



Neutersol® Frequently Asked Questions

What is the status of Neutersol?

Neutersol is approved by the FDA for permanent sterilization (neutering) of male dogs from 3-10 months of age. It has been used widely off-label in dogs over 10 months of age. Neutersol was developed by Pet Health, Inc. and introduced in the U.S. in 2003 by Addison Laboratories. In 2005, production and distribution were discontinued after a “business divorce” between Pet Health and Addison Laboratories. Pet Health is now working with Abbott Animal Health with plans to launch Neutersol in U.S. markets (timing anticipated to be early 2009). Join our email update list (sign-up box on the right side of each of our web pages: www.acc-d.org) to be notified when a release date is announced.

What is Neutersol?

Neutersol is the brand name of a zinc compound (zinc gluconate neutralized by arginine) administered by injection into a dog’s testicles with a fine gauge needle. Neutersol is derived from natural ingredients: zinc, glucose and arginine. Neutersol causes sclerosis of the testes resulting in permanent sterility. Zinc is the active ingredient, eliminating sperm production. Neutersol causes permanent sterility in 99.6% of dogs with one administration (one injection in each testicle). As with any medical intervention, effectiveness is dependent upon proper administration.

Are the injections painful?

Neutersol can be administered without sedation, though light sedation has been used in some cases to ensure that the dog holds still during the injection. A fine gauge needle is used to slowly inject a small amount of solution into each testicle and patient discomfort is minimal. Scrotal nerve endings are all contained in the skin on the outside of the scrotum. In studies required by the FDA, only 2.5% of dogs showed discomfort by moving or vocalizing. The other 98% did not show any reaction to the injection.

What about safety? Are there any side effects?

Thousands of male dogs have been successfully neutered during the past 10 years with no indication of any long-term detrimental effects. The most common local effect of injection was scrotal pain which was detected in 6.3% of dogs following treatment.

Improper injection technique can result in adverse reactions at the injection site. Reactions range from temporary swelling to rare tissue necrosis requiring surgical castration. Rate of injection site reactions requiring follow-up treatment ranged from 0.7% to 3.9% in several early studies. Incidence decreased substantially as better practices (including administering a light sedative to ensure that the dogs held still during injection and using separate 28 gauge needles for drawing up and injecting the solution) were developed after the initial introduction. Data available from a Mexico field study of 10,000 dogs showed an average complication rate of 1.2%. One of Neutersol’s greatest appeals is that it does not require general anesthesia or a surgical incision, completely removing the risk factors associated with these. During FDA-required toxicology studies, Neutersol caused no deaths and was determined to be safe.

Do the testicles change in size after administration?

The testicles atrophy over weeks to months following injection, resulting in a 70-90% reduction in testicular size in very young puppies and up to 50% in older dogs.

How long after administration does the dog become sterile?

Pre-pubescent males never become fertile, but sterility may take up to 60 days in post-pubescent males.

Does Neutersol have long-term health benefits like reduction of prostate cancer?

The value of sterility, with or without other benefits, is great. While castration has been touted as a means of preventing prostate cancer, available data actually indicates that prostate cancer is more prevalent in



castrated dogs than in intact dogs. Studies have revealed a significant decrease in prostate size in Neutersol-injected dogs versus controls. While castration has a reputation for having great health benefits, surprisingly little research has been done to fully evaluate the non-reproductive effects of either surgical sterilization or Neutersol treatment. To better understand the long-term health benefits of Neutersol, more studies will need to be performed.

Can Neutersol be used in dogs of any age?

Neutersol is approved by the FDA for male dogs from 3-10 months of age, but has been used widely off-label in dogs of all ages. A recent study of 10,000 dogs conducted to demonstrate safety and efficacy of Neutersol in adult dogs was immensely successful.

Can Neutersol be used on species other than dogs?

We have heard of programs using Neutersol in bears, wolves, goats and other livestock species. Technically, Neutersol should work in essentially all mammals; however, the time and expense to submit the amount of testing needed for FDA review is a large investment, and has to be done in each species, sex, and age group. Use of Neutersol in species other than dogs will require determination of the correct dosage and protocol for each species. Neutersol has been shown to be effective in male kittens, although it is not yet licensed for this use.

Can Neutersol be used in females?

Since Neutersol relies on injecting the product into the gonads (testicles), this strategy is unlikely to be suitable for use in females, who carry their gonads (ovaries) out of reach inside the abdomen.

Does Neutersol change testosterone levels?

Neutersol does not abolish testosterone production, and its effects on hormone-dependent diseases and behaviors have not been established. Early studies showed a variable decrease in testosterone averaging 52% in Neutersol-treated dogs compared with a 95% reduction in castrated dogs. Testosterone reduction in adult dogs may be less than in the 3-10 month old dogs from those studies. It is important to note that while castration has been promoted as a treatment for behavior problems, testosterone reduction has only been shown to minimally decrease indoor urine marking, roaming, sexual mounting, and dog-to-dog aggression, and does not always improve these behaviors. If sterilization is being considered for a particular dog to address one of these issues, surgical castration may be indicated.

How can you tell if a dog has been neutered with Neutersol?

As with surgically spayed female dogs, visual confirmation of sterility is difficult or impossible for Neutersol-treated dogs. Although the testicles do atrophy over time, the decrease in size is variable. A micro-chip is recommended. Some programs have used tattoos.

How much does it cost?

Abbott Animal Health has not yet announced the pricing for Neutersol. ACC&D has advised Abbott that in order for Neutersol to be practical for animal welfare use, it must be priced affordably.

Sources

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