Should I Consider Hormone-Sparing Sterilization for my Dog?

Going beyond spay/neuter

Spaying and neutering are ways to sterilize dogs so they cannot reproduce. Technically called **gonadectomy,** these procedures involve removal of the testicles from males and the ovaries/uterus from females. Sterilization and other interventions have dramatically reduced pet overpopulation in the U.S.

After being spayed or neutered, dogs lack sex-related hormones (like testosterone and estrogen) that are normally produced by the testicles and ovaries. That's a concern, since hormones are important for growth and development. Recent research has found that **removing a dog's reproductive organs can cause health problems** throughout the animal's body due to the hormone system becoming unregulated. The table below outlines our current understanding of the pros and cons of gonadectomy on dog health.

Why does the loss of hormones cause problems? Sex hormones provide a feedback signal to the brain that reduces the production of luteinizing hormone. Without this feedback signal, the level of luteinizing hormone can become very high and may lead to health problems.

Zwida & Kutzler, 2016.

Impact of spaying and neutering on dog health:

Lowers chance of:	But raises chance of:
Diseases of the sex organs ■ Mammary, ovarian, and testicular cancers ■ Pyometra - infection of the uterus ■ Perineal and inguinal hernias ■ Prostatitis, benign prostatic hyperplasia, prostatic cysts, and squamous metaplasia of the prostate	■ Obesity ■ Urinary incontinence and urinary calculi ■ Immune-mediated diseases: atopic dermatitis, autoimmune hemolytic anemia, hypoadrenocorticism, diabetes mellitus, hypothyroidism, immune-mediated thrombocytopenia, inflammatory bowel disease ■ Hip dysplasia and cranial cruciate ligament rupture ■ Aggressive and fearful behavior, cognitive dysfunction syndrome ■ Cancer: hemangiosarcoma, osteosarcoma, transitional cell carcinoma, prostate adenocarcinoma, lymphosarcoma

Not all dogs have health problems after spaying or neutering

The dog's age at spay/neuter, size, breed, and sex all affect the incidence of such problems. But in some dogs, spaying or neutering can greatly increase the chance of serious health problems like cancers and orthopedic problems. For example:

- Golden Retrievers that were neutered early had twice the chance of hip dysplasia and three to four times the chance of lymphosarcoma and hemangiosarcoma than sexually intact dogs. *de la Riva 2013.*
- Vizslas that had their gonads removed were significantly more likely than sexually intact Vizslas to develop cancer – especially mast cell cancer and lymphoma - and fear of storms. *Zink 2014.*
- Despite common beliefs, spaying or neutering dogs at any age doesn't help to reduce aggression toward familiar people or dogs, and is actually related to an increase in aggression to strangers. *Farhoody 2018.*

But dog lovers are in luck!

There are simple options to sterilize your dog while preserving its natural hormones!

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Hormone-Sparing sterilization options

You have options that maintain normal hormone levels when sterilizing your dog. By discussing your options with a veterinarian, you can determine the best sterilization method for your particular dog and your lifestyle. This individualized approach is recommended by the Society for Theriogenology – specialists in veterinary medicine dealing with reproduction.

Hysterectomy for female dogs (also called ovary-sparing spay or partial spay)

Procedure: Remove the uterus but leave the ovaries. The entire uterus must be removed to ensure that pyometra does not occur.

Health risks: Once the uterus is removed, very few health risks remain. Ovarian cancer is rare, but all dogs should be monitored for mammary (breast) tumors after middle age. A higher incidence of mammary tumors has been reported in poodles, English cocker spaniels, and dachshunds. *Zatloukal, 2005*.

Management: Your dog will still go into heat although she cannot get pregnant. She may show behavioral changes while in heat and will attract males. However, removal of the entire uterus eliminates bleeding.

Vasectomy for male dogs

Procedure: Cutting or tying the vas deferens, which transports sperm. Less invasive than castration.

Health risks: Testicular cancer, perineal hernia, and enlarged prostate may occur later in life but are typically treated via castration, which can be performed as needed.

Management: Although he will be sterile, your dog will continue to have interest in females in heat. He will still have testicles and may appear to be intact when you take him into public spaces.

Identification (marking) for your dog after a hysterectomy or vasectomy

To make it clear that your dog has received a hysterectomy or vasectomy, be sure that your veterinarian provides this simple tattoo in the groin area after surgery:

- **Hysterectomy: Green "X"** slightly lateral to midline near belly button
- **Vasectomy: Green "V"** lateral and cranial to scrotal region

The bottom line: Hormone-sparing procedures can help reduce the risk that your dog will suffer from some serious health problems. However, hysterectomy and vasectomy are appropriate only if you're willing to manage natural dog behavior and monitor your pet's health annually after middle age. It's important that you and your veterinarian discuss the risks and benefits for your dog, as well as proper management, and decide on the best plan for lifelong well-being.

Find more information

Details on hormone-sparing dog sterilization: Parsemus.org/HSS/
Veterinary clinics that offer these services: Parsemus.org/veterinarians

Citations

- de la Riva et al., 2013. bit.ly/3FTrW3E
- Farhoody et al., 2018. bit.ly/3HlimCll
- Society for Theriogenology. bit.ly/3j7k5qx
- Zatloukal, et al., 2005. bit.ly/3BEgw1c
- Zink et al., 2014. bit.ly/3V1PpUN
- Zwida and Kutzler, 2016. bit.ly/3Yr9Bm0

Veterinary Clinic Contact and Services Information

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