

Desexing Your Dog

Dear Pet Owner,

We understand that decisions around desexing your dog are complex. There are several pros and cons to de-sexing. Furthermore, there are several different procedures that can render your dog sterile and these have their own set of pros and cons. Below is a summary of the recent literature surrounding the advantages and disadvantages of de-sexing provided by Dr Abbie Tipler ATCL BVSc MANZCVS FANZCVS - Small Animal Surgical Specialist. from Veterinary Specialist Services (VSS), Brisbane, Australia (www.drabbietipler.com)



This pros and cons list should be interpreted in light of the disease prevalence, which can vary based on breed and region. For example, although desexing females reduces the risk of ovarian tumours, these tumours are uncommon. Some breeds are more prone to orthopaedic disease or various cancers. Therefore, although this gives an overview, more detailed information may need to be sought. The information should be combined with the recommendation from your dog's veterinarian.

Pros of Desexing

Males

- Castration reduces the risk of testicular tumours.
- Castration reduces the risk of benign prostatic neoplasia, chronic prostatitis, perianal adenomas and perianal hernias.

Females

- Ovariohysterectomy may reduce the risk of mammary cancer. The reduction in risk seems to be small and some breeds are more prone to mammary cancer than others.
- Ovariohysterectomy reduces the risk of ovarian neoplasia, uterine neoplasia and vaginal tumours.
- Ovariohysterectomy prevents pyometra, metritis and ovarian cysts as well as problems associated with pregnancy and parturition. Some breeds are more prone to pyometra.

Males and Females

- Desexing has been associated with an overall increase in life span, due to decreased mortality associated with trauma and infectious disease, in some studies.
- Desexing reduces the risk of transmissible venereal tumors, a sexually transmitted disease.



Cons of Desexing

Males

- There is an increased risk of prostatic carcinoma.

Females

- There is an increased risk of urinary incontinence in some breeds.

Male and Female

- There is an increased risk of obesity.
- There is an increased risk of joint disease if desexed prior to skeletal maturity (for example cruciate ligament disease, elbow dysplasia and hip dysplasia) in some breeds, especially larger breeds when desexing is performed prior to skeletal maturity (see below for breed specific information).
- There is an increased risk of cancers in some breeds. The risk is sometimes reduced when desexing is performed beyond a certain age. These factors (i.e. risk and age at desex) vary between breeds (see below for breed specific information).

Behaviour

The hormonal effects on behaviour are more complex than once believed. There is some evidence that the longer dogs are exposed to hormones, the lower the risk of some behavioural problems. Desexing does seem to reduce some problem behaviours such as roaming, hormonal interdog aggression and urine marking. It possibly increases aggressive behaviours and this is more common in puppies already demonstrating fearful or aggressive behaviours. Studies have revealed that the most serious human dog bite injuries have involved intact dogs. In some regions however, desexing is linked to better overall husbandry and therefore the effect of desexing specifically, can be difficult to determine.



Breed Specific Considerations

The pros and cons of desexing can vary by breed. There have been some breeds that have been studied in more detail. For breeds not specifically listed, similar breeds may exist to provide a guideline.

A good summary of the risk factors for various diseases by breed can be found by accessing the article 'Assisting Decision-Making on Age of Neutering for 35 Breeds of Dogs: Associated Joint Disorders, Cancers, and Urinary Incontinence' by Hart et al.

<https://www.frontiersin.org/articles/10.3389/fvets.2020.00388/full>

There is a similarly good article examining mixed breeds.

<https://internal-journal.frontiersin.org/articles/10.3389/fvets.2020.00472/full>

The take home message from this article, is that mixed breeds >20kg adult body weight, have an increased risk of joint disorders when desexed prior to 12 months of age. There is no increased risk of cancers in the desexed mixed-breed population of any size category.

Be mindful these articles do not consider the risks associated with trauma, sexually transmitted disease, obesity or behaviour and they do not consider overall lifespan.

Options for Sterilisation of Dogs

Ovary-Sparing Hysterectomy

- This procedure removes the uterus, cervix and possibly one ovary.
- Because at least one ovary remains, hormones are maintained as are their potential protective effects on some diseases.
- The dog will have a heat cycle and may have a very small amount of bloody discharge. They will be attractive to other dogs and may exhibit undesirable behaviours of being on heat such as yowling and the desire to mate.
- They are infertile and unable to get a pyometra, unless part of the uterine tissue remains and then the patient can develop a stump pyometra, which requires further surgery.
- They can develop ovarian neoplasia, but this is fairly rare.
- Because this is a relatively new procedure, there is not a lot of information in the literature regarding complications, and unanticipated complications may therefore occur.

Tubal Ligation (Salpingectomy)

- Tubal ligation removes a portion of the oviducts but leaves the ovaries, uterus and cervix.
- Hormones are maintained and the dog still experiences a heat cycle. They will be attractive to other dogs, may have bloody discharge during the heat cycle and may exhibit undesirable behaviours of being on heat such as yowling and the desire to mate.
- They are infertile but able to get a pyometra and uterine/ovarian neoplasia.

For these reasons, it is generally not recommended.

Ovariectomy

- Removes the ovaries, but preserves the uterus and cervix.
- Hormones are not maintained due to the ovaries being removed.
- They are infertile.
- 'Unless part of the ovary is accidentally left (called iatrogenic ovarian remnant syndrome), they are not above to develop pyometra because the hormonal effect on the uterus is lost.

Note: This procedure is very similar to the traditional ovariohysterectomy in terms of the expected outcome.

Ovariohysterectomy

- This is the traditional procedure, and the ovaries and part of the uterus are removed.
- Hormones are not maintained due to the ovaries being removed.
- Dogs will not have a heat cycle.
- 'Unless part of the ovary is accidentally left (called iatrogenic ovarian remnant syndrome), they are not above to develop pyometra because the hormonal effect on the uterus is lost.



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