



## **Veterinary Village LLC/ICSB-WI**

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## Is a vasectomy or ovary sparing spay right for my dog?

Your decision to spay or neuter your pet must be made on a case-by-case basis. This decision should be made between you and your veterinarian, taking into consideration your pet's age, breed, sex, health status, intended use, household environment and temperament. While there are health benefits to spaying and neutering, the benefits must be weighed against the health benefits of retaining the sex hormones achieved by leaving your pet intact (not neutered or spayed). These advantages and disadvantages pertain not only to the canine athlete or performance dog, but to all dogs regardless of lifestyle. Each patient must be considered individually – we do not have a one-size-fits-all answer for whether it is best to remove or not remove the gonads (testes or ovaries) for your pet.

If you have determined you do not plan to breed your dog, male or female, you are now faced with other decisions.

- 1. Do I have another option besides a neuter or spay? What is a vasectomy? What is an ovary sparing spay?***
- 2. If you chose surgery, at what age should you "alter" your pet?***
- 3. Should you opt for a traditional neuter or spay?***
- 4. What are the advantages of retaining the testes or ovaries?***
- 5. What are the disadvantages of retaining the testes or ovaries?***



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Female Procedure	Removes	Leaves	Hormones maintained	Heat cycle Fertile	Pyometra (uterine infection)
<b>Ovary Sparing Spay (OSS) (Hysterectomy)</b>	Uterus. Cervix and 1 ovary may also be removed depending on practitioner	At least one ovary	Yes	Has a heat cycle and may have bloody vaginal discharge.  Fertile - No	No
<b>Tubal ligation</b>	Removes a portion of the oviducts	Ovaries uterus, cervix	Yes	Yes Not fertile	Yes
<b>Ovariectomy</b>	Ovaries only	Uterus and cervix	No	No/No	No
<b>Ovariohysterectomy (Traditional Spay)</b>	Ovaries and uterus	Part of uterus and cervix	No	No/No	No

Male Procedure?	Removes?	Leaves?	Hormones maintained?	Fertile?
<b>Vasectomy</b>	Part of vas deferens	Testicles	Yes	No (2 months after the procedure)
<b>Zinc Neuter (Zeuterin)</b>	Nothing. Injection modifies structures within the testicles	Testicles	Yes, but reduced by 49-52%	No
<b>Castration (Traditional Neuter)</b>	Testicles		No	No

**1. *What is a vasectomy? What is an ovary sparing spay?***

A vasectomy is a surgical procedure where a portion of the vas deferens, the tube that carries sperm from the testicle where they are formed, to the outside to fertilize the female, is removed. By doing this, even if the male dog mates with a female, the mating will not be a fertile one. The testicles remain in the scrotum and continue to produce testosterone. The male will still be interested in and can mate with females, may still lift his leg to mark territory, is still prone to benign prostatic hypertrophy, and could develop a testicular tumor, perianal tumor, or perineal hernia.

An ovary sparing spay is when one or both ovaries are left in the abdomen, near the kidneys, but the uterus and cervix are removed. Because the uterus is removed, the female will not be able to become pregnant, even if a mating occurs. The female will still have heat cycles and be attractive to male dogs. She will have little to no bloody vaginal discharge during her heat cycles.

**2. *If you chose surgery, at what age should you “alter” your pet?***

If you opt for a non-traditional approach, the vasectomy or ovary sparing spay, when you leave the testes or ovaries but interrupt the reproductive tract to prevent fertility, you may consider doing this at any age. Because the male or female sex organs are left to function, your dog will still have his or her hormones. Research has shown that there can be positive effects of the sex steroid hormones. The sex steroids are hormones produced by the ovaries and testes, and are only present in intact males and females. For canine athletes, Dr. Christine Zink recommends waiting until after 14 months of age (the age at which the growth plates have closed) for males and females to be neutered or spayed.

**3. *Should you opt for a traditional neuter or spay? At what age?***

If you opt for a traditional neuter or spay, the age at which this is done is important. Removing the testes or ovaries interrupt the hormonal axis of the sex hormones with the pituitary and other organs. There are age-related conditions to consider when making this decision. Since gonadectomy prior to puberty or sexual maturity may make the risks of some diseases higher in certain breeds or individuals, the option to leave your pet intact should be available to you. If you opt to leave the gonads, the testes or ovaries, this can be done at any age, as young as 8 weeks of age. If you opt to remove the gonads, testes or ovaries, the

age should be decided in a conversation with you and your veterinarian. Many times, we recommend waiting until at least 6 months of age, or older, usually past puberty, due to health and behavioral advantages.

**4. What are the advantages of retaining the testes or ovaries?**

The advantages of remaining intact include:

Health Advantages	
	1. Lower incidence of hemangiosarcoma (cancer usually found in the spleen or heart) in males and females.
	2. Lower incidence of osteosarcoma (bone cancer) in intact male and females.
	3. Lower risk of transitional cell carcinoma (bladder cancer) in intact male and females.
	4. Lower risk of prostatic adenocarcinoma (prostate cancer) in intact male dogs compared to neutered male dogs.
	5. Lower incidence of obesity in intact male and female dogs, which may be due at least partly to increased metabolic rate.
	6. Lower incidence of urinary incontinence in intact females (equivocal if females are spayed after 5 months but before their first heat).
	7. Lower incidence of urinary tract infection in intact females.
	8. Lower incidence of autoimmune thyroiditis and hypothyroidism in intact male and females.
	9. A reduced incidence of cranial cruciate rupture in intact male and females.
	10. A reduced incidence of hip dysplasia in male and female dogs that are not neutered or spayed before 5 months of age.
	11. Anesthesia and surgery are not appropriate for some patients with high risk medical conditions.
	12. Lower incidence of adverse reactions to vaccines in intact males and females.
	13. Evidence of increased lifespan in females left intact past puberty. <i>David J. Waters, associate director of Purdue University's Center on Aging and the Life Course and a professor in the Department of Clinical Sciences. "Taking away ovaries during the first 4 years of life completely erased the female survival advantage. We found that female Rottweilers</i>

	<i>that kept their ovaries for at least 6 years were 4 times more likely to reach exceptional longevity compared to females who had the shortest lifetime ovary exposure."</i>
Behavioral Advantages	
	1. Less aggression towards people and animals in intact females.
	2. A decreased incidence of cognitive dysfunction in intact male and females.
	3. Less fearfulness, noise phobias and undesirable sexual behaviors in intact males and females.

The sex hormones, by communicating with a number of other growth-related hormones, promote the closure of the growth plates at puberty, so the bones of dogs or bitches neutered or spayed before puberty continue to grow. Dogs that have been spayed or neutered well before puberty can frequently be identified by their longer limbs, lighter bone structure, narrow chests and narrow skulls. This abnormal growth frequently results in significant alterations in body proportions and particularly the lengths (and therefore weights) of certain bones relative to others. This is related to increased orthopedic conditions in dogs neutered or spayed prior to puberty. In addition, sex hormones are critical for achieving peak bone density.

### **5. What are the disadvantages of retaining the testes or ovaries?**

Health Disadvantages	
	1. Increased risk of mammary (breast) cancer in intact females. This increased risk of mammary (breast) cancer occurs with each subsequent cycle and the benefit of spaying does not disappear until the animal reaches old age. Mammary cancer is one of the most common types of cancer in small animals. Mammary neoplasia is malignant under 50% of the time in dogs, but few dogs die from breast cancer due to low metastatic rates and early detection and treatment.
	2. Increased risk of ovarian cancer in intact females. The incidence and mortality risk for ovarian cancer are very low.
	3. Increased risk of testicular cancer in intact males. The incidence for testicular cancer is common but malignancy and mortality are

	very low.
	4. An increased risk of pyometra in intact female dogs and this risk increases with increasing age. Varies by breed – review this with your veterinarian.
	5. Risk of unwanted pregnancies if an OSS or vasectomy is not performed.
	6. An increased risk of prostatitis, benign prostatic hyperplasia, prostatic cysts and squamous metaplasia of the prostate in intact male dogs.
	7. An increased incidence of perineal and inguinal hernia and perineal adenoma in intact male dogs.
Behavioral Disadvantages	
	1. Inter-dog aggression may be due to competition for available territory or availability of cycling animals.
	2. Increased risk of wandering and being hit by a car in intact dogs.
	3. Increased incidence of urinary marking in intact males.
	4. Ongoing sexual behaviors, including heat cycles in females who have had an ovary sparing spay.

**Summary:**

Dr. Villalobos, a well-respected veterinary oncologist states, "*It is earth shattering to consider that some of the cancers we have been battling may have been enhanced by early neutering instead of the reverse.*" Based on the research available, it is clear there are a number of health benefits of the sex steroid hormones. This benefit varies with age, sex, and breed. Therefore, although surgically altering your dog to be unable to breed is the responsible choice for most dogs, it is in the best interest of each individual patient for its veterinarian to assess the risks and benefits of gonadectomy (removing the testes or ovaries versus vasectomy or ovary sparing spay) and to have your veterinarian advise you on what is appropriate for each individual pet at each stage of its life.

Please feel free to discuss this information and ask for advice on making these decisions with our doctors at Veterinary Village.