

Dog Sterilization

– by Guylaine Gagnon

Summer Tid Bit

Tick & Flea Repellents

For pets, add 1 cup of water to a spray bottle, followed by 2 cups of distilled white vinegar. Ticks hate the smell and taste of vinegar, and will be easily repelled by this ingredient alone.

Then, add two spoonfuls of vegetable or almond oil, which both contain sulphur (another natural tick repellent)

To make a repellent that will also deter fleas, mix in a few spoonfuls of lemon juice, citrus oil, or peppermint oil, any of which will repel ticks and fleas while also creating a nicely scented repellent. Spray onto the pet's dry coat, staying away from sensitive areas including eyes, nose, mouth, and genitals.

When outdoors for an extended period, spray this solution on two to three times per day.

Witch Hazel & Castor Oil Mosquito & Tick Repellent

Ingredients:

6 oz witch hazel

2 oz castor oil

5 drops cinnamon oil

15 drops eucalyptus oil

15 drops citronella oil

Directions:

Combine all ingredients in spray bottle

Be sure to shake well before each application

Lavender Vanilla Mosquito Repellent

Ingredients:

15 drops of lavender essential oil

3-4 Tbsp of vanilla extract

3-4 Tbsp lemon juice

Distilled water

Directions:

Pour first 3 ingredients into an 8 oz spray bottle. Finish filling bottle with distilled water. Shake to combine ingredients. Spray on skin or clothing

In North America, if the dog or the bitch is not selected for reproduction and it is sold as a pet, the owner is often contractually required to sterilize the dog. Responsible owners bend without reservation to this breeder requirement. The majority of dogs (all breeds) are sterilized at an early age. The reasons for dog owners, often supported by veterinarians, are for practical reasons but also for health considerations:

The female sterilization eliminates the inconvenience caused by heat cycles such as hygiene, runaways and unwanted matings, false gestation and uterine infections (especially pyometra) and cancers of the mammary glands or of the reproductive system.

Castration of males reduces the instinctive territory marking, everywhere and without reason, running away dictated by the attractiveness of females in heat, accidental matings and eliminates the risk of testicular tumour and prostate enlargement. Breeders, meanwhile, are gaining insurance against unplanned matings with a dog of their lineage.

Longevity: Castrated Dogs Compared to Intact Dogs

An epidemiological study conducted by the team of Dr. Jessica Hoffman, published in 2013 (1) concerns the cause and age of death of more than 40,000 intact and neutered dogs. All breeds confounded, age of death was slightly higher for sterilized dogs compared to sexually intact dogs, however, the causes of death differ and some serious diseases are much less common in intact dogs. Indeed, statistical analysis shows that the most common causes of death may be related to the ability to reproduce or not; intact dogs more frequently die from infectious diseases or trauma; while cancers, other than cancers that affect the reproductive system, affect sterilised dogs; stopping the production of sexual hormones is associated

statistically with an increased risk of certain diseases and conditions in dogs including the hemangiosarcoma, osteosarcoma (bone cancer), cancer of the urinary tract, thyroid gland problems, incontinence and urinary tract infections, endocrine or adrenal dysfunction, orthopedic problems etc.

In both sexes, sterilisation increases the risk of obesity.

Sterilization and certain breeds of large dogs

Not all breeds will react the same way to the risks and benefits of hormone production. Dogs belonging to large or giant breeds see the risks of developing cancers grow. In addition, the younger the dogs were neutered in life, the more the risks increases for several cancers and orthopedic problems.

Three epidemiological studies on three specific breeds have brought to light the health problems and the most common causes of death for these breeds in relation to sterilization, and the age at which it was performed. The results were compared to an intact population. These three studies were carried on a cohort of 759 Golden Retriever (Gretel Torres de la Riva et al., 2013) of 2,505 Vizsla (C. Zink and all, Journal of American Veterinary Medical Association, 2014) and 683 Rottweiler (DM Cooley and all, Perdue University, 2002). These three studies are important to consider as they converge to recognize that intact dogs are less likely to develop cancer and orthopedic diseases that these breeds are most commonly affected, and that the risk decreases with the length to which the dogs, male or female, took advantage of their hormonal production.

Golden Retrievers studied by the group of Dr. Gretel Torres de la Riva were divided by gender but also by group of dogs sterilized before or after 1 year old. Males castrated before 1 year showed incidences on all 5 degenerative diseases and cancers

targeted by the study. We note 2 times more hip dysplasia, three times more lymphosarcoma, significantly higher rates for hemangiosarcoma and mastocytoma (mass cell tumor). Ruptures of the cruciate ligaments are present only in sterilized dogs. All these risks decrease when castration is performed in adulthood, or when growth is complete. The results are similar for females except for angiosarcoma and mastocytoma type tumors where risks are higher in females sterilized after at least one heat cycle compared to sterilization before puberty. The risks are still lower for intact females. It is important to keep in mind that this data is specific to a breed and its own vulnerabilities to certain diseases and the effects of sterilization and the age at which it is carried out varies from one breed to another.

The Vizslas study of the American Medical Veterinary Association in 2014, male and female, all showed increased susceptibility to all types of cancers.

Males dogs sterilized at a young age had significantly earlier diagnosis of mast cell type cancers: mastocytoma, hemangiosarcoma, lymphosarcoma, and specific to Vizslas, fear of storms compared with the odds for sexually intact dogs happening. Like the Golden Retrievers, females sterilized after 1 year are at higher risk of developing hemangiosarcoma and mastocytoma than those operated before 6 months but more than intact females.

Although this study was conducted almost 10 years ago, the study of risk of osteosarcoma in relation to the duration of exposure to sex hormones in Rottweilers is most relevant to Irish Wolfhounds. This type of cancer is the most common cancer in wolfhounds and given the low survival rate, the deadliest.

The results are consistent with other studies already cited. The age of sterilization significantly influences the risk of developing bone cancer, and the longer dogs remain intact the risk decreases.

Males castrated before the age of one are four times more at risk of developing this cancer than intact males and is three times higher in females sterilized prior to one year. Exposure to sex hormones might play a protective role by inhibiting the malignant transformation of bone cells.

The authors are convinced that even in the presence of a multifactorial cancer, where the environment and genetics are involved in individual risk of developing bone cancer, exposure to sex hormones can significantly influence this risk.

Practical Application

These studies should lead us to reassess the widespread practice of sterilizing all dogs that will not be used or no longer reproduce. It seems clear that the sterilization of males and females under the age of one year should be outlawed and be part of a written contract between the breeder and the buyer of wolfhounds.

Sterilization should never, besides major medical reasons, be performed before adulthood, at least 2 years old.

Compulsory sterilization should not be a given, but rather be a discussion between the breeder and buyer, and between them and their veterinarians, and address the consequences and the risks identified in the scientific literature even if these risks statistics are not yet links of cause and effect and the physiological reasons for all the results are not yet known.

Responsible buyers will need to be more accountable because they will have to manage an intact dog for at least two years. Fences made mandatory, city dog parks to be avoided for males and obedience training strongly suggested. Wolfhounds owners, supported by their club should encourage specialized veterinary clinics to offer the choice of sterilization that retains hormonal production, vasectomy and hysterectomy, without touching the ovaries or tubal ligation.

Reference 1: *Reproductive Capability is Associated with Lifespan and Cause of Death in Companion Dogs* – Jessica M. Hoffman, Kate E. Creevy, Daniel E. L. Promislow – Published: April 17, 2013

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0061082>

Reference 2: *Neutering Dogs: Effects on Joint Disorders and Cancers in Golden Retrievers* — Gretel Torres de la Riva, Benjamin L. Hart, Thomas B. Farver, Anita M. Oberbauer, Locksley L. McV. Messam, Neil Willits, Lynette A. Hart – Published: February 13, 2013

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0055937>

Reference 3: *Evaluation of the risk and age of onset of cancer and behavioural disorders in gonadectomized Vizslas* — M. Christine Zink, DVM, PhD; Parvene Farhooody, MA; Samra E. Elser, BS; Lynda D. Ruffini; Tom A. Gibbons, MS; Randall H. Rieger, PhD – *Journal of the American Veterinary Medical Association*. – February 1, 2014, Vol. 244, No. 3, Pages 309-319

<http://avmajournals.avma.org/doi/abs/10.2460/javma.244.3.309?journalCode=javma&>

Reference 4: *Endogenous Gonadal Hormone Exposure and Bone Sarcoma Risk* — Departments of Veterinary Clinical Sciences [D. M. C., B. C. B., D. L. S., D. J. W.] and Veterinary Pathobiology [N. W. G., L. T. G.], Purdue University, West Lafayette, Indiana 47907, and the Gerald P. Murphy Cancer Foundation, Seattle, Washington 98125 [D. M. C., D. J. W.]

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