



Neutering Dogs

Most male animals (stallions, bulls, boars, rams, and tomcats) that are kept for companionship, work, or food production are neutered (castrated) unless they are intended to be used as breeding stock. This is a common practice to prevent unacceptable sexual behavior, reduce aggressiveness, and prevent accidental or indiscriminate breeding. However, many dog owners choose not to neuter their male dogs, despite the benefits.

How does neutering affect behavior?

The only behaviors that will be affected by castration are those that are under the influence of male hormones (See below). A dog's temperament, training, personality and ability to do "work" are a result of genetics and upbringing, not its male hormones. Castration does not "calm" an excitable dog, and unless a castrated male dog is overfed or under-exercised, there is no reason for it to become fat and lazy.

What is castration?

Castration or neutering of male dogs is surgical removal of the testicles (orchidectomy). The procedure involves general anesthesia. An incision is made just in front of the scrotal sac and both testicles, leaving the sac intact. Vasectomies are not performed since it is both sterilization and removal of the male hormones that provide the behavioral and medical benefits. A chemical castration agent has been recently introduced for puppies but, although these products do sterilize dogs to prevent reproduction, they may not prevent or reduce the behavioral signs that can be achieved by castration since hormone levels are still present.

Which of my dogs' behavior problems can be expected to improve following castration?

As mentioned, only those behaviors that are "driven" by male hormones can be reduced or eliminated by castration. Although the hormones are gone from the system almost immediately following castration, male behaviors may diminish quickly over a few days or gradually over a few months.

Undesirable sexual behavior: Attraction to female dogs, roaming, mounting, and masturbation can be reduced or eliminated by castration.



(a) Case studies show that for roaming there was moderate improvement in 70% of dogs with marked improvement in 40%. For mounting there was moderate improvement in 70% of dogs with marked improvement in 25%.

(b) In one study, castration led to reduced aggression toward other dogs in the house in 1/3 of cases, towards people in the family in 30% of cases, towards unfamiliar dogs in 20% of cases and towards unfamiliar people in 10% of cases.

Urine Marking: Most adult male dogs lift their legs while urinating. Instead of emptying their bladders completely, most male dogs retain some urine to deposit on other vertical objects that they pass. Some males have such a strong desire to mark that they also mark indoors. Castration reduces marking in 80% of dogs with a marked improvement in 40%.

Aggression: Every aggressive dog should be castrated. At the very least this will prevent reproduction and passing on of any genetic traits for aggression. Castration may also reduce or eliminate some forms of aggression (i.e. those that are influenced by male hormones).



Are there any additional benefits to castration?

Medical benefits: Castration eliminates the possibility of testicular cancer and greatly reduces the chance of prostate disease, two extremely common and serious problems of older male dogs. Many older dogs that are not neutered will develop prostate disease or testicular tumors if they survive to an old enough age. Castration can also reduce the risk of perianal tumors and perineal hernias.

Population control: Perhaps the most important issue is that millions of dogs are destroyed annually at animal shelters across the United States and Canada. Neutering males is as important as spaying females when it comes to population control.

Are there any risks?

Nowadays, with the broad selection of anesthetic agents and state of the art monitoring, anesthetic or surgical complications rarely occur during a canine castration.

Most young and healthy animals recover without incident. Often, the biggest concern is not the surgery and anesthesia, but the recovery, since we need to ensure that the dog does not lick excessively at its incision line until it is fully healed. Constant monitoring, bitter tasting creams, or a protective collar, known as an Elizabethan collar, will be required if excessive licking is observed following castration. (If this is needed, please see our handout on Elizabethan collars) When castration is being considered for an older dog, the benefits must be weighed against any risks associated with anesthetic and surgery. Since castration surgery is seldom associated with any complications, it is the anesthetic that is the primary concern. If castration is being considered as a separate procedure for a medical reason (prostatic enlargement, testicular tumors, perianal tumors), then there is a significant benefit to the dog's health, comfort and perhaps longevity, in having the castration performed. If the dog is exhibiting any undesirable behaviors that might be improved by castration (roaming, masturbation, mounting, interdog aggression, excessive sexual interest or marking), there may also be a significant benefit to be gained from castration. Although not infallible, a physical examination, a series of blood and

urine tests and any additional screening that your veterinarian may feel is warranted for your dog (e.g. EKG, chest radiographs), can help to determine if your pet has any significant anesthetic risks. These tests can also help the veterinarian determine which anesthetic protocol would be safest for your pet. Since many older pets require anesthesia for other procedures (e.g. growth removal, preventive dentistry), the benefits can often be further increased, and the number of anesthetic procedures reduced by performing the castration along with the other procedure.

What age is best for preventive castration?

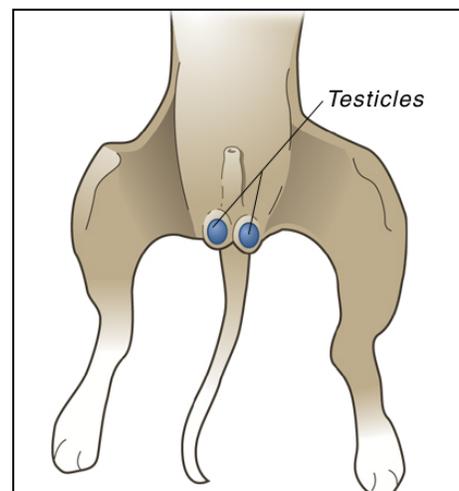
A number of studies have shown that castration is just as effective at reducing male associated behavior problems as it is at preventing them. This means that whether the pet is castrated post-pubertally (e.g. 1 year or older) or pre-pubertally (e.g. before 6 to 9 months of age) the behavioral effects are likely to be the same. There is, however, anecdotal evidence that dogs that are sexually experienced are more likely to retain their sexual habits after castration, compared to those dogs that have had little or no sexual experience prior to castration.

It has been advocated recently that castration be performed at as young an age as is practical, to ensure that it is done before the pet has a chance to breed. This is most important in animal shelters, since it allows them to ensure that every dog adopted has already been castrated. Many shelters now routinely begin neutering as young as two months of age. To date, studies have shown that castration at this early age is safe, and has no long-term effects on health or behavior, regardless of the age that it is performed. It has been suggested that surgery at this age is shorter, that recovery is quicker, that there is with less post-operative discomfort for these younger animals. However, if castration is performed before all permanent (adult) teeth have erupted, your dog should be rechecked around 6 months of age to insure that no deciduous (baby) teeth have been retained.

Once dogs are adopted into their new homes, most veterinarians recommend waiting until all vaccinations are complete before admitting the pet into the hospital for surgery. However, if general anesthesia were needed prior to the vaccinations being completed for any other reason (e.g. suturing a cut, removing quills) this would be an excellent time to consider castration. In summary, there seems to be no behavioral or medical benefit to waiting until a dog is "mature" to perform a castration.

My dog has retained testicles - what does this mean?

During fetal development or shortly after birth, the testicles will descend into the scrotal sac. In some dogs, likely due to a genetic predisposition, the testicles may not descend into the scrotal sac. These dogs are known as either unilateral (one testicle) or bilateral (both testicles) cryptorchids. The testicle may be retained in the abdomen or anywhere between the abdominal cavity and the external sac. Retained testicles do not usually produce sperm, but they will produce hormones, which can lead to any of the behavioral changes or medical problems previously discussed. In fact, some studies have shown that retained testicles may be more prone to developing cancer. At the very least, it would be extremely difficult to determine if a testicle, which is located in the abdomen, begins to develop cancer, since it cannot be palpated. All dogs with retained testicles should be neutered (and both



testicles removed) for medical and behavioral reasons, and to ensure that this genetic abnormality is not perpetuated.

ADDITIONAL INSTRUCTIONS: