

# Cognitive Dysfunction

- Cognitive dysfunction (CD) in dogs and cats can be compared with Alzheimer's disease in humans, although the conditions are not identical.
- Before diagnosing CD, your veterinarian may recommend diagnostic testing to rule out other medical conditions that can cause similar clinical signs.
- Medications can help some pets with CD. There is a diet for dogs with CD, and nutritional supplements may also help manage the problem in pets.

### What Is Cognitive Dysfunction?

Most people are familiar with terms like *Alzheimer's disease* or *senility* as they apply to humans. However, elderly dogs and cats develop a very similar condition known as *cognitive dysfunction (CD)*.

Researchers are still trying to understand all the changes that occur in the brains of pets with CD, but studies have determined that deposits of a protein called *beta-amyloid* play a role. These deposits have an adverse affect on brain functioning. Interestingly, research on Alzheimer's disease in humans has reported similar findings.

The exact prevalence of CD in dogs and cats is not well documented. However, evidence suggests that the disease becomes more common as pets age. In one study, CD affected 47% of dogs between the ages of 11 and 12 and 86% of dogs between the ages of 15 and 16.

### What Are the Clinical Signs of Cognitive Dysfunction?

Some of the subtle clinical signs of CD can be difficult to distinguish from regular signs of aging. These include things like slowing down and becoming less active. However, dogs and cats with CD also exhibit other signs, including the following:

- House soiling ("forgetting" how to use the litterbox or eliminating outside the box for cats)
- Decreased activity and attention
- Disorientation
- Changes in sleep cycles (pacing or wandering and crying at night)
- Withdrawing from interactions with family members

Some pets can seem to not know family members and even exhibit aggressive behavior toward other pets or members of the household, as if they are strangers. Pet owners may also report that a pet has "forgotten" tricks, behaviors, and regular routines that were well established earlier in life.

### How Is Cognitive Dysfunction Diagnosed?

Your veterinarian will likely begin the diagnostic process for CD by reviewing your pet's medical history. Valuable information can include the duration of the observed abnormalities, the severity of the problem, and whether the problem seems to be getting worse over time.

Medications can help some pets with CD. There is a diet for dogs with CD, and nutritional supplements may also help manage the problem in pets.

The most important aspect of diagnosing CD is to rule out other medical problems that can cause similar clinical signs. For example, an elderly cat that starts soiling outside the litterbox may have another illness such as a bladder infection, diabetes, thyroid disease, or a kidney problem; all of these conditions can cause increased frequency of urination. Similarly, a cat that has arthritis may have difficulty getting into and out of the litterbox and therefore be reluctant to use it. Senior pets can also begin to lose their vision and hearing, which may affect how they interact and respond to family members. Your veterinarian may recommend a variety of diagnostic tests to rule out other medical issues before making

## Common Conditions

a diagnosis of CD. Preliminary tests may include the following:

- Blood tests, including a chemistry panel and complete blood cell count (CBC)
- Urinalysis and urine culture testing to evaluate kidney function and look for evidence of kidney or bladder infection
- Radiographs (x-rays) to look for evidence of arthritis and to check for cancer or other changes involving organs in the abdomen or chest
- Abdominal ultrasonography
- Specific blood tests to evaluate thyroid function and look for other medical conditions

### What Are the Treatment and Outcome for Cognitive Dysfunction?

While there is no cure for CD, treatment may help improve the signs and slow the progression of the

disease. Depending on the severity of the clinical signs, there are medications that can help dogs with CD, but there is currently no licensed medication for cats with the condition. There is a diet that can help dogs with CD, and nutritional supplements may also help manage the problem in pets.

There is no single medication that can help all pets with CD. However, it has been shown that exercise and mental stimulation can help slow the progression of CD. Regular exercise that is appropriate for an older pet, combined with environmental enrichment with toys and play activities, may help keep pets more alert as they age.

If the problem becomes too severe and issues such as house soiling, aggression, and poor quality of life become intolerable, euthanasia can be a reasonable option to discuss. Your veterinarian can help you and your family sort out these issues and try to help you make the best decision for you and your pet.