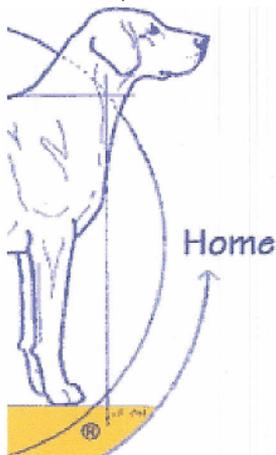


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## Early Spay-Neuter Considerations for the Canine Athlete

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*To neuter or not to neuter. . .*

There are a number of studies that suggest that those of us with canine athletes should be carefully considering our current recommendations to spay or neuter all dogs at 6 months of age or earlier. A study by Salmeri et al in 1991 (Salmeri et al JAVMA 1991 ;198:1193-1203) found that bitches spayed at 7 weeks were significantly taller than those spayed at 7 months, and that those spayed at 7 months had significantly delayed closure of the growth plates than those not spayed (or presumably spayed after the growth plates had closed). The sex hormones close the growth plates, so the bones of dogs or bitches neutered or spayed before puberty continue to grow. This growth frequently results in a dog that does not have the same body proportions as he/she was genetically meant to. For example, if the femur is normal length at 8 months when a dog gets spayed or neutered, but the tibia, which normally stops growing at 12 to 14 months of age continues to grow, then an abnormal angle may develop at the stifle. In addition, with the extra growth, the lower leg below the stifle becomes heavier (because it is longer), causing increased stresses on the cranial cruciate ligament. This is confirmed by a recent study showing that spayed and neutered dogs have a higher incidence of CCI rupture (Slauterbeck JR, Pankratz K, Xu KT, Bozeman SC, Hardy DM. Canine ovariohysterectomy and orchiectomy increases the prevalence of ACL injury. Clin Orthop ReJat Res. 2004 Dec;(429):301-5).

In addition, a study in 2004 in JAVMA (Spain et al. JAVMA 2004;224:380-387) showed that dogs spayed or neutered before 5 1/2 months had a significantly higher incidence of hip dysplasia than dogs spayed or neutered after 5 1/2 months of age. If I were a breeder, I would be very concerned about this, because it would mean that I might be making incorrect breeding decisions if I were considering the hip status of pups I sold that were spayed or neutered early. Interestingly, this same author also identified an increased incidence of sexual behaviors in males and females that were neutered early.

A number of studies, including the one by Spain referenced above, have shown that there is an increase in the incidence of female urinary incontinence in dogs spayed early. This problem is an inconvenience, and not usually life-threatening, but nonetheless one that requires the dog to be medicated for life.

Yes, there is the concern that there is an increased risk of mammary cancer if a dog has a heat cycle. But it is my observation that fewer canine athletes develop mammary cancer as compared to the number that damage their cranial cruciate ligaments. In addition, only about 50 % of mammary tumors are malignant, and those that are malignant don't metastasize very often, particularly in these days when there is early identification and removal of lumps found on our dogs.

In addition, when considering cancer, there is another study of 3218 dogs that showed that dogs that were neutered before a year of age had a significantly increased chance of developing bone cancer (Cooley OM, Beranek BC, Schlittler OL, Glickman NW, Glickman L T, Waters O, Cancer Epidemiol Biomarkers Prev 2002 Nov;11 (11):1434-40), a cancer that is much more life-threatening than mammary cancer, and which affects both genders.

Finally, in another study, unneutered males were significantly less likely than neutered males to suffer cognitive impairment when they were older (Hart BL. J Am Vet Med Assoc. 2001 Jul1;219(1):51-6). Females were not evaluated in that study.

For these reasons, I have significant concerns with spaying or neutering dogs before puberty, particularly for the canine athlete. And frankly, if something is more healthy for the canine athlete, would we not also want that for pet dogs as well? But, of course, there is the pet overpopulation problem. How can we prevent breeding while still leaving the gonads to produce the hormones that are so important to canine growth and development? The answer is by performing vasectomies in males and tubal ligation in females. The down side is that some unwanted behaviors associated with intact males like dog aggression, marking, humping are not affected by a vasectomy. On the other hand, it has been my experience that females and neutered males participate in these activities too! The other downside is that vets don't normally do this procedure. But some do, and maybe it is time that more learned.

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n individually. If a pet dog is going to live with an intelligent, well-informed family that understands the problem of pet overpopulation and can be trusted to keep their dogs under their control at all times and to not breed them, I do not recommend spaying or neutering before 14 months of age. In the case of dogs and bitches that might be going to less vigilant families, vasectomy and tubal ligation will allow proper growth while preventing unwanted pregnancies.

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