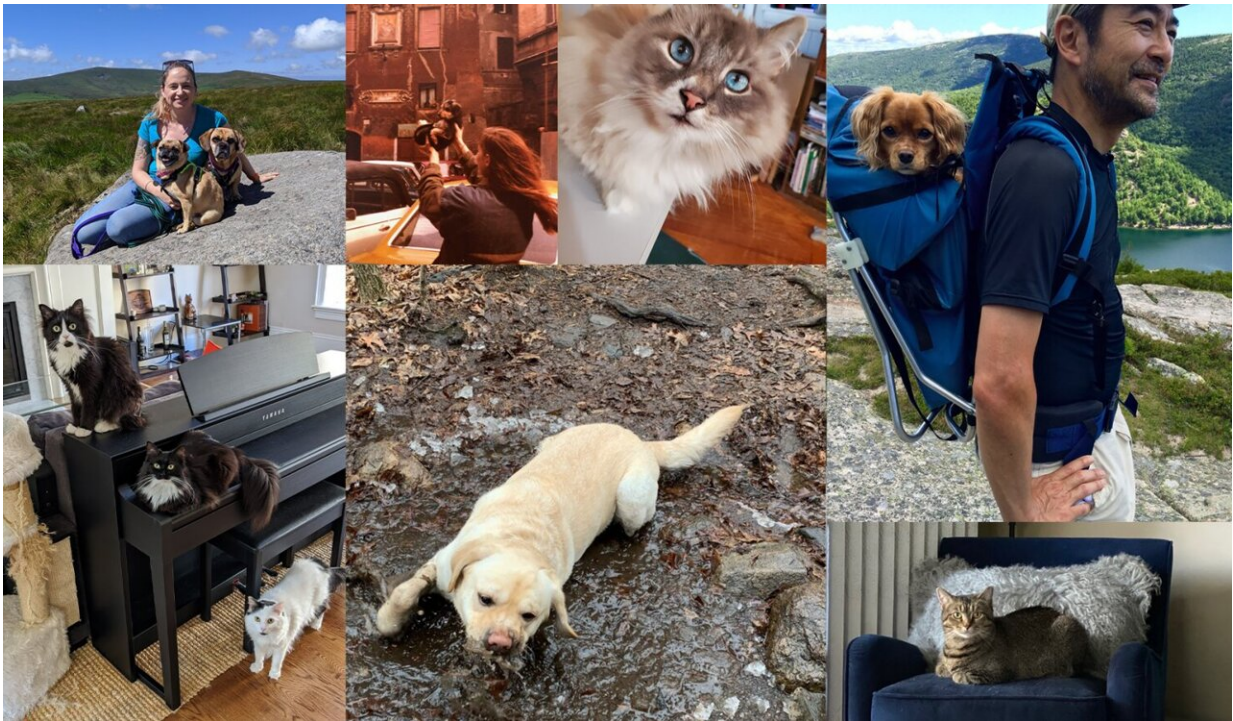


# Q&A: Research suggests having connection to dogs may lower depression, anxiety

August 15 2024, by Alvin Powell



The research team and their pets. Credit: Harvard's Nurses' Health Study

They are said to be our best friends, and a new study suggests the possibility there may in fact be a mental health dividend for pet owners who feel a real bond with Fido.

Researchers at Harvard's Nurses' Health Study exploring conflicting

findings on whether pet ownership is good for our mental health have found that having—and loving—a dog (sorry, cat people) is associated with lower symptoms of depression and anxiety.

The Gazette spoke with Eva Schernhammer, a Nurse's Health Study researcher and adjunct professor of epidemiology at the Harvard T.H. Chan School of Public Health about the [research](#), published recently in *JAMA Network Open*.

Schernhammer said the work is an initial step to discover connections between ourselves, our physical and mental health, and the pets we keep.

## **What did you find?**

We used several different measures for depression and for anxiety and found overall that there is an inverse association between pet attachment and negative mental health outcomes. That means the more attached you are to your pet, the lower your risk of depression and anxiety.

The effect was particularly strong among women who had a history of sexual or [physical abuse](#) in childhood, who made up the majority of our study population.

I think those findings were mostly driven by dogs, because the majority of the pets owned in the study were dogs—it was about two-thirds dogs and one-third cats. The association was similar to what we found when restricting the analysis just to dogs, but not as strong.

With cats, there doesn't seem to be an association between pet attachment and mental health outcomes. There was a smaller number of respondents though, so we cannot rule out that we don't see anything because there were too few cats in the survey.

I think we all were a bit surprised that there's such a big difference between dogs and cats. It'll be interesting to explore this further.

## **Is this a topic you've been studying for some time?**

This is part of a bigger study to examine human–animal interaction, specifically with pets. We felt that this is understudied, and there was a great opportunity to explore it in the Nurses' Health Study cohort. It's also something that people like to share—it turns out that the nurses in the study were more than willing to provide interesting details about their pets.

Many studies have been done on the effects of pet ownership, but the premise of this study is that it may matter more how much you are attached to the pet than if you simply own a pet. Many people have pets, but not every owner is attached to their pet.

Plenty of people don't enjoy having to walk their dogs in the morning because the dog is the beloved pet of their child, for example. So the goal was to sort out whether attachment is the more important variable that links pets to health outcomes in humans, and then to study mechanisms.

We have completed, to some extent, the first part of this project and are now starting to look at mechanisms that could explain why higher pet attachment could be linked to better mental health outcomes in these cohorts. The primary hypothesis is that this could be mediated by the microbiome and metabolomics.

We are just starting to look at this and the finding—in the paper that we're discussing—that there's a big difference between dogs and cats. That was not entirely expected but it's strong.

Interestingly, in our preliminary metabolomics analysis, we see quite different patterns between cats and dogs. It'll be interesting to understand whether some of these hypothesized microbiome mechanisms indeed differ by cats and dogs and might explain what we see in this first paper.

**That's interesting. So in Nurses' Health Study II, which is the cohort that you're using, there were biological samples taken?**

Yes, but this cohort is from a sub-study, the Mind Body Study, conducted about 10 years ago. The goal of that study was to take a closer look at psychosocial factors, which had not been a main focus of the Nurses' Health Study, which was initiated to study breast cancer risk and lifestyle factors.

The Mind Body Study captured a lot of different aspects of the psychosocial context of participants and one of them was pet attachment, which is usually not assessed. So it gives us a rare opportunity to look at that.

They also provided two samples of blood, urine—pretty much everything—at the beginning of the study and a year later. And, because of its focus on psychosocial aspects, they also oversampled women who had experienced some form of childhood abuse. About three-quarters of the women in this cohort have experienced some form of abuse, be it sexual or physical.

**You mentioned a follow-up study on the microbiome as a potential mechanism for these effects. What did you examine? Were there stool samples taken?**

There are stool samples. We have a study—we are trying to get funding to run additional analyses—the Nurses' Health Study 3, which is still recruiting and is online-based. We have started querying about pets, because it's fairly easy with online questionnaires to send questions to the participants.

And we have started to collect stool of the participants and of their pets. That means we have concurrent samples from both the owner and their cat or dog. We want to analyze them to look for specific patterns in the microbiome that have previously been shown in depressed individuals.

Perhaps we will see those patterns diverging between those attached to pet dogs and pet cats, for example, which could provide an explanation for the information for the lower risk of depression. By looking at concurrent owners and their pets' stool, we can also see whether there's microbial transfer going on, thereby altering their depression risk.

**I had always thought that the positive benefits of pet ownership were due to companionship and the affection they give, but it all might boil down to physical, biological reasons?**

Yes, we want to understand whether there are some biological mechanisms that we can explore. It makes sense, because even for some of the psychosocial variables in humans that have been linked with health outcomes, usually when you start looking they also have an impact on biology.

Stress can alter your susceptibility to glucose intake, for example. So, it wouldn't be entirely surprising, even if this is driven primarily by [psychosocial factors](#), that those translate into something more mechanistic. That's something very tangible and could also explain why,

for instance, this might differ for cats, as most cats are indoor cats. That's part of what we will look at too, whether there are big differences between the microbes that we find in the dogs' feces versus the cats' feces.

## **Is the take-home message that everyone should get a dog? The cat owners might not like that.**

Moreover, the cats might not like it. An important message is that in our subgroup of women who were abused, these findings were particularly strong. Maybe in the future, we can define more subgroups who might particularly benefit from having a pet. We shouldn't prescribe a pet to somebody who doesn't like animals, but if somebody wants a pet and can accommodate it in their living environment, then this might be one good way to deal with depression-related symptoms.

This also helps us understand better this subgroup of women who suffered childhood abuse. They were the vast majority in our sample, and I think that's an important point to make. I do hope that there's going to be more well-done studies that illuminate this.

It's an interesting potential way to do something about [mental health](#) in humans and, at the same time, increase physical activity and alter other aspects of our lives that are affected by pets. We're just starting to understand the benefits of pets, and this may be one important step.

**More information:** Magdalena Żebrowska et al, Pet Attachment and Anxiety and Depression in Middle-Aged and Older Women, *JAMA Network Open* (2024). [DOI: 10.1001/jamanetworkopen.2024.24810](https://doi.org/10.1001/jamanetworkopen.2024.24810)

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