The Question Of Neutering and at what age

(Put together by Gregg Tonkin, Little River Labradors from postings by Pam Davol and Maryanne Foote, both Labrador breeders)

Owners who are considering neutering need to take all factors into consideration, not simply the benefits of neutering when making a decision as to when to neuter.

If one looks close enough, one will find that neutering is one of those topics in veterinary medicine that is extremely biased: that is, most often one will find more emphasis placed on the pros of neutering with more often than not, very little or no discussion of the cons. Veterinarians, and responsible breeders as well, face a true dilemma when discussing neutering. The overpopulation crisis presents a very real concern with regard to the necessity of ownership responsibility. Prepubertal/early neutering or required neutering provides a means for vets/breeders to enforce owner responsibility by ensuring surgical sterilization of dogs not destined to be used in breeding programs. Again, this enforced neutering is typically presented along with a preamble of all the benefits that go along with neutering. However, I believe that breeders, if not veterinarians, need to begin questioning the ethics of this approach to prompt or require owners to neuter; especially in light of the facts that early neutering may not be as benign a process to the health of a dog as one would believe.

Yes, neutering prior to the beginning of estrus does reduce risk for mammary cancer in females, but it also significantly increases risk for urinary incontinence in bitches which predisposes these bitches to diethylstilbestrol (DES) dependency (Stocklin-Gautschi et al., J. Reprod. Fertile. Suppl. 57:233-6, 2001 and many other references)--in some instances, DES is not effective at controlling incontinence and will force some owners to elect euthanasia. Though with lesser risk compared to females, early neutering also increases risk of urethral sphincter incontinence in males (A. Aaron et al., Vet Rec. 139:542-6, 1996.)

With regard to cancer, spayed females have a 4 times greater risk for developing cardiac hemangiosarcomas (vascular tumors) compared to intact females (neutered males also show a significant increase in risk for these tumors compared to intact males) (Ware and Hysper, J. Vet. Intern. Med. 13:95-103, 1999.). Additionally, both neutered males and females have a 2-fold greater risk for developing bone tumors (osteosarcoma) compared to intact males and females (Ru et al., Vet J. 156:31-9, 1998.).

Some evidence suggests that early neutering may also predispose to endocrine disorders later in life (Panciera DL. J. Am. Vet. Med. Assoc., 204:761-7 1994.). Furthermore, there is also an indication that early neutering (because absence of sex hormones delays maturation of osteoclasts and thus results in delayed closing of the growth plates in the long-bones) may predispose to increased risk for various orthopedic disorders (such as cruciate ligament disease as I had mentioned in a previous post). Also, some evidence suggests that there is a correlation between increased time for growth plate closure and incidence of HD in Labs (Todhunter et al. J. Am. Vet Assoc., 1997).

If one conducted a research of the literature on the detrimental effects on physiological development associated with sex hormone deficiencies during adolescent development in any other species other than the dog and cat, one will find a wealth of literature stressing the importance of sex hormones for sound physiological, endocrine and metabolic development. Additionally, if one examines the scientific research that reports the benefits of early neutering in absence of any side-effects in dogs, one will discover that the methodology of these studies are designed in very specific ways to assure that outcome in neutering is presented in a favorable light (this does not mean that the data is biased, this simply means that the comparisons made do not provide for adequate interpretation of long-term effects of neutering).

In light of this, though it is understandable for vets/breeders to urge dog owners to neuter their pets early with regard to the greater good (i.e. reducing risk of accidental breeding), the physiological soundness of the individual dog should take precedence over any other issues. As such, it is my opinion, based upon the literature that I have reviewed that to reduce risks to physiological soundness, etc, that I am of the personal opinion that dogs should be a minimum of 1 year of age before neutering.
(written by Pam Davol of Wing-In-Wave Labradors, a noted research scientist and a Labrador genetic expert)

"And in Addition"
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 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 CCL rupture (Slauterbeck JR, Pankratz K, Xu KT, Bozeman SC, Hardy DM. Canine ovariohysterectomy and orchiectomy increases the prevalence of ACL injury. Clin Orthop Relat 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 cancers 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 DM, Beranek BC, Schlittler DL, Glickman NW, Glickman LT, Waters D, 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 Jul 1;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? I think it is important, therefore, that we assess each situation 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.

(written by Maryanne Foote of Winroc Labradors, a noted and long time Labrador Retriever breeder)