



Healthy Cognition in Aging

# UNDERSTANDING MILD AGE-RELATED COGNITIVE DECLINE IN DOGS AND THE ROLE OF DIET

Changes occurring in the brain associated with advancing age can contribute to cognitive decline in dogs, similar to age-related cognitive dysfunction in people.



Clinical signs can include problems with memory, attention, and trainability as well as disorientation, changes in sleep-wake cycle, and decreased social interaction.

The degree of age-related cognitive decline can range from mild (early) impairment with a minimal number of subtle signs, which may be considered “normal aging,” to cognitive dysfunction syndrome (CDS), a condition similar to Alzheimer’s Disease in people, in which more severe signs occur.

Mild impairment has been reported in dogs as young as 6 years old. Age-related cognitive decline is typically a slowly progressive condition, but whether and how quickly it progresses vary between individual dogs. Recognition of mild age-related cognitive decline is key, as management approaches, including targeted nutrition, may help delay progression and manage signs.

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**DID YOU KNOW?**

Nutrition may slow brain aging in dogs.

## Key Messages

- Multiple metabolic, structural, and functional changes occur in the brain with advancing age that contribute to age-related cognitive decline. The brain relies on glucose as its primary energy source, but an aging (age 7+, age at which dogs are generally considered “seniors”) dog’s brain becomes less efficient at metabolizing glucose, resulting in brain energy depletion and cognitive decline.
- Feeding a diet with medium chain triglycerides (MCTs) sourced from enhanced botanical oils can help support cognitive health in senior dogs. The MCTs provide an alternative energy source for the brain. Purina studies have shown that healthy senior dogs fed a diet containing MCTs made fewer errors on cognitive tests, with improvement in memory beginning within 2 weeks. Senior dogs fed the MCT diet also performed better than dogs fed the control diets as the tasks became more complex.
- Additional brain-supporting nutrients include the omega-3 fatty acids DHA and EPA; antioxidants, e.g., vitamins C and E; the amino acid arginine; and B vitamins. Purina studies have shown that senior dogs fed a diet supplemented with a blend of these nutrients performed better on several learning tasks.

## Additional Resources

Dewey, C. W., Davies, E. S., & Wakshlag, J. J. (2019). Canine cognitive dysfunction: Pathophysiology, diagnosis, and treatment. *Veterinary Clinics of North America: Small Animal Practice*, 49, 477–499. doi: 10.1016/j.cvsm.2019.01.013

Pan, Y., Larson, B., Araujo, J. A., Lau, W., de Rivera, C., Santana, R., Gore, A. & Milgram, N. W. (2010). Dietary supplementation with medium-chain TAG has long-lasting cognition-enhancing effects in aged dogs. *British Journal of Nutrition*, 103, 1746–1754.

Pan, Y., Kennedy, A. D., Jonsson, T. J., & Milgram, N. W. (2018). Cognitive enhancement in old dogs from dietary supplementation with a nutrient blend containing arginine, antioxidants, B vitamins and fish oil. *British Journal of Nutrition*, 119, 349–358. doi: 10.1017/S0007114517003464

The Purina Institute aims to help put nutrition at the forefront of pet health discussions by providing user-friendly, science-based information that helps pets live longer, healthier lives.