

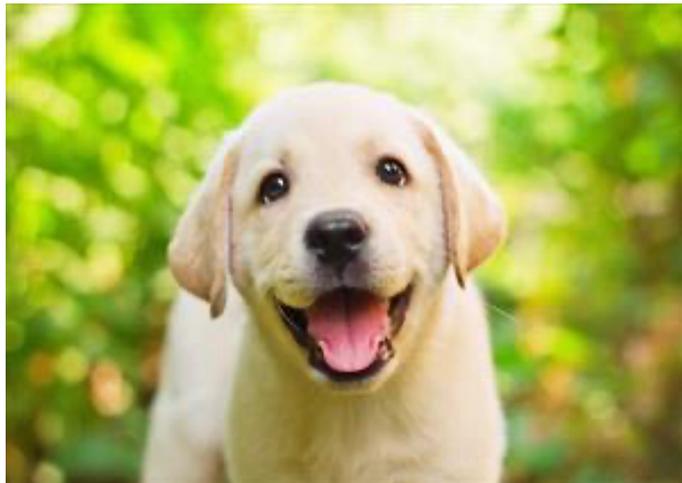
Effects of Spay and Neuter Timing on Cancer in Dogs

Heather Howell, LVT, RVT, MBA

Revised: October 25, 2024

Published: December 29, 2020

Even though veterinary recommendations for spaying and neutering pets have become common and there is a lot of information available about its benefits, you may have questions or concerns about how it could affect your dog long term. You may also wonder if there is a correct age for spaying and neutering since recommendations seem to vary. This issue has been studied but there are no general recommendations because the decision is based on multiple factors. Here we explore the issues and emphasize that it is always best to consult your veterinarian regarding the best timing for your individual pet.



Decreased Mammary Cancer

Besides the behavioral benefits seen with spaying and neutering, most studies cited for spaying dogs before their first heat emphasize the decreased risk of mammary gland tumors (both benign and malignant cancers). Several studies have concluded that female dogs are significantly less likely to develop mammary tumors when they are spayed and timing of the surgery relative to the dog's age makes a difference. The most protective effects were found with female dogs spayed prior to their first heat.

Other Cancers

On the other hand, there have been studies cited that discuss increased risk of other cancers when dogs are spayed young. These studies were done on a small number of relatively young dogs. Since the average age of diagnosis for mammary tumors is over 8 years, studies that looked at rates in younger dogs were unlikely to show the true incidence. These studies also examined the risk of other cancers developing, but they may have falsely exaggerated a non-existent effect, since studies with a relatively small group size are much more likely to be affected by chance. Another study found that age, not sexual status or timing of desexing, determined the probability of Golden Retrievers dying from cancer.

This topic is complicated since the evidence is still inconsistent and contradictory from study to study. As a pet owner, you may be looking for concrete statements for or against desexing your pet, or regarding the timing of desexing. Various cancers have seemed more prevalent in desexed animals in some studies, but not in others, which makes it difficult to give concrete, unbiased recommendations. For example, the risk of osteosarcoma, mast cell tumor, lymphoma, urogenital cancer, and hemangiosarcoma may (or may not) increase when dogs are desexed prior to one year. Most of these studies are small (which can lead to inaccurate results) and many of the studies with these conclusions did not control for breeds predisposed to cancers, which they and others have identified as independent risk factors.

Breed Specific Spay/Neuter Age Guidelines

An analysis of multiple breeds was done by Hart and colleagues at UC Davis in 2020, and breed-specific guidelines for spay/neuter age were published. Critics of the breed-specific guidelines for spay/neuter age found the study to be problematic based on their methods, groupings, and means of applying analysis differently to different breeds. Although suggested guidelines for age of desexing of each breed examined were provided, the study did conclude that in most breeds examined, the risk of developing problems was not affected by age of neutering.

Spayed/Neutered Dogs and Lifespans

After reading this, you may be concerned that neutering or spaying your dog will cause long-term problems. However, it is important to note that multiple studies have looked at the impact of desexing on mortality from all causes and determined that desexed male and female dogs actually do have slightly longer median lifespans than their intact counterparts. Intact females had shorter lifespans than all other genders, and spayed females lived the longest. Even in a study that specifically looked at Golden Retrievers diagnosed with cancer, the spayed females lived longer than intact females.

The best timing for spaying or neutering your pet may depend on other factors specific to your situation, such as your dog's behavioral tendencies (roaming, marking, aggression), environmental factors (housing, fencing, space), and the legal requirements of the jurisdiction where you live. This continues to be an evolving topic with many considerations. The World Small Animal Veterinary Association (WSAVA) issued reproductive control guidelines in 2024 that challenged traditional thinking regarding spaying and neutering and prompted varied reactions from veterinarians, particularly in the sheltering community. **As with any medical decision, your best resource for determining the appropriate timing of spaying/neutering is your pet's veterinarian.**

URL: <https://veterinarypartner.vin.com/doc/?id=10002077&pid=19239fd8bee9b-ecd8-4566-8f12-f3c5134c6f35.1767510810>

The content of this site is owned by Veterinary Information Network (VIN®), and its reproduction and distribution may only be done with [VIN®'s express permission](#).

The information contained here is for general purposes only and is not a substitute for advice from your veterinarian. Any reliance you place on such information is strictly at your own risk.

Links to non-VIN websites do not imply a recommendation or endorsement by VIN® of the views or content contained within those sites.