

## Spay and Castration 'Alternatives' for Dogs and Cats

We frequently get inquiries about alternative surgical procedures for sterilization of dogs and cats. Because most veterinarians will not consider unconventional surgical procedures and do not appreciate the value of maintaining normal hormone levels, some of these inquiries come from people that live several hours away, or across the country.

For many years, there have been many claims about the health benefits of neutering. We are learning now that there may be distinct health and longevity benefits to maintaining normal hormone levels.

Males and females, dogs and cats, each have unique considerations.

### Male Dogs

Castration or 'neutering' of male dogs involves surgically removing the testicles. This prevents reproduction but also removes the male reproductive hormones – primarily testosterone. Castration minimizes bad male behaviors such as aggression, stubbornness, marking, and roaming. As a result of the changes in hormones, neutered male dogs have a slower metabolism and have a tendency to gain weight. At Veterinary Wellness Center, we generally do not recommend neutering of male dogs unless there are bad male behavior problems that may be modified with altered testosterone levels.

One alternative that is frequently asked about is **vasectomy**. This is a surgical procedure that will prevent reproduction but maintain normal male hormone levels. Vasectomy will not alter male behavior or hormone-dependent problems (perianal hypertrophy, perianal adenomas, prostatitis, aggression, or marking.) The primary situation in which there may be an advantage to this procedure is in the case of a 'non-breeding' agreement with the seller of a pure-bred dog. In this case, it is possible to satisfy the seller that the dog will not be used for breeding and yet enables the dog to maintain the health benefits of the normal male hormones. At Veterinary Wellness Center, we do not recommend surgical intervention to perform a vasectomy unless there is a contractual obligation requiring sterilization of the male dog.

### Female Dogs

The traditional female neutering procedure is called a "spay".

(The word "spay" is a verb originating from the early 15<sup>th</sup> century meaning to "stab with a sword" which is derived from Anglo-French *espeier* "cut with a sword". The noun "spado" was used for a "castrated person" from the Latin *spado*.) <http://www.etymonline.com/index.php?term=spay>

Spaying a female dog is a surgical procedure which traditionally involves removing the ovaries and uterus (ovariohysterectomy). However, recommendations are changing to advocate removing only the

ovaries and leaving the uterus (ovariectomy). Removing the ovaries eliminates the estrus cycle, the risk of pyometra, and the possibility of pregnancy.

There are several options to prevent reproduction in a female dog:

- **Traditional Ovariectomy/Ovariohysterectomy**
  - Removal of ovaries +/- uterus
- **“Tubal ligation”**
  - The oviduct is cut and tied to prevent eggs from fertilization or reaching the uterus. This procedure preserves both the uterus and the ovaries.
  - This option maintains normal hormone levels, but there is risk of pyometra in the future.
- **“Ovary-Sparing Spay”**
  - Interest in this procedure is growing and we receive many inquiries about this option. The uterus is removed (hysterectomy) and the ovaries are not removed. It is assumed that this procedure will maintain normal female hormone levels and the bitch will continue to experience a normal estrus cycle. However, it is widely reported that one of the positive aspects of this procedure is that the vaginal bleeding is greatly diminished during proestrus. However, because dogs have vaginal bleeding (not uterine), then this diminished bleeding is evidence that the hormone levels *cannot* be the same as a normal intact bitch.
  - A possible complication of hysterectomy, would be a pyometra at the base of the uterus near the cervix if the uterus is removed in the typical fashion – leaving the cervix. To avoid any chance of pyometra, all secretory uterine tissue has to be removed, which includes the cervix. This surgery requires a more extensive abdominal incision and is a more technically difficult procedure.
  - Any surgical intervention incurs some risks associated with anesthesia, the procedure itself, and post-operative complications. The additional time and difficulty of removing the cervix and suturing/over-sewing the vagina adds potential complications.
- **No Surgical Intervention**
  - This option maintains normal hormone levels but requires active participation by the owner to prevent unwanted breeding of the intact fertile bitch.
  - As with tubal ligation, there is a risk of pyometra in the future.
  - Female dogs typically cycle twice a year at approximately 6 month intervals. The period of proestrus averages 9 days but can be as short as a 3-4 days or as long as 2 weeks. The period of fertility (estrus) likewise can be a few days or up to 2 weeks. During estrus, the bitch will stand for a male dog to mount for breeding. This means that there is normally only a two week window twice a year in which a female dog could become pregnant. Proestral bleeding can be confined using a simple diaper-like device with a disposable absorbent pad. The female in estrus can be managed with leash walks outside, or secure

confinement in a fenced yard with oversight by the owner, to assure there is no contact with intact male dogs for those brief time periods twice a year.

### **Male Cats**

“Tom” cats may be acceptable pets but most people cannot tolerate the strong urine odor of an intact male cat in the house. In addition, the testosterone drives many unacceptable behaviors – especially urine marking, aggression, and roaming. Experience shows that most intact male cats seem driven to fight and mate.

Little research has been done to evaluate health and longevity benefits of castration versus intact male cats. Although there is probably wide agreement that for any cats that go outside, the life of an intact male is especially difficult and may lead to a shorter lifespan.

As a result, most people opt to have male cats castrated.

### **Female Cats**

Female cats have a similar anatomy as dogs. However, their estrus cycle is different. They are induced ovulators. This means that once a female cat enters estrus, she will continue to cycle into and out of estrus until she is bred by the a male cat. This can lead to unacceptable behaviors which recur over and over. Again, as with male cats, we have little information about health and longevity benefits of leaving female cats intact. We performed one tubal ligation in a female cat approximately 10 years ago. The cat recovered well but we do not have long-term follow-up information about the frequency of estrus and persistence of cycling on behavior.

As a result of this unique aspect of their reproductive physiology, most people opt to have an ovariohysterectomy for their female cats.