

# Ideal Timing for Spaying or Neutering of Popular Dog Breeds

By Dr. Karen Shaw Becker

Scientific evidence has already established that a handful of large dog breeds have a higher risk of developing certain types of cancer and joint disorders after spaying or neutering, especially if they are desexed before one year of age. Thanks to the recently published results of a 10-year study, we now have that data for many more breeds — 35, to be exact:

Australian Cattle Dog	Bulldog	Doberman Pinscher
Labrador Retriever	Pug	Australian Shepherd
Cavalier King Charles Spaniel	English Springer Spaniel	Maltese
Rottweiler	Beagle	Chihuahua
German Shepherd Dog	Miniature Schnauzer	Saint Bernard
Bernese Mountain Dog	Cocker Spaniel	Golden Retriever
Pomeranian	Shetland Sheepdog	Border Collie
Collie	Great Dane	Poodle-Miniature
Shih Tzu	Boston Terrier	Corgi (both types combined)
Irish Wolfhound	Poodle-Standard	West Highland White Terrier
Boxer	Dachshund	Jack Russell Terrier
Poodle-Toy	Yorkshire Terrier	

## Risks Associated with Desexing Are Highly Dependent on Breed

The study,<sup>1</sup> conducted by veterinary researchers at the University of California, Davis, suggests that vulnerability (health problems) from neutering varies tremendously from one breed to the next.

"There is a huge disparity among different breeds," lead study author Benjamin Hart, distinguished professor emeritus at the UC Davis School of Veterinary Medicine, said in a news release. "Some breeds developed problems, others didn't. Some may have developed joint disorders but not cancer or the other way around."<sup>2</sup>

According to Hart, there's no "one size fits all" when it comes to health risks and the age at which a dog is neutered or spayed, and I couldn't agree more.

## Age at Desexing Doesn't Appear to Affect Risk Level

The UC Davis researchers analyzed 15 years of data from thousands of dogs who were seen each year at the university's Veterinary Medical Teaching Hospital. They looked for joint disorders including elbow and [hip dysplasia](#) and cranial cruciate ligament tears, as well as cancers including lymphoma, hemangiosarcoma, mast cell tumors, and osteosarcoma.

The study results suggest that for most of the 35 breeds, the risk of developing problems was not affected by the age at which spaying/neutering was performed. The risk for joint disorders was found to be related to body size.

As you might guess, smaller breeds typically don't develop the problem, but a majority of larger breeds do — with two surprising exceptions: Great Danes and Irish Wolfhounds. Neither of these giant breeds showed an increased tendency to joint disorders, no matter the age of desexing.

Another finding was that the incidence of cancer in smaller dogs, both desexed and intact, was low, again, with two exceptions. In both Boston Terriers and Shih Tzus, spaying/neutering was associated with a significant increase in cancer.

Interestingly, the sex of the dog made a difference in some cases. Female Boston Terriers spayed at six months had no increased risk of joint disorders or cancers compared with intact females; however, the males neutered before one year of age had a significantly increased risk.

A previous UC Davis study found that [spaying female Golden Retrievers at any age increases the risk of one or more cancers from 5% to up to 15%](#).

## 'Society's Expectations' Should Not Dictate When to Neuter

According to the UC Davis researchers, there are at least two major limitations to their study:

*"First, relatively few breeds are covered compared to those included in the various breed registries of kennel clubs and canine organizations. This limitation was necessary so as to apply*

*the same diagnostic criteria for diseases covered across all breeds, using the same database, and the necessity of having sufficient cases for analyses.*

*Second, no information is available as to the reasons the owners or others chose to neuter, or not to neuter their dogs. In California, the vast majority of dogs are neutered, and since 2005 it is legally required for dogs to be neutered prior to adoption from an animal shelter or humane society; many breeders impose the same requirement."*

I would add a third caveat: the study covers just a few joint disorders and cancers that occur in dogs; there are several additional health conditions linked to desexing, and [behavioral issues](#) as well.

In the U.S., spaying and neutering dogs is considered the right thing to do to prevent pet overpopulation and all associated problems, and desexing procedures are typically performed before the age of six months. This study puts the brakes on automatic, across-the-board, early-age spaying and neutering, and instead suggests that dog parents carefully consider when and if they should have their pet desexed.

*"We think it's the decision of the pet owner, in consultation with their veterinarian, not society's expectations that should dictate when to neuter," said Hart. "This is a paradigm shift for the most commonly performed operation in veterinary practice."*

You can find a chart with the study's suggested guidelines for age of neutering of the 35 breeds [here](#); the full study is [here](#), and contains more information for each of the breeds. Another study by the same authors is "in press" (accepted for publication) that will provide the same type of data-based information, but for mixed breed dogs.

## **My Sterilization Recommendations for Dogs**

My approach is to work with each pet parent to make decisions that will provide the most health and behavioral 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).

It's important to note that I'm not advocating the adoption of intact shelter animals to people who may or may not be responsible pet owners. Shelter veterinarians don't have the time or resources to build a relationship with every adoptive family, so the animals in their care must be traditionally spayed and neutered (until shelter vets learn different techniques) prior to adoption to prevent more litters of unwanted pets.

My second choice is to sterilize without desexing so the testes or ovaries can continue to produce hormones essential for the dog's health and well-being. This can be accomplished through vasectomy and hysterectomy (which removes the risk of pyometra).

Rarely, older, intact male dogs develop moderate to severe [benign prostatic hyperplasia](#) (an enlarged prostate) that may be improved with conventional neutering. Intact females can also be at risk of [pyometra](#) as they age. Generally speaking, mature intact dogs have had the benefit of a lifetime of sex hormone production, so the endocrine imbalances we see with spayed or neutered puppies don't occur when dogs are desexed in their later years.

Currently, veterinary schools in the U.S. only teach full spays and neuters, so unless your own vet has obtained additional training in sterilization techniques that spare the ovaries or testicles (which is unlikely), you may have only one surgical option available to sterilize your pet.

In this case, my suggestion would be to wait until your dog has reached full musculoskeletal maturity, and if you have a female, I'd also wait until she's completed her second estrus cycle before scheduling the surgery.

If you'd like the Association of American Veterinary Colleges to teach vet students alternative sterilization surgical techniques, you can email this suggestion to them [here](#), or to the Canadian Veterinary Medical Association [here](#). For a list of veterinarians who practice alternatives techniques, click [here](#).

- [ScienceDaily July 15, 2020](#)
- <sup>1</sup> [Hart, B.L. et al. Front. Vet. Sci., 07 July 2020](#)
- <sup>2</sup> [UC Davis. July 15, 2020](#)