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Dog Tips

Early Neutering: We'll Call This Myth Busted

A myth so widespread, you'd think it was backed by hundreds of studies. But nothing could be further from the truth. So if you're making a hurry-up decision based on this 'fact', slow down and think twice because your pet's health could hang in the balance.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- Spaying female dogs at a young age, especially before their first estrus cycle, has long been hailed as a method of eliminating or reducing the risk of mammary neoplasia (breast cancer). In fact, most animal welfare organizations and veterinarians are quick to list breast cancer prevention as one of the many benefits of early spaying
- But what is the science behind this assertion? As it turns out … there isn't much. A study conducted by the Royal Veterinary College in the U.K. points to a lack of hard evidence of a link between spaying/early spaying and a reduction in mammary tumors in female dogs
- The U.K. study was a systematic review based on internationally recognized Cochrane Review guidelines used in human medicine. The results of the systematic review point to the need for similar high-quality research in veterinary medicine
- Pet owners are entitled to know the risks and benefits of any procedure performed on their furry charges. In this instance, a widely promoted benefit of spaying/early spaying may not offer the level protection from breast cancer dog owners have been led to believe
- Spay/neuter decisions by individual pet owners should be based on a holistic approach to the animal's health and quality of life

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If you Google the term "benefits of spaying," you'll get tens of thousands of results, many of which list protection against mammary neoplasia (breast cancer) as a benefit of early spaying of female dogs. In fact, according to well-known resource Petfinder.com:[1]

> *"Spaying before the first heat virtually eliminates the development of breast cancer later in life for both dogs and cats. (If the surgery is performed when the animal is older, this benefit will be lost.)"*

And the ASPCA[2] says this:

> *"Females spayed prior to their first estrus cycle have a significantly reduced risk of developing mammary cancer, a common cancer in unspayed females. The chances of developing this cancer increase if a female isn't spayed until after her second heat cycle, but they still remain lower than the risk for unspayed females.*

> *So if your dog has already gone through her first heat cycle, it's not too late. Spaying her will still reduce her risk of developing cancerous mammary tumors.*"

According to Clinician's Brief, a majority of veterinarians recommend spaying, and about 16% encourage performing the procedure before the first estrus cycle in order to receive the alleged added benefit of protection against mammary tumors.

Under the circumstances, it would seem there must be ample scientific evidence that spayed female dogs, and especially those spayed before their first estrus cycle, have less incidence of breast cancer … right?

Not so Fast! What Evidence Supports the Link Between Spaying and Reduction in Mammary Tumors?

Results of a study published last year in the Journal of Small Animal Practice[3] were unable to validate the theory — a theory that is widely assumed to be a fact — that early spaying protects female dogs from mammary neoplasia.

The study was a systematic review conducted by members of the Veterinary Epidemiology and Public Health Group of the Royal Veterinary College in the U.K. A systematic review is an examination of several studies for the purpose of summing up the best available research on a particular subject. For the study, peer-reviewed analytic journal articles in English were eligible and were assessed for risk of bias by two reviewers independently.

The objective of the study was to evaluate the quantity and veracity of evidence that spaying, or the age at which a dog is spayed, has an effect on the risk of mammary tumors.

There were over 11,000 search results on the subject, of which 13 were English-language, peer-reviewed reports focused on the link between spaying/age of spay and mammary tumors. Of those 13, nine were deemed to have a high risk of bias, and the remaining four had a moderate risk of bias. (For more information on how bias was assessed and how the researchers screened the results, the full study can be found **here**.)

Of the four moderate-risk-of-bias studies, one found a link between spaying and a reduced risk of mammary tumors, two found no evidence of a link, and one suggested "some protective effect," but no specific details were offered. The Royal Veterinary College reviewers concluded that:

> "*Due to the limited evidence available and the risk of bias in the published results, the evidence that neutering reduces the risk of mammary neoplasia, and the evidence that age at neutering has an effect, are judged to be weak and are not a sound basis for firm recommendations.*"

Simple translation: the idea that spaying, and early spaying of a female dog before her first estrus cycle, removes or reduces her risk of breast cancer is at the present time a theory rather than a fact.

The methodology used in the U.K. study was based on Cochrane Review guidelines, which are internationally recognized for their high standards in evidence-based medicine for humans. According to Dr. Ann Hohenhaus, a veterinary oncologist, results of this study highlight the need for quality research in veterinary medicine. Dr. Hohenhaus goes on to say:

> *"Despite lack of evidence found to support early spaying as preventing mammary tumors, veterinarians may continue to recommend it to prevent estrus cycles, unwanted litters, and pyometra. Clinical experience may suggest that early spaying decreases the risk of mammary tumors, but without additional well-designed trials, scientific evidence to support this is lacking."*

Spay/Neuter Decisions Should Be Based on Your Pet's Health and Quality of Life

For the record, I'm not advocating leaving female dogs intact indefinitely, nor am I suggesting dogs should not under any circumstances be spayed or neutered at a young age.

My goal with regard to pet sterilization is simply to provide information to pet owners about the risks, since there is much information readily available about the benefits. In this case, where early spaying has been widely promoted as a way to prevent mammary tumors in female dogs, in light of the findings of the U.K. systematic review, I feel compelled to let pet owners know there is scarce scientific evidence available to back up that widely held belief.

If your dog is not yet spayed or neutered, I can offer some general recommendations for timing of the procedure:

- Your dog should be old enough to be a balanced individual both physically and mentally. For the majority of dogs, this balance isn't achieved until a dog has reached at least one year of age. Although some breeds reach maturity faster than others, many giant breed dogs are still developing at two years of age.
- Other considerations include your dog's diet, level of exercise, behavioral habits, previous physical or emotional trauma, existing health concerns, and overall lifestyle. If your pet is emotionally balanced (has no behavior problems) consider investigating a vasectomy or tubal ligation instead.
- I encourage you to learn all you can about surgical sterilization options and the risks and benefits associated with each procedure.

Sources and References

Clinician's Brief January 2013

[1] Petfinder.com

[2] ASPCA.org

[3] Journal of Small Animal Practice, Volume 53, Issue 6, pages 314-322, June 2012