

## Studying Dogs That Had Longevity, Guess What Was Found?

In studies of more than one breed, they found these commonalities between breeds. So it likely has implications for your dog of any breed. Despite its 'go-to' reputation, it's linked to early death, as well as storm phobias, separation anxiety, and malignant growth. Do this instead.

Analysis by Dr. Karen Shaw Becker

### STORY AT-A-GLANCE

- A new study of German Shepherd Dogs adds to a growing body of research on the damaging effects of spaying and neutering on dogs
- Earlier studies on other breeds, including Rottweilers, Golden Retrievers, and Vizslas, suggest that desexing can dramatically increase the risk for serious diseases and behavioral disorders in these dogs
- When dealing with 100% responsible pet owners, my preference is to leave dogs intact whenever possible to avoid unnecessary risks of anesthesia. When pets must undergo a sterilization procedure, I advocate an alternative procedure to a full spay or neuter that spares the gonads and ovaries, which produce hormones essential to good health
- Ovary sparing spays are equally as effective as traditional spays at preventing unwanted litters, but they are less invasive and eliminate the risk of endocrine damage
- Veterinary schools need to teach less damaging sterilization methods to students, as research shows our current surgical approach to controlling unwanted pregnancies can permanently affect dogs in negative ways. In addition, the surgical technique used by high volume spay clinics and shelters to sterilize very young dogs could easily be updated to a less damaging technique, while still accomplishing the goal of preventing unwanted litters

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There is a growing body of evidence — including new research on German Shepherd Dogs (which I'll discuss shortly) — that indicates spaying or neutering, in particular as it relates to large breed dogs desexed early in life, significantly increases the risk of serious health problems.

### Ovary Removal in Rottweilers Increases Major Fatal Disease

In 2009, a Gerald P. Murphy Cancer Foundation study found a correlation between the age at which female Rottweilers are spayed and their lifespan.<sup>1</sup> The study compared female Rotties who lived to be 13 or older with a group who lived the expected lifespan of about 9 years.

According to lead researcher Dr. David J. Waters, a professor in the Department of Veterinary Clinical Sciences (VCS) at Purdue University:

*"Like women, female dogs in our study had a distinct survival advantage over males. But taking away ovaries during the first [four] years of life completely erased the female survival advantage.*

*We found that female Rottweilers that kept their ovaries for at least [six] years were [four] times more likely to reach exceptional longevity compared to females who had the shortest lifetime ovary exposure."*<sup>2</sup>

Because death from cancer is so prevalent in Rotties, researchers conducted a subgroup analysis of only dogs that did not die of cancer. This focused research further proved the strong association between intact ovaries and longevity.

Even in dogs that did not die of cancer, the females who kept their ovaries the longest were nine times more likely to achieve exceptional longevity (13+ years). Simply put, study results indicate removal of a Rottweiler's ovaries significantly increases the risk for a major lethal disease.

## **Did You Know That in Europe, Intact Dogs Are the Norm?**

A more recent study conducted at the University of California (UC), Davis provides additional evidence that spaying or neutering, and the age at which it is done, may increase a dog's risk of certain cancers and joint diseases.

The U.S. takes a very different approach to spay/neuter compared to many European countries. In this country, not only are most dogs spayed or neutered, increasingly the preferred timing of the procedure is before the animal is a year old.

The motivation for desexing is pet population control, and owners are considered responsible only if their pet has been sterilized. However, in many European countries, dogs remain intact and animal health experts do not promote spaying or neutering. The UC Davis study was undertaken, according to the researchers because:

*"Given the importance of gonadal hormones in growth and development, this cultural contrast invites an analysis of the multiple organ systems that may be adversely affected by neutering."*<sup>3</sup>

## **In Desexed US Goldens: Higher Joint Disease and Tumor Rates**

The researchers looked at the health records of 759 Golden Retrievers. Goldens were chosen because they are one of the most popular breeds in the U.S. and Europe, are often used as service dogs, and are also susceptible to various cancers and joint disorders.

The intent of the study was to investigate the effects of neutering on the risks of several diseases in a single breed of dog, distinguishing between males and females, and between dogs that had been neutered or spayed early (before one year), late (after one year), or not at all.

The dogs ranged in age from 1 to 8 years and had been seen at the UC Davis William R. Pritchard Veterinary Medical Teaching Hospital for one or more of the following problems:

- Hip dysplasia (HD)
- Cranial cruciate ligament (CCL) tear
- Lymphosarcoma (LSA)

- Hemangiosarcoma (HSA)
- Mast cell tumor (MCT)

The researchers focused on joint disorders and cancers because desexing removes the testes or ovaries and disrupts production of hormones that play an important role in body processes like bone growth plate closure.

Study results indicated that for all five diseases, the rates were significantly higher in both males and females that were neutered or spayed (before or after one year of age) compared with intact dogs.

Of special concern was that results showed a 100% increase in the rate of hip dysplasia in male Golden Retrievers neutered before 12 months of age.

Ten percent were diagnosed with the condition, which was double the rate of occurrence in intact males. Past studies have reported a 17% increase among all neutered dogs compared to all intact dogs.

The UC Davis researchers suggest that neutering male Golden Retrievers well beyond puberty will help prevent an increased risk of hip dysplasia, cranial cruciate ligament injury, and lymphosarcoma. For female Golden Retrievers, the research team concluded that:

*"... [T]he timing of neutering is more problematical because early neutering significantly increases the incidence rate of CCL from near [zero] to almost 8 percent, and late neutering increases the rates of HSA to 4 times that of the 1.6 percent rate for intact females and to 5.7 percent for, which was not diagnosed in intact females."<sup>4</sup>*

## **Spaying/Neutering Linked to High Tumors, Behavior Risk in Study**

A 2014 study of Vizslas included over 2,500 dogs and revealed that dogs neutered or spayed at any age were at significantly increased risk for developing mast cell cancer, lymphoma, all other cancers, all cancers combined, and fear of storms, compared with intact Vizslas.<sup>5</sup>

Dogs of both genders neutered or spayed at 6 months or younger had significantly increased odds of developing a behavioral disorder, including separation anxiety, noise phobia, timidity, excitability, submissive urination, aggression, hyperactivity, and/or fear biting.

When it came to thunderstorm phobia, all neutered or spayed Vizslas were at greater risk than intact Vizslas, regardless of age at neutering. The younger the age at neutering, the earlier the age at diagnosis with mast cell cancer, cancers other than mast cell, hemangiosarcoma, lymphoma, all cancers combined, a behavioral disorder, or fear of storms.

Spayed female Vizslas had a nine times higher incidence of hemangiosarcoma compared to intact females, regardless of when spaying was performed, however, no difference in incidence of this type of cancer was found for neutered vs. intact males. Neutered and spayed dogs had 4.3 times higher incidence of lymphoma, regardless of age at time of neutering, and a five times higher incidence of other types of cancer.

Spayed females had 6.5 times higher incidence of all cancers combined compared to intact females, and neutered males had 3.6 times higher incidence than intact males. The Vizsla researchers concluded:

*"Additional studies are needed on the biological effects of removing gonadal hormones and on methods to render dogs infertile that do not involve gonadectomy."*<sup>6</sup>

## **Early Desexing Triples Joint Disorder Risk in German Shepherds**

As I mentioned earlier, another very recent study was conducted at UC Davis, this time involving German Shepherds Dogs (GSDs). The study results suggest that spaying or neutering before 1 year of age triples the risk of joint disorders, in particular cranial cruciate ligament tears, in these dogs.<sup>7</sup>

The researchers analyzed the veterinary records of 1,170 GSDs, both neutered or spayed and intact, for a 14.5-year period. They looked for joint disorders and cancers already linked to desexing, and separated the dogs into categories that included intact, desexed before 6 months, between 6 and 11 months, and between 12 and 23 months.

The study found that 7% of intact males were diagnosed with one or more joint disorders compared with 21% of males neutered prior to 1 year of age. Five percent of intact females developed joint disorders, compared with 16% of females spayed before 1 year.

Intact female GSDs were found to develop mammary cancer at a rate of 4%, compared with less than 1% of females spayed before 1 year. Intact females had no diagnosed incidence of urinary incontinence, compared with 7% of females spayed before 1 year. According to lead researcher Dr. Benjamin Hart of the UC Davis School of Veterinary Medicine:

*"Debilitating joint disorders of hip dysplasia, CCL and elbow dysplasia can shorten a dog's useful working life and impact its role as a family member. Simply delaying the spay/neuter until the dog is a year old can markedly reduce the chance of a joint disorder."*<sup>8</sup>

## **My Preference Is to Sterilize, Not Desex**

Since simply delaying a spay or neuter until a dog is older doesn't address all the health challenges we see in desexed versus intact pets, I like the Vizsla researchers' conclusion above that we need to investigate alternative methods of sterilizing dogs that do not involve removing the ovaries or testes.

As I explain in this [\*\*video\*\*](#), over the years I've changed my view on spaying and neutering dogs, based not just on research studies, but also on the health challenges faced by so many of my canine patients after I spayed or neutered them. These were primarily irreversible metabolic diseases that appeared within a few years of a dog's surgery.

These days I work with each individual pet owner to make decisions that will provide the most health benefits for the dog. Whenever possible, I prefer to leave dogs intact. However, this approach requires a highly responsible pet guardian who is fully committed to and capable of preventing the dog from mating (unless the owner is a responsible breeder and that's the goal).

My clients are incredibly responsible and educated. I've never had a single unplanned pregnancy in my veterinary career. But I realize I'm not providing medical care to the entire world, and the world is full of irresponsible people.

My second choice is to sterilize without desexing. This means performing a procedure that will prevent pregnancy while sparing the testes or ovaries so they continue to produce hormones essential for the dog's health. This can be done at any age, and could easily replace the current standard of desexing by high volume spay/neuter clinics and

shelters around the country.

This typically involves a vasectomy for male dogs, and a modified spay for females. The modified spay removes the uterus while preserving the hormone-producing ovaries. This procedure is less invasive, requires shorter time under anesthesia, and yields the same results with no negative side effects.

## The Problem of Homeless Pets

I want to emphasize that I'm not advocating the adoption of intact shelter animals to people who may or may not be responsible pet parents. Shelter veterinarians don't have the time or resources to build a relationship with every adoptive family, so the animals they care for must be sterilized prior to adoption to prevent more litters of unwanted pets.

I would certainly prefer that shelter vets sterilize rather than spay or neuter homeless pets to preserve their sex hormones. However, currently the U.S. shelter system can't accommodate alternative sterilization procedures, nor are veterinarians in this country routinely trained in how to perform anything other than full spays and neuters. So while I totally agree with the need to sterilize shelter pets, I don't necessarily agree with the method of sterilization being used.

## Sources and References

[dvm360 May 26, 2016](#)

<sup>1</sup> [Aging Cell, December 2009](#)

<sup>2</sup> [dvm360, December 5, 2009](#)

<sup>3,4</sup> [Torres de la Riva et al. \(2013\) Neutering Dogs: Effects on Joint Disorders and Cancers in Golden Retrievers. PLoS ONE](#)

<sup>5,6</sup> [Zink, MC et al, Journal of the American Veterinary Medical Association, February 1, 2014, Vol. 244, No. 3, pp 309-319](#)

<sup>7</sup> [Hart, B et al. \(2016\), Neutering of German Shepherd Dogs: associated joint disorders, cancers and urinary incontinence. Veterinary Medicine and Science](#)

<sup>8</sup> [dvm360, May 26, 2016](#)

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