

# Senilife®: Helping older dogs and cats find the way to youth.





**Effective Neuroprotection To  
Help Protect Pets From Brain Aging**



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# Senilitis

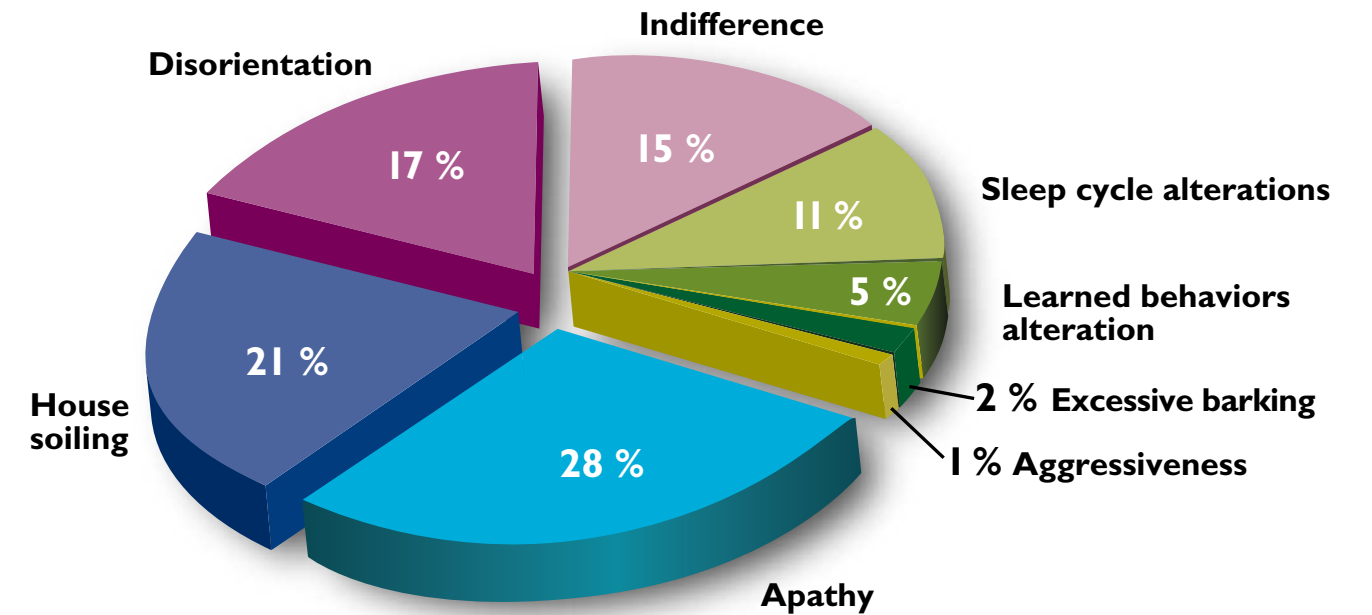


## Clinical signs associated with brain aging

### IN DOGS

A. Laborde<sup>(1)</sup>

Most common clinical signs associated with brain aging



**▶ Apathy, house soiling, disorientation and indifference are the main clinical signs of brain aging**

### IN CATS

G. Landsberg, Joseph A. Aurojo<sup>(2)</sup>

Clinical signs most commonly seen during initial consultation:

- Cats play less
- Are apathetic

Clinical signs seen during behavioral consultation:

- 73%** House soiling (urine and feces) in the whole house
- 15%** Excessive vocalizing day and night
- 6%** Aggressiveness to people
- 6%** Aggressiveness to other pets

Brain aging can also cause owner interaction abnormalities and sudden disorientation in cats

1. A. Laborde Veterinary Thesis 2005 "Veterinarians and brain aging in dogs: National survey and realization of a practical file"

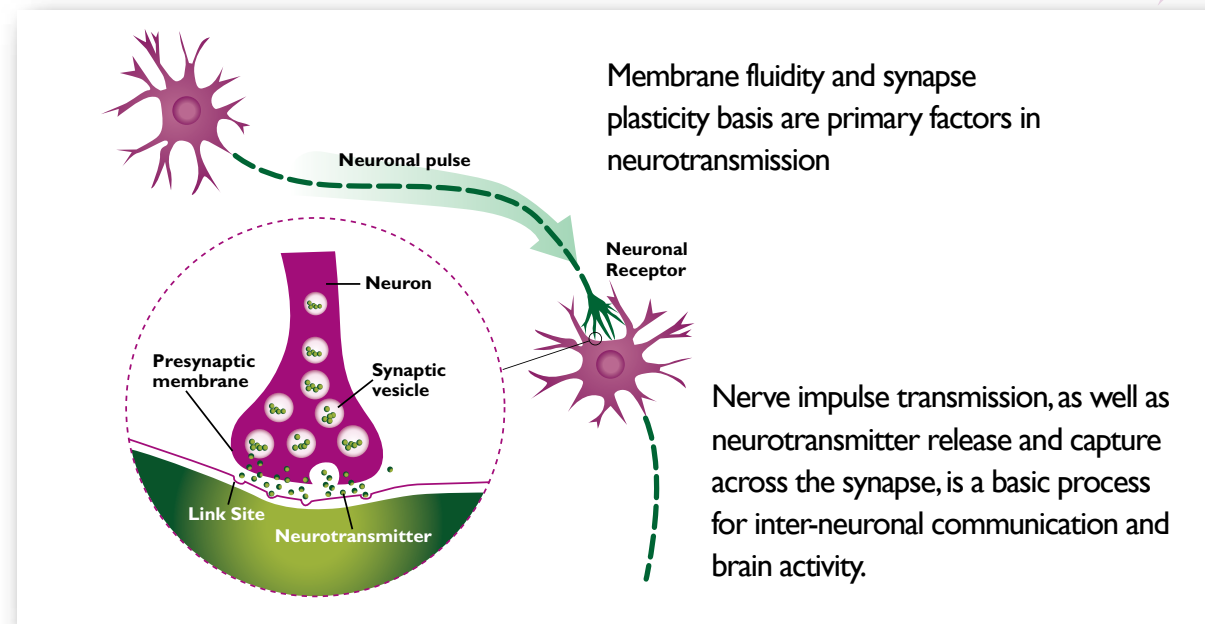
2. G. Landsberg, Joseph A. Aurojo Behavior problems in geriatric pets. Vet Clin Small Anim. 35(2005) 675-698

# A unique combination of natural antioxidants which helps protect pets from brain aging

## IMPROVES NEURONAL FUNCTIONALITY

### Phosphatidylserine

Phosphatidylserine is a natural phospholipid, and structural component of cell membranes.



Phosphatidylserine's effects on neuronal aging are multiple:

- Restores neuronal membrane fluidity<sup>(3)</sup>
- Modulates the cholinergic system<sup>(4)</sup>
- Stimulates the synthesis and release of dopamine<sup>(5)</sup>
- Inhibits age-related loss of neurotransmitter receptors

### Pyridoxine

Pyridoxine, better known as vitamin B6, is a cofactor for multiple neurotransmitter biosynthesis: dopamine, serotonin, and noradrenalin.<sup>(6)</sup>

**It normalizes neurotransmitter levels and potentializes synaptic transmission.**  
**It has a synergetic effect with phosphatidylserine.**

## INCREASES BLOOD FLOW AND NEURONAL PROTECTION

### Ginkgo Biloba

Active components of ginkgo biloba extracts are flavanoides (24%) and terpenes (6%). **Clinical effects of ginkgo biloba have been clearly and largely proven in humans. Its high biological availability and safety of use makes this extract a first choice for aging dogs and cats.**

#### • Increase of blood flow

Ginkgo biloba improves brain metabolism and glucose consumption.<sup>(7-8)</sup>

#### • Antioxidant action

This extract has an important antioxidant action and protects neurons.<sup>(9)</sup> It also prevents neuronal apoptosis due to Beta-Amyloid deposits.<sup>(10)</sup>

### Resveratrol

Resveratrol is a polyphenol present in grapes and red wine. It is a great antioxidant with several actions:

- Protects neurons against toxicity of free radicals and beta-amyloid peptides.<sup>(11-12)</sup>
- Prevents spatial memory deficiencies due to oxidative stress.<sup>(13)</sup>

### Vitamin E (D-alpha-tocopherol)

D-alpha-tocopherol is the natural formulation of vitamin E. It has far better antioxidant actions on free radicals than the synthetic analogue. In dogs, this component has proven effects on cognitive dysfunction.<sup>(14)</sup>

## SUMMARY

▶ **Phosphatidylserine combined with pyridoxine restores neuronal membrane fluidity and stimulates the synthesis and release of neurotransmitters.**

▶ **Ginkgo Biloba, Resveratrol and Vitamin E increase blood flow and protect against free radicals.**

3 Tsakiris S, Deliconstantinos G. Influence of phosphatidylserine on (Na<sup>+</sup>+K<sup>+</sup>)-stimulated ATPase and acetylcholinesterase activities of dog brain synaptosomal plasma membranes. *Biochem J*. 1984; 220(1):301-7

4 Milan F, Guidolin D, Plato P, et al. Structural changes of basal forebrain cholinergic neurons in the aged rat. Effect of phosphatidylserine administrations. In: Pepeu G, Tomlinson B, Wischik CM. *New Trends in Aging Research*. 1988. Liviana Press, Padova, Italy. 221-31.

5 Raitieri M, Caviglia AM, Marchi M, Maura G, Pittaluga A. Changes of neurotransmitter release in the old rat brain and effects of phosphatidylserine treatment. In: Pepeu G, Tomlinson B, Wischik CM. *New Trends in Aging Research*. Liviana Press. Padua, Italy. Pp: 21-26

6 Dakschinamurti K, Paulose CS, Siow YL. Neurobiology of Pyridoxine. In: Reynolds RD, Leklem JE, eds. *Vitamin B6: Its role in Health and Disease*. New York: Alan R. Liss, Inc. 1985. Pp: 99-121

7 Delafotte S, Hellegouarch A, Clostre F. The pharmacological basis for the vascular impact of ginkgo extract. *Presse Med*. 1986;15(31):1524-8

8 Spinnewyn B, et al. Effects of Ginkgo biloba extract on a cerebral ischaemia model in gerbils. *Presse Med*. 1986;15: 1511-5

9 Bastianetto S, Quirion R. EGb 761 is a neuroprotective agent against beta-amyloid toxicity. *Cell Mol Biol*. 2002. 48(6):693-7

10 Yao Z, Drieu K, Papadopoulos V. The Ginkgo biloba extract EGb 761 rescues the PC12 neuronal cells from beta-amyloid-induced cell death by inhibiting the formation of beta-amyloid-derived diffusible neurotoxic ligands. *Brain Res*. 2001. 889(1-2) : 181-90

11 Bastianetto S, Zheng WH, Quirion R. Neuroprotective abilities of resveratrol and other red wine constituents against nitric oxide-related toxicity in cultured hippocampal neurons. *Br J Pharmacol*. 200; 131(4):711-20

12 Han YS, Zheng WH, Bastianetto S, Chabot JG, Quirion R. Neuroprotective effects of resveratrol against bet-amyloid-induced neurotoxicity in rat hippocampal neurons; involvement of protein kinase C. *Br J Pharmacol*. 2004; 141(6):997-1005

13 Sharma M, Briyal S, Gupta YK. Effect of alpha lipoic acid, melatonin and trans resveratrol on intracerebroventricular streptozotoin induced spatial memory deficit in rats. *Indian J Physiol Pharmacol*. 2005; 49(4):395-402

14 Overall K.L. Canine brain aging from diagnosis to management. 27 WSAVA World congress, Granada, Spain, October 2002

# Provides specific neuroprotective activity and quickly improves behavior in aging dogs and cats

## PROTOCOL

### - Inclusion specifications

Cats or dogs presenting at least two of the following signs: Plays less, is tired or lacks energy, is apathetic or “seems sad,” howls/barks at night, no longer responds to commands, is disoriented, urinates/defecates inappropriately.

To each sign is given a severity score (3 = always, 2 = sometimes, 1 = rarely, 0 = never).

### - Exclusion specifications

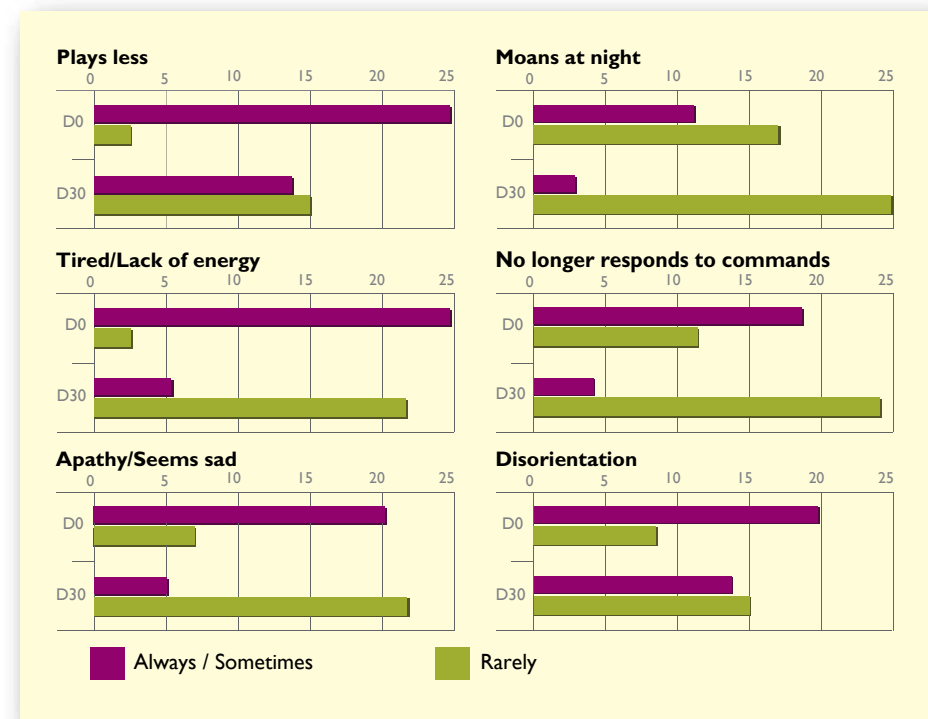
Cats or dogs presenting deafness, blindness, organic or metabolic pathology.

Animals already receiving a treatment against brain aging.

Animals for whom brain aging treatment has been stopped at least 15 days before the study begins.

**Senilife was given orally, directly in animal’s mouth or in the food, once a day over a four week period.**

## EFFICACY RESULTS AT 30 DAYS



### - Monitoring

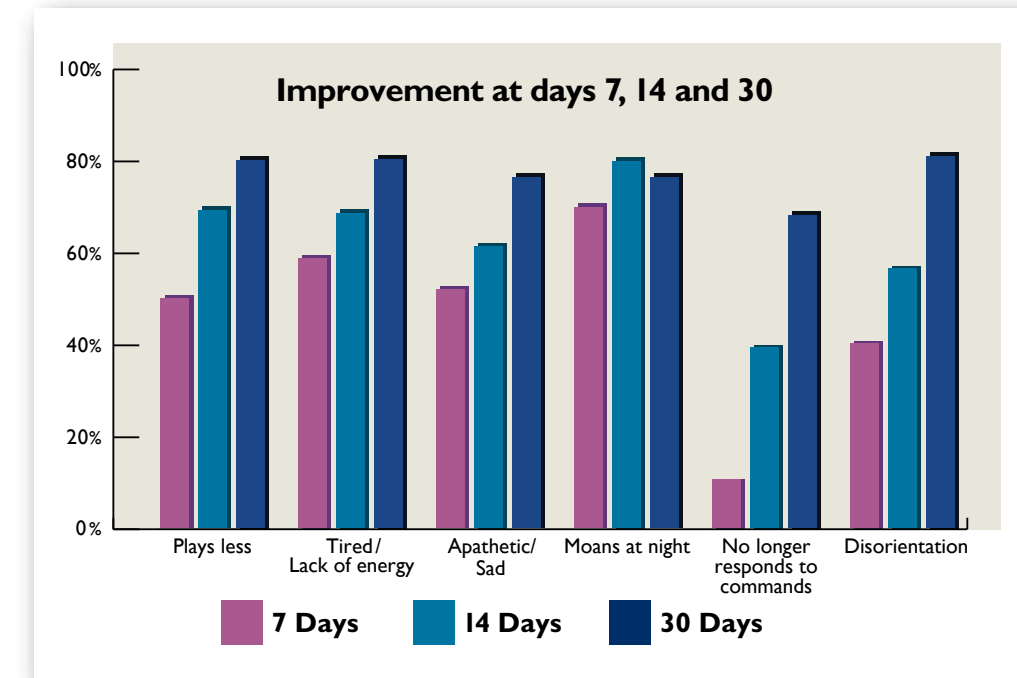
V1 (inclusion visit)  
P2 (day 7), P3 (day 14): phone calls to owners  
V4 (day 30)

### - Efficacy evaluation specifications

Severity score evolution of each clinical sign.  
Speed of improvement.  
Evaluation of overall clinical improvement (by owners at day 7 and 14 and by vets at day 30).

## SPEED OF ACTION

Veterinarians and owners evaluated speed of animals’ clinical improvement at 7, 14 and 30 days after beginning treatment.

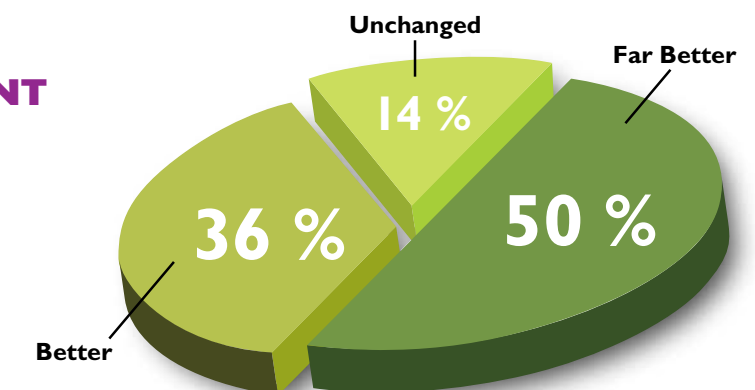


### After only 7 treatment days:

- More than **50%** of dogs improved “Plays less,” “Tired” and “Apathetic”
- More than **70%** of dogs improved “Moans at night”

## OVERALL IMPROVEMENT SEEN BY OWNERS

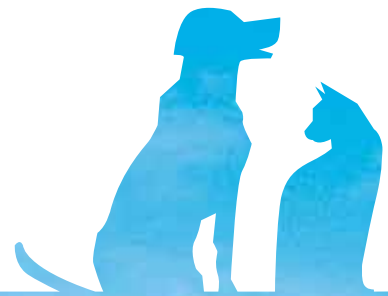
**86%** of owners were satisfied with the overall improvement of their pet after one month of Senilife.



▶ **Senilife significantly improves brain aging symptoms in less than 30 days.**

▶ **Senilife is efficient, fast-acting, and provides continuous improvement of brain aging symptoms.**

# Senilife®

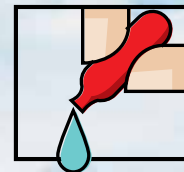
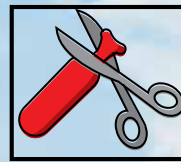


With its unique combination of natural antioxidants, Senilife® provides neuroprotective action which helps protect pets from brain aging and quickly improves the behavior changes associated with the brain's aging process.

- Unique formulation
- Specific action on brain aging
- Cost effective
- Quick response to treatment

### New capsule design

- Place entire capsule into pet's mouth, or
- Place capsule contents onto animal's food



### Available in two sizes

- Senilife for dogs and cats
- Senilife XL for dogs over 50 lbs.
- 30 capsules/bottle

### When to administer

- For therapeutic treatment, administer upon recognition of clinical signs on page 3
- For assistance in protecting pets from brain aging, start administering when pet reaches senior years as outlined in the chart below

### When to start Senilife® for the best protection against brain aging

