

Ovaries and Testes, Oh My!

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Benefits

Why spay/neuter?

- Population control, especially in shelters¹
 - 3 to 4 million cats and dogs are euthanized per year due to overpopulation²
- Reduce any instinctive breeding behaviors (mounting, marking)³
- Ability to house both a male and female in same household without the risk of breeding³
- Some health benefits that may be associated with spaying/neutering
- Prevention of unintended reproduction³
- Decreases roaming behavior by 90% and reduces male aggression by 62%, urine marking by 50%, and mounting by 80%³

Risks of Spay/Neuter

- Surgical risks - complications from surgery range from 2.6% to 20%³
- Neutering can increase risk of developing osteosarcoma³, an aggressive cancer with poor long-term prognosis usually treated with surgery and chemotherapy³
- Spayed females more likely to develop splenic hemangiosarcoma (2 time increase) and cardiac hemangiosarcoma (5 time increase) compared to intact females³
- Neutering increases risk of urinary incontinence⁴
- Spaying increases risk of vaginal infections²
- Orthopedic problems are more likely as growth is influenced by production of sex hormones⁴

Risks of Not Spaying/Neutering

Risks of Not Spaying

- Females can develop mammary tumors if ovaries are not removed³
 - ~50% of canine mammary tumors are malignant.³
 - 85-90% of feline mammary tumors are malignant³
- Pyometra, a bacterial infection, can occur in the uterus³
- Dystocia can be common in cats and dogs (depending on the breed) and may have to undergo C-section (much riskier than a planned spay)³

Risks of Not Neutering

- Prostate disease = benign prostatic hyperplasia³
 - 15-40% for dogs under 7 years³
 - 60-100% for dogs over 7 years³
- Can cause difficulty urinating or defecating or have bloody preputial secretions³
- Prostatitis has been reported in up to 28.5% intact male dogs³

Surgical Procedures

Ovariohysterectomy (Spay):

- Removal of a female dog's reproductive organs (ovaries, fallopian tubes, and uterus)¹
 - An incision is made between the umbilicus and the cranial brim of the pubis²
 - The uterine horn is exteriorized with a spay hook²
 - The ovarian vessels are cut and tied off using hemostat tying²
- A female dog will lose the ability to reproduce and heat cycles will be eliminated¹
- The removal of only the ovaries, known as ovariectomy, is not commonly performed¹

Orchiectomy (Neuter):

- Remove of a male dog's testicles¹
 - A scrotal incision is made over the testicle and the testicle is externalized²
 - A hemostat tie is performed to remove the testicle²
- The male will no longer be able to reproduce¹
- Neutering is also referred to as "castration"¹
- Alternative procedure such as vasectomies, severing the tubes responsible for sperm, are not commonly performed¹

Recovery:

- Keep dog isolated from other animals after surgery¹
- Do not let the dog outside for long periods of time, best if they remain inside¹
- Jumping and running should be kept to a minimum¹
- A recovery cone collar is recommended to ensure the area cannot be licked¹
- Check incision daily to ensure it is healing properly¹
- Dog should not be bathed for at least 10 days following surgery¹
- Watch for any vomiting, diarrhea, lethargy, decreased appetite, uncomfortable, incision is bleeding or redness occurs¹

Cost:

- Low-cost clinic is typically 45-135\$¹
- High-cost can exceed 300\$¹
- Cost is impacted by:
 - Size of animal¹
 - Age of animal¹
 - Whether both testes have descended¹
 - Whether blood work is performed prior to surgery¹

Conclusions

- Spaying/neutering is a controversial procedure
- Pros and cons must be weighed before deciding whether to spay/neuter or not
- Each animal is unique and may differ on a case-by-case basis
- A veterinarian should be consulted to assist in making a decision



Figure 4: Even though these puppies are cute, they contribute to overpopulation

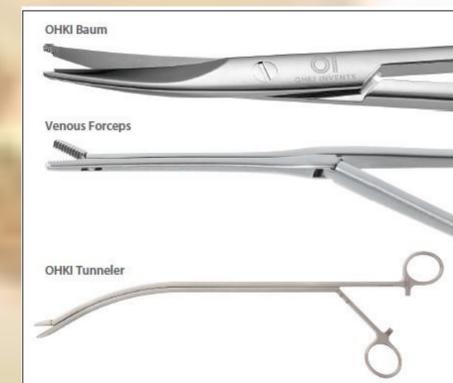


Figure 3: Surgical instruments used for a spay or neuter procedure.

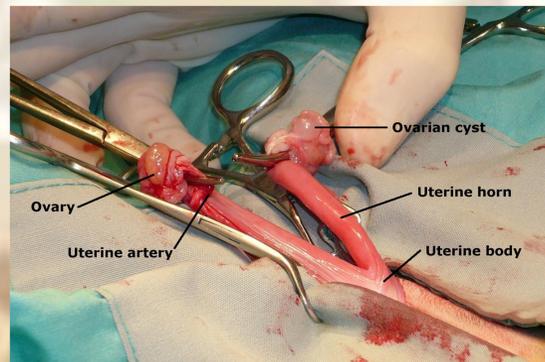


Figure 1: An image of the surgical procedure of Ovariohysterectomy (Spay) in a female dog



Figure 2: An image of the surgical incision of Ovariohysterectomy (Spay) in a female dog

Bibliography

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