Playtime, being social helps a dog's aging brain, study finds

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As their aging brains shrink, older dogs can suffer the same memory and thinking problems as many older humans do.

But dogs are just like humans in another way—playtime and social

activities can help preserve their brain function, a new study finds.

Exercising, socializing, playing with toys and playing with other dogs helped a small group of beagles maintain their brains, researchers reported April 1 in the *Journal of Neuroscience*.

Such social enrichment activities particularly helped maintain the size of the beagles' hippocampus, a brain region tied to memory and emotion that is particularly sensitive to age-related decline, researchers said.

Brain scans "showed that total hippocampal volume increased at an average rate of about 1.74% per year across treatment groups, contrasting with the age-related hippocampal volume decline" observed in previous studies, wrote the research team led by senior researcher Craig Stark, a professor of neurobiology at University of California, Irvine.

For the study, researchers tracked the brain health of 43 middle-aged beagles, including 36 females and seven males, for three years as part of a study involving two potential drugs for Alzheimer's disease. The dogs were all 6 years old at the start of the study.

All dogs received daily exercise, play with a rotating set of toys and socialization. They also were allowed to play for a half-hour each day in male-only or female-only groups.

Beagles assigned to receive the brain drugs didn't do any better or worse than the control group that only received social enrichment, the researchers noted.

However, all dogs appeared to benefit from playtime and social activities.

The beagles all had average-sized brains at the beginning of the study, suggesting that the hippocampus didn't grow as part of typical aging, the researchers said.

"Instead, we argue that these increases may be attributed to the high levels of behavioral enrichment in the present study that included social interaction, exploration, physical exercise and sensory stimulation."

These sort of activities can increase healthy blood flow to the brain and might even prompt the growth of brain cells, the researchers explained.

They next plan to continue tracking the dogs' health as they grow older, noting that when they reach age 9—essentially around 60 for humans—canines often start showing signs of brain aging.

Follow-up MRIs scheduled for ages 10 to 11 will provide the final word on whether the brain drugs being tested helped the beagles. They also will provide further evidence regarding the benefits of social activities and play.

The researchers concluded that "adopting a dog and offering it a loving home even when it is middle-aged may improve its longevity and benefit its health in old age."

"It doesn't hurt to take this as a helpful pet-care tip with growing scientific support: playing with your dogs may be beneficial to their brain health... and maybe yours as well," the researchers added in a journal news release.

More information: Jessica A. Noche et al, Age-related brain atrophy and the positive effects of behavioral enrichment in middle-aged

beagles, *The Journal of Neuroscience* (2024). DOI: 10.1523/JNEUROSCI.2366-23.2024