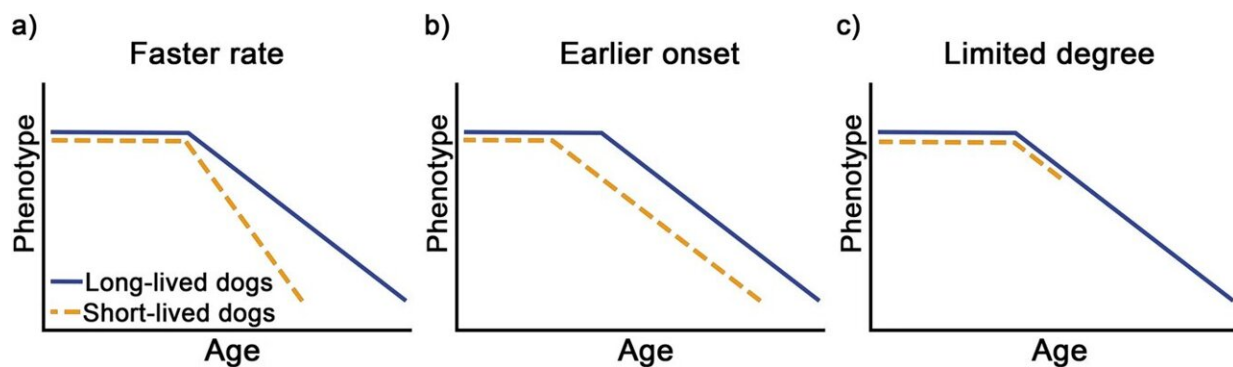


# Size matters: How body size shapes dogs' aging patterns

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Outline of the three hypotheses raised in the current study. a The Faster rate hypothesis expects short-lived and larger breeds to have faster rate of decline and a shortened senior period. b The Earlier onset hypothesis assumes that the age-related decline starts at a younger age in short-lived and larger dogs. c The Limited change hypotheses expects short-lived and larger dogs to exhibit a limited degree of age-related decline as they die before more serious decline would start. Please note that contrary to their schematic representation here, these three hypotheses were not formulated to be mutually exclusive. Credit: *GeroScience* (2023). DOI: 10.1007/s11357-023-00945-9

Smaller dogs may live twice as long life as their larger counterparts. But does this size difference also impact how dogs age in terms of behavior and cognitive abilities? Based on the data of 15,000 dogs, researchers from ELTE Eötvös Loránd University, Budapest, found that larger dogs experience an earlier onset of age-related decline (at around 7–8 years of

age versus 10–11 years in smaller dogs), but also a slower decline rate compared to smaller dogs.

Additionally, the study also points out that, although larger [dogs](#) have somewhat shorter lifespans, they also maintain their cognitive health longer and experience a smaller degree of age-related decline than their smaller counterparts.

The average [life expectancy](#) of dogs varies more than two-fold between breeds, with giant dogs generally living to seven years and small dogs to fourteen. Purebreds also have a shorter life span than mixed breeds. However, little is known about how life expectancy is related to age-related behavioral and cognitive decline.

In a study published in [GeroScience](#), researchers from ELTE Eötvös Loránd University, Budapest, explored the intriguing connection between a dog's size and its [aging process](#).

The researchers collected data from over 15,000 dogs and assessed the age trajectories of various behavioral characteristics and the prevalence of canine cognitive dysfunction. They investigated at what age the behavioral and [cognitive changes](#) start, how fast the changes progress, and also examined factors like the dog's body size, head shape, purebred status in relation to these age-related changes.

According to the results, behavioral and cognitive aging in dogs begin around ten and a half years of age, but the onset of aging, as well as the aging rate depend on the body size of the dogs. Dogs weighing over 30 kg (66 lbs) show an earlier onset of age-related decline by two-three years, but the rate of decline is slower compared to smaller dogs.

"Larger dogs experience a physical breakdown at an earlier age, and the accumulating illnesses, and degradation in sensory functions leads to 'old

age behaviors' long before their mental decline would begin," explained Borbála Turcsán, first author of the study.

On the other hand, dogs weighing less than approximately 7 kg (14 lbs) exhibited over four times higher prevalence of cognitive decline in old age than larger dogs, supporting the idea that although larger dogs have a shorter lifespan, they also experience a more limited degree of cognitive decline.

Unexpectedly, long-nosed (dolichocephalic) dogs, such as greyhounds, and purebreds have a higher risk of developing [cognitive decline](#) in old age compared to meso- and brachycephalic dogs and mixed-breeds.

One of the most interesting findings of the study was that owners started to consider their dogs "old" around the age of 6, regardless of the size of the dog or its purebred status. "Owners consider their dogs 'old' four to five years earlier than would be expected from behavioral data. This may be due to graying and barely noticeable changes," explained Enikő Kubinyi, Head of the Senior Family Dog Project.

The new research highlights that body size not only influences a dog's life expectancy, but also its healthspan.

However, the effect is not gradual, as only extreme size groups, the very small (toy) or very large (giant) dogs have markedly different aging trajectories. "For those who want a smaller sized dog but do not want to risk severe mental health problems in old age or want a larger sized dog but do not want to risk physical health problems at 7-8 years of age, we recommend a dog from the 10–30 kg size range," explained Turcsán.

"Based on our results, these dogs have a longer healthspan relative to their expected lifespan than their smaller and larger counterparts."

**More information:** Borbála Turcsán et al, Differential behavioral aging trajectories according to body size, expected lifespan, and head shape in dogs, *GeroScience* (2023). [DOI: 10.1007/s11357-023-00945-9](https://doi.org/10.1007/s11357-023-00945-9)

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