

Neutering - the pros & cons

Neutering is also known as the 'kindest cut'. But for whom - dogs or humans? Vet **Mark Elliott** provides an interesting angle on the subject from the canine perspective in relation to the human arguments for the 'early op' or indeed neutering at all.

The rise of the internet, watch-dog-type programmes and a general culture shift towards questioning everything and anything can be a positive drive for change, and one area of current questioning is the early neutering of dogs. **Dogs Monthly's** editor, Caroline, asked me to put together some of the arguments surrounding this debate, and neutering in general, to enable owners to make a more informed choice for their pet.

In this article, I am considering the issues from the individual canine perspective - which is really the nub of any welfare argument - as opposed to the overall population control/human arguments that are so often put forward.

From the human perspective

There is no doubt that the human reasons for spaying [neutering of female dogs] and castration [neutering of male dogs] are compelling:

- It avoids some inconvenience and expense for owners.
- It stops heat [in season] cycles.
- No accidental pregnancies.
- Prevents unwanted puppies being born. Some studies (USA) have shown as many as 56 per cent of litters born are unplanned;
- It reduces risk of abandonment of unwanted pets, resulting in mass euthanasia and neglect (but human nature will ever mean this exists somewhat as an issue), but do consider that some charities are now importing dogs from overseas to rehome here - presumably as we don't have enough unwanted dogs needing new homes in mainland Britain already?!
- Male dogs are thought to be less likely to roam and are more likely to be better behaved - but more about that later.
- Early neutering is said to offer breeders a chance to preclude others from using their bloodlines, allegedly also preventing use of substandard stock.
- Vets also find that early neutering is often easier to carry out.

From the Canine perspective

The recently updated Animal Welfare Act puts a greater obligation on owners to consider their animals' health and welfare, including their ability to display normal behaviour. Clearly, certain behaviour patterns are prevented and one vet, who writes regularly in the press, calls neutering an unnecessary mutilation. Perhaps this is a bit strong and there is no way all owners could manage their pet if all dogs were left entire, but we do need to consider some of the broad assumptions and statements about neutering from a Canine perspective that all owners should be made aware of when deciding if neutering is best for their pet.

Does neutering benefit a dog's health, and does early neutering (before the first season in bitches and from as early as nine weeks old) offer significant benefits over a later operation or, in fact, does it cause harm?

Please note that all figures given in this article relate to the studies I could find on the subjects (and there aren't that many), and it is always difficult to research a negative result - and even harder to get funding for such! Accordingly all figures can only be viewed as approximate and will be defined better, I hope, by future research.

Assumption: Neutering is a relatively safe procedure

Canine View

Various studies incorporating neutering show that post-operative complications following elective surgery vary considerably. Some show frequencies between one and 24 per cent for all complications and one to four per cent for severe complications.

Some dogs do die, but as best I could tell this is reported at around 0.1 per cent (or one in 1,000). I could find no studies showing reduced mortality risk with early neutering but as you can imagine it is very difficult to design a study to research a negative result.

Assumption: Neutering reduces the risk of mammary cancer in the bitch and early neutering prevents it

Canine View

Without doubt, studies show there is a benefit, but the statement is somewhat misleading.

Unneutered bitches have only a 3.4 per cent chance of developing this problem with age, with 50 per cent of those cases being malignant.

Early neutering reduces this risk to 0.5 per cent of the 3.4 per cent = 0.017 per cent, but spaying the bitch after the first season and before the second reduces it also to eight per cent of 3.4 per cent = 0.27 per cent.

So the argument for early neutering over leaving the bitch to have one season on the basis of this argument doesn't really stack up as particularly significant to my mind.

The risk of developing mammary cancer in later life increases with each subsequent season.

However, there is also a downside to counter this argument which is that some studies show increased incidence of other cancers following neutering including:

Osteosarcoma (bone cancer) - by a factor of one to three times (normal incidence 0.2 per cent).

Heamangiosarcoma— there appears to be a five times greater risk of contracting this cancer in neutered bitches and 2.4 times in neutered dogs. The normal incidence in unneutered canines is approx 0.2 per cent.

Urinary tract cancer (in bitches only) - there is two to four times greater risk of developing urinary tract cancers. The normal incidence is less than one per cent.

So what is seen as a benefit for bitches for mammary cancer risk is, arguably, roughly balanced by the increased risk of other cancers. Net gain - zero?

For males it could be argued, therefore, that there is an overall increase in risk.

Assumption: Spaying prevents pyometra

Canine View

Of course pyometra (a potentially fatal womb infection) is prevented following spaying, since the uterus and ovaries have been removed.

The incidence of pyometra by 10 years of age has been shown to be around 23-24 per cent which is significant. However, most cases of pyometra will be resolved by the bitch having a hysterectomy at the time, with death as a result of the condition being around four per cent.

So, relatively speaking, the risk of death from spaying is 0.1 per cent and the overall risk of death when older from Pyometra if left unspayed is one per cent.

These results, then, show a net gain from neutering for only nine bitches in every 1,000.

Assumption:

Only a small number of bitches become incontinent post-operatively and it is easily treated

Canine View

Studies vary considerably but, as best I can determine, between 12 and 20 per cent of bitches become incontinent to varying degrees after spaying, usually around two to three years later.

Larger dogs are more prone to incontinence after the op, as are some breeds. Most will respond to long-term treatment, but not all.

Incontinence is devastating, particularly for owners where the pet lives in close proximity and when she fails to respond to treatment it can be a reason for euthanasia or rehoming.

It is hard to determine if early neutering is more significant here: some studies showed less risk of the condition but more likely it was severe, while other studies did not seem to draw a conclusion.

Assumption: The increase in size of early neutered dogs is not a problem

Canine View

Early neutered dogs show delayed closure of bone growth plates and so will tend to be significantly larger than their un-neutered siblings. They also tend to be lighter of bone structure and have narrower chests and skulls. This alters body proportions and the lengths, and therefore weights, of some bones relative to others. In the hind leg this has been correlated with heavier legs below the stifle and altered angle of the joint leading to greater risk of cranial cruciate ligament rupture with all the attendant stress and surgery needed to correct that involved.

Logic dictates that bone density is affected by sex hormones and certainly I personally have found a number of neutered bitches whose lameness responds to supplements, similar to those used for human osteoporosis, for this alone. Which finding raises questions for me to which I can find no research to answer.

Other studies have shown that early neutered dogs have a higher incidence of hip dysplasia, but that study did have no standard criteria for diagnosis (reflecting the difficulties in interpretation of observational studies). This presents an argument for allowing the dog to mature before surgery.

Assumption: Neutered dogs get fatter don't they?

Canine View

Yes, but this is really a human management issue unless the dog develops illness such as hypothyroidism. Obesity is an obvious health problem for many reasons.

Assumption: Male dogs will not get prostatic disease and testicular cancer if castrated

Canine View

The latter is obvious as you cannot get disease in an organ that is not there, but the assumptions regarding prostate troubles are much more complex. In older intact males with simple enlargement of the prostate due to testicular tumours late castration is usually curative, as it is with most testicular cancer (approx 7% incidence and surgery is 90% curative – a 0.7% gain for castration). However, prostatic cancer, which logically you would think not a problem in neutered dogs, some studies suggest is actually is up to 4 times more likely! Overall Prostatic Cancer incidence is around 0.6% negating the benefit of castration already mentioned? However, combined with concerns previously mentioned regarding other Cancer incidences this raises some difficulties when defining castration as a Cancer benefit.

Assumption: Neutered pets are better behaved, and early neutered ones better still

Canine View

Not so!

Quite apart from the fact that most behaviour problems are created by owners failing to understand and/or train their dogs properly, knowing factors relative to the breed and individual characteristics, and possibly also failure to provide an appropriate environment, there are a number of arguments to consider here.

Yes, neutered male dogs are less likely to take it upon themselves to roam freely and, yes, they are less likely to exhibit normal behaviour and try to assert male dominant behaviour, but all these things can be controlled by human interventions.

However, the American Kennel Club Canine Health Foundation reported significantly more behavioural problems in neutered dogs and bitches.

Other studies have also shown early neutering to be associated with increased incidence of noise phobias and undesirable sexual behaviour! Quite the opposite of what one would logically expect.

The most commonly observed problem in spayed bitches was found to be fearful behaviour, and in

male dogs aggression (the very thing we castrate them for!). I wonder if some of the latter could well be due to confusion as to the individual's place in dog society as an adult-sized animal locked into a state of permanent puppyhood has been created?

On the upside, separation anxiety and inappropriate toileting when frightened have been found to improve. Perhaps the result of a suppression of mental development?

Longer term, studies have also shown sexually intact males to show slower cognitive impairment with age than neutered dogs. Results with bitches were inconclusive.

Studies on several thousand Golden Retrievers showed that those neutered were more likely to develop hypothyroidism and this affects mental function amongst its other concerns. Certainly I have diagnosed early neutered dogs that have developed this condition as early as seven months of age, and also have seen early neutered dogs fail expensive training programmes when they develop it young. This perhaps is the reason why behaviourists are telling me they are being called upon to help owners finding these early neutered individuals so hard to train?

Other studies have confirmed this **Hypothyroid** link and, for interest, the most common clinical findings in hypothyroidism include obesity, seborrhoea (greasy skin), alopecia (hair-loss), weakness, lethargy, bradycardia (slow heart rate), and pyoderma (skin infection). I could go on, but it would be impossible within the scope of this article to cover all the possible other minor issues seen as a result of neutering, so I shall stop there!

The price dogs pay

A little research will enable you to make an even more informed choice, but I would venture to ask 'where are the benefits for the individual dog in all this?' Most of the benefits reported on the Internet and elsewhere are clearly associated with societal, human behaviour and convenience arguments. Many years ago dogs were domesticated and perhaps this is the price they pay as part of that bargain?

Clinically the arguments for neutering male dogs do not, in my opinion, stack up to much at all and may it actually be a negative action when looking at their long term health. For bitches there are some apparent positive benefits, but still minimal in my opinion when compared to the risk factors and long-term health issues should the individual be unfortunate to suffer them.

Ultimately the choice you make (and the choice should be yours as the responsible owner) will mostly depend on your personal circumstances, the breed you select and how you wish the dog to interact with your family – all human factors.

The risks as well as the benefits claimed as regards early neutering are all pretty low but you should be aware of the long term issues that appear to be associated with early neutering over letting the dog mature, and be prepared to cope should they happen. Your decision as regards whether or not to have your dog neutered early should be an informed one - it does not have to follow others' agendas and media campaigns - and, hopefully, I have gone some way to helping with that.

References and Further Reading:

Complications Resulting from Sterilization/Contraception techniques – a list of research articles
<http://nal.usda.gov/awic/pubs/SpayNeuter/complications.htm> (saves a lot of listing)

Long term risks and benefits of early age gonadectomy in dogs. C.V.Spain et al. JAVMA Vol 224, No3, Feb1, 2004.

Canine Reproduction. Peggy Root DVM. Article for the Puli club of America
<http://www.puliclub.org/CHF/AKC2007Conf/Canine%20Reproduction.htm>

Early Spay-Neuter Considerations for the Canine Athlete. C Zink 2005
<http://www.caninesports.com/Spayneuter.html>