets high in antioxidants, medium chain triglycerides, phosphatidylserine, essential fatty acids and other important nutrients can help support the brain.
 - Antioxidants protect the brain cells from oxidative stress by reducing the deleterious effects of free radicals (unstable molecules created naturally during metabolism that cause cell damage).
 - Glucose is the main energy source for the brain, but glucose metabolism reduces with age. Medium chain triglycerides provide an alternative energy source for the brain.
 - The [Hills b/d diet](#) is an antioxidant rich diet containing flaxseed, carrots, spinach, citrus pulp, tomato pomace, grape pomace, alpha-lipoic acid, vitamin E, vitamin C, vitamin B12, L-lysine, L-tryptophan, L-carnitine and beta-carotene.
 - The [Purina One vibrant maturity 7+ diet](#) contains medium chain triglycerides.
 - The [Purina ProPlan neurocare diet](#) contains medium chain triglycerides.
 - A benefit is usually seen within 2 months of starting one of these diets.
- Supplements
 - [VetPlus Apylic](#) is a medium chain triglyceride supplement that can be added to food.
 - [VetPlus Aktivait for Dogs](#) is a supplement that provides a blend of essential nutrients to protect the brain cells from oxidative stress and support normal nerve activity. It contains phosphatidylserine, omega-3 fatty acids, antioxidants, L-carnitine and coenzyme Q10.
 - [Pet Remedy](#) and [VetPlus Calmex for Dogs](#) contain valerian root, beneficial for its calming effect.
 - [Adaptil](#) products contain pheromones, beneficial for their calming effect.
- Medications
 - Selgian (selegiline)
 - This regulates specific chemicals in the brain to help manage mood and behaviour and reduces oxidative stress resulting in neuroprotective effects.
 - A benefit may be seen within 4 weeks.
 - Side effects can include restlessness, agitation, disorientation and digestive upsets.
 - Vivitonin (propentofylline)
 - This increases blood flow to the brain which may be beneficial.
 - NSAIDs e.g. Metacam or equivalent, Carprox, Previcox, Onsior, Galliprant
 - This class of drugs have an anti-inflammatory effect which may be beneficial as inflammation is likely involved in the progression of CDS.
 - Fluoxetine
 - This is used to manage anxiety.
 - Melatonin
 - This may aid normal sleep.

Cats:

- Management options for cats differ from dogs because they have an inability to cope with change. Any changes in the house or daily routine can therefore have a negative effect if they cause stress.
- Environmental modification may be required to accommodate the needs to your pet and improve their comfort.
 - Resources like food/water bowls and beds need to be easily accessible.
 - You may need to introduce steps to help them reach higher spaces.
 - You may need additional litter trays or switch to shallow sided litter trays for easy access.
 - Older cats can be less tolerant of children and other pets in the house so they should have protected resting areas where they can relax in peace.
- Diet
 - The [Hills j/d diet](#) designed for arthritis is supplemented with antioxidants and essential fatty acids and may be useful in patients with cognitive decline.
- Supplements
 - [VetPlus Aktivait for Cats](#) is a supplement that provides a blend of essential nutrients to protect the brain cells from oxidative stress and support normal nerve activity. It contains L-carnitine, coenzyme Q10, phosphatidylserine, omega-3 fatty acids and antioxidants.
 - [Pet Remedy](#) and [VetPlus Calmex for Cats](#) contain valerian root, beneficial for its calming effect.
 - [Feliway](#) products contain pheromones, beneficial for their calming effect.
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 - The use of this medication is off-licence in cats but there is evidence it can be beneficial in some cases.
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What is the outlook for patients with Cognitive Dysfunction Syndrome?

Sadly, CDS is a slowly progressive non-reversible condition that many elderly animals experience. However, early recognition can allow us to implement a management plan that can slow the progression and improve quality of life.

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