

Are Pet Owners Really at Greater Risk of Cancer?

The surprising results of a new "big data" study of cancer rates in pet owners.

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Source: Jean-Paul CHASSENET/123RF

Our pets might give us unconditional love, but they can also give us a host of things we really don't want. These include Lyme disease, leptospirosis, giardia, ring worms and salmonella. Indeed, some researchers have even claimed that we might get cancer from our pets. Thus pet lovers will find a new study by researchers from the University of Arizona reassuring. Using a data set of over 120,000 women, they found there was no relationship between owning pets and developing nine types of cancer. But they did find some very surprising links between pet ownership and health in adult women.

The idea that there is a link between pet ownership and cancer is not as far fetched as you might think. After all, some cancers of the throat and mouth are caused by an oral form of the human papilloma virus which is transmitted from person to person, possibly even by kissing. Several studies have supported the idea that pets can carry carcinogenic pathogens. German researchers, for instance, found that 38% of a group of Bavarian women with breast cancer had lived with a dog for at least 10 years. In contrast, only 15% of women in a matched control group without cancer had a dog (here). The researchers hypothesized that dogs might carry a variant of a mammary tumor virus. In an article published in the medical journal *The Lancet*, L. J. Donaldson and his colleagues suggested that cats may transmit feline leukemia viruses to their

owners. Pet birds have also been linked to cancer. Two research teams found that patients with lung cancer were considerably more likely than control groups to have had an avian pet (here and here.)

However, before you get in a panic, other researchers have found different results. For example, a 1996 study reported that women who lived with birds were not at increased risk for lung cancer. A British study found cat owners were no more likely to suffer from brain cancer than non-cat owners. Several studies found no support for the idea that cats transmit leukemia (here and here). Indeed, a 2008 study found that cat, dog and bird owners in the San Francisco Bay area were at *reduced* risk of developing non-Hodgkin lymphoma.

In short, like a lot of studies on the impact of pets on human health, research linking cancer with pet ownership has produced a mixed bag of conflicting results. (See Will Getting A Pet Make You Healthier?) A soon to be published study, however, has clarified the relationships between pets and cancer. Some of their results are reassuring, but others are disappointing.

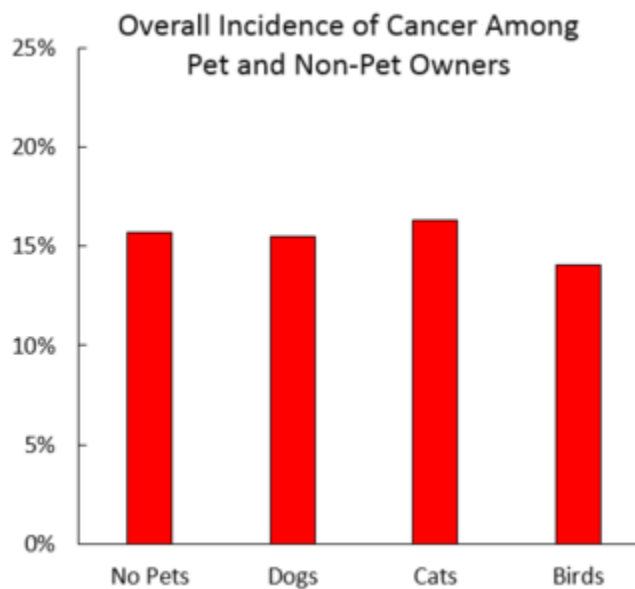
What “Big Data” Reveals About Pets and Human Cancers

The research team was led by David Garcia of the University of Arizona. They used a huge existing medical data set to investigate the relationship between pet ownership and the risk of nine forms of cancer (breast, colorectal, endometrial, kidney, bladder, stomach, lung, ovary, and lymphoma). Their findings generally put to rest any concerns you might have that pets cause cancer. But their research also reveals some unexpected non-cancer related health differences between pet owners and non-owners.

This research effort was impressive. Previous attempts to link pets to human cancers were *retrospective studies*. This means investigators examined pet ownership in people who had already developed cancer. In contrast, the Garcia study was prospective. *Prospective studies* are much more convincing than retrospective research. These are longitudinal studies that involve recruiting and collecting baseline data on large numbers of subjects. The participants are then followed for decades to see what epidemiological/environmental factors are associated with the development of diseases.

Garcia and his colleagues used data collected as part of the Women’s Health Initiative(WHI). This is a major multi-site project initiated by the National Institutes of Health in 1993 to uncover the causes of major diseases in women including cancers and heart diseases. It involved over 161,808 women between the ages of 50 and 79. Garcia’s sample included about 21,000 dog

owners, 19,000 cat owners, 1,300 bird owners, and 82,000 non-pet owners. To control for the influence of non-animal-related extraneous health-related variables, the data was statistically adjusted for factors such as age, frequency of smoking and drinking, race, and physical activity.



Source: Graph by Hal Herzog

The Results

Pet owners will be glad to know that Garcia's team found no evidence that pet ownership was associated with overall rates of cancer in women. Nor was pet-owning significantly linked with any of the nine specific types of cancers. After adjusting for age, the researchers did find that the cat owners were 15% more likely to have developed lung cancer, but cat owners were also 29% less likely to have contracted endometrial cancer. Even these relationships, however, were not "statistically significant." This means it is likely that the findings were spurious and simply due to random chance.

Some problematic findings, however, did emerge in the research. Compared to non-pet owners, the women living with animals:

- got less exercise,
- smoked more cigarettes,
- and, if they lived with dogs or birds, had higher BMIs.

The finding that dog owners exercised less and had higher BMIs than non-pet owners is important and puzzling. It has been claimed that a getting a dog will cause you to lose weight –

if you walk your pet regularly. (See for example, [this report](#) by the Human Animal Bond Initiative). But Garcia and his colleagues found that dog owners were actually *less* likely to be physically active than non-pet owners. These results suggest that in the real world of older adults, living with a dog does not usually translate into getting more exercise, and hence, weight loss.

Why This Study Is Important: The Good News

The good news is that there is no evidence that living with a pet causes cancer. This study is the first large scale epidemiological investigation of whether living with an animal is associated with an increased risk of developing cancer. The vast majority of studies demonstrating the positive impacts of interacting with animals on human health and [happiness](#) are statistically “under powered.” This means they have too few subjects to produce valid results, (See [Are the Results of Animal Therapy Studies Unreliable?](#)) Because Garcia’s study involved more than 40,000 women who owed pets and 82,000 who did not, the researchers would have been able to detect even minute differences in cancer rate between these groups.

The Bad News: The Benefits of Dog-Walking In Older People Are Questionable.

Unlike previous studies which had fewer subjects, Garcia’s big data research found dog ownership did not facilitate physical activity or weight loss in older women. Indeed, the pet owners got *less* exercise than people not living with animals. This result is similar to a [2015 study](#) on dog walking in post-[menopausal](#) women by the same research group. It also used the Women's Health Initiative data base and involved 36,984 dog owners and 115,645 non-owners. The researchers found that the total daily physical activity was LOWER in the dog owners than non-dog owners. More puzzling was the finding that among older women, walking your dog may well lead to LESS exercise. A possible explanation of this apparent paradox is the effect that dogs can have on walking styles.

It turns out that the dog-walkers in the study tended to engage in casual strolling whereas non-dog walkers were more likely to walk at faster clip.

Who knew?