

# Non-Surgical Fertility Control Options for Dogs and Cats with Regulatory Approval

(for more in-depth information see our product profile and position papers at [www.acc-d.org](http://www.acc-d.org))

Product/Active Ingredient	Suprelorin (for male dogs)	Progestins (synthetic progesterone) – multiple types	Zeuterin
<b>Approved for Fertility Control In</b>	Male dogs (Australia, New Zealand, European Union, Mexico, China); Male ferrets (European Union, Australia)	Female dogs, female cats (specific progestins, for specific species, have been approved in Australia, multiple European countries, Japan, US, and more. In some countries, approved products are not being sold)	Male dogs (US); EsterilSol (same formula) approved in Mexico, Colombia, Bolivia, Panama, Turkey (EsterilSol not being distributed in these countries)
<b>Off-label Contraceptive Use and Research</b>	Adult and prepubescent cats, female dogs, mammalian wildlife species	Male cats	Cats, bears, wolves, goats, livestock
<b>Approved Age</b>	Sexually mature	Sexually mature; unsafe for pregnant animals	3-10 mos in US and 3 mos+ in other countries (adult use off-label in US)
<b>Administration</b>	Implant placed beneath skin between shoulder blades	Oral and injectable options	Intratesticular injection
<b>Approximate Cost (note: cost may vary based on purchaser, quantity ordered, etc.)</b>	Est. approx. US \$90 per 9.4mg implant wholesale; \$45 per 4.7mg implant wholesale; price variable upon location	Price varies by location and brand name versus generic; typically affordable	US \$25/ml for public/non-profit entities, \$30/ml for private; avg. dose 1ml/dog (as of 2016 product sales suspended)
<b>Duration of Contraception/Sterility</b>	4.7mg labeled for 6 mos, 9.4mg for 12 mos. Dog can receive additional implant to extend contraception	Treatment must be ongoing for effective contraception; long-term use associated with adverse effects	Permanent
<b>Effect on sex hormones</b>	Effects similar to surgical sterilization when implant is active; can cause temporary hormone spike following first-time implantation	Reduces secretion of hormones necessary for reproduction	Studies suggest Zeuterin does not consistently reduce testosterone as much as surgical sterilization
<b>Possible Complications</b>	Swelling at injection site	Pyometra, mammary hyperplasia and cancer, diabetes mellitus, weight gain, lethargy, adrenal gland suppression. Complication incidence increases with higher-dose and/or longer-term use	Testicular swelling and pain, injection site reactions (most severe is ulceration), other side effects (anorexia, diarrhea, vomiting, etc., possibly caused by sedative)
<b>Considerations for Use</b>	No anesthesia or sedation required; testicles remain	No anesthesia or sedation required; requires precise dosages and administration schedule; higher doses and long-term use increase risk of adverse health effects; oral use in free-roaming cats poses risk of consumption by non-target species (e.g., wildlife)	No anesthesia required, sedation recommended; testicles remain; discard opened vial within 10 hrs; keep treated male dogs away from females in heat for 60 days; precise injection reduces risk of seepage, skin irritation, and adverse effects; ACC&D emphasizes the need for post-procedure observation and availability of a veterinarian to treat any adverse reactions.

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Product/Active Ingredient	<i>GonaCon and related GnRH formulas</i>	<i>Calcium Chloride (CaCl<sub>2</sub>) solutions</i>	<i>Suprelorin (for cats and female dogs)</i>
<b>Approved for</b>	Female white-tailed deer, female wild horses and burros (US)	Not submitted for regulatory approval; regulations and practices re: use of compounded drugs vary	Male dogs and ferrets (EU, Australia, New Zealand)
<b>Has Been Studied in</b>	Cats, rabbits, dogs, wild boar, bison, prairie dogs, California ground squirrels, Norway rats, elk	Male dogs, cats, goats, sheep, pigs, horses, cattle	Male and female cats, female dogs
<b>Ages Studied</b>	Sexually mature (has been studied in prepubescent female cats)	Prepubescent and sexually mature	Studied in both prepubescent and sexually mature cats and female dogs
<b>Administration</b>	Intramuscular injection (some studies with subcutaneous)	Intratesticular injection	Implant placed beneath skin between shoulder blades or in umbilical region
<b>Cost</b>	Anticipated to be affordable	Low (<\$1/injection for raw materials)	Est. \$90 per 9.4mg implant wholesale; \$45 per 4.7mg implant wholesale; price variable upon location
<b>Duration of Contraception/Sterility</b>	Female cats – median >3 yrs, male cats – median ~14 mos, in one study	Potentially permanent; studies conducted to date have lasted up to 1 year and observed sterility at that time	Results of limited research studies: Male cats: 6–36 mos Female cats 16–37 mos Female dogs 7–19 months
<b>Effect on sex hormones</b>	Effects similar to surgical sterilization for duration of vaccine efficacy	Available data in dogs suggests CaCl <sub>2</sub> can partially reduce testosterone. Testosterone not measured in other species	Similar to surgical sterilization (can induce a brief fertile estrus in sexually mature females prior to contraception)
<b>Possible Complications</b>	Adverse injection site reactions in dogs; seemingly non-painful masses developed at injection site in some cats	Testicular swelling and pain, injection site reactions (most severe is ulceration)	Limited studies have observed incidence of uterine disease such as pyometra in a portion of female dogs and cats
<b>Considerations for Use</b>	No anesthesia required; sedation may be warranted for fractious animals; can be given in a “field” setting; current formulas not safe for dogs	No anesthesia required, sedation recommended; offers potential value in locations lacking approved sterilization options; compounding presents a safety risk for animals, requires knowledge of local regulations; injection must be given precisely to reduce risk of seepage, skin irritation, and adverse effects; ACC&D emphasizes post-procedure observation and availability of a veterinarian to treat any adverse reactions	No anesthesia or sedation required; can be given in a “field” setting; can induce a brief fertile estrus in sexually mature females before contraceptive becomes effective