

Gonad removal in small animals, a controversial issue

“As veterinarians, we’re constantly weighing up risk vs benefit when it comes to the clinical decisions we make. We constantly get asked about when you should desex small animals. The challenge is that as veterinary medicine has advanced the lives and longevity of the animals we treat, living longer has begun to expose some of the unintended consequences of long-established procedures like gonad removal.”

Dr Xavier Schneider, Veterinarian at Queensland Veterinary Specialists.

Overpopulation remains a challenge today.¹

- Surgical sterilisation of dogs and cats is one of the most frequently employed methods of preventing pet overpopulation.²
- While a routine part of practice, the timing of gonadectomy remains controversial as it takes into account a mixture of benefits and adverse effects that depend upon the age at neutering, sex, species and breed.³

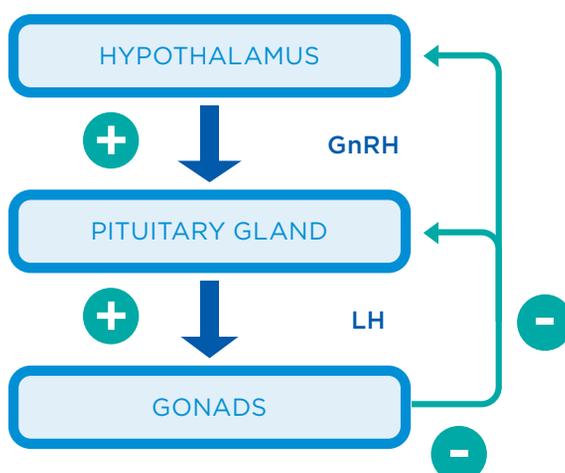
However, at the moment there is limited evidence to recommend an ideal age for permanent sterilisation that takes into consideration its long-term health effects.⁴

What happens when you neutralise one piece of the puzzle?

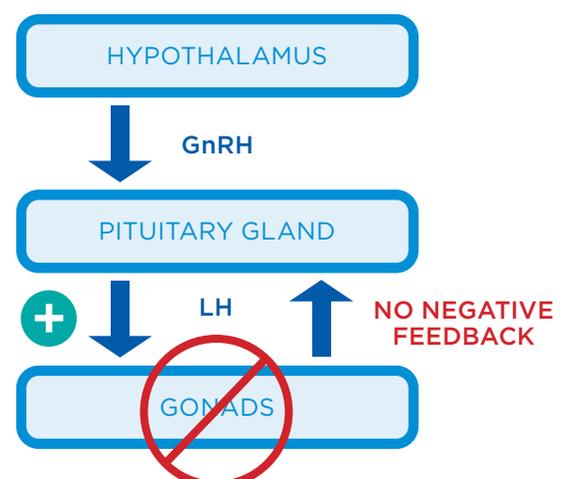
“Knowing that sex hormones interact with more than just the gonads is not a new concept. What is newer to us, is dealing with an increase in the prevalence of conditions that appear later in life and recognising the influence hormone dysregulation plays,” explained Dr Schneider.

“Knowledge of the benefits and detriments associated with this procedure enables veterinarians to provide appropriate science to clients to make informed decisions and promote animal health.”^{4,5}

A. Normal Adult Mammal



B. Gonadectomised Mammal



What are the long-term consequences of gonadectomy?

Some key areas of evidence:

Obesity & metabolism

Gonadectomy is the single largest risk for the development of obesity in dogs, driving an increase in appetite.⁴⁻⁶ Neutered dogs experience approximately 30% decrease in daily energy requirements.⁵

Intervertebral disc herniation (IVDH)

Increase in risk of IVDH in Dachshunds neutered before 12 months of age compared with after 12 months of age.⁶

Hip dysplasia

There may be an increased incidence in hip dysplasia in neutered dogs.^{3,7} Age of gonadectomy may play a role (as growth rate is unaffected but physal closure may be delayed).² Puppies that underwent gonadectomy before 5.5 months of age had a 6.7% incidence of hip dysplasia, while those neutered between 5.5 months and 1 year of age had an incidence of 4.7%.⁷

Osteosarcoma

Dogs have around a two-fold increased risk of osteosarcoma when neutered compared to intact dogs.^{10,11}

Longevity

A study in Rottweilers found intact animals lived 30% longer and had less cancer than desexed animals.⁹

Genital tract

Gonadectomy prevents testicular and epididymal disorders such as neoplasia, torsion of the spermatic cord, orchitis and epididymitis.³

Prostate

Fewer gonadectomised dogs develop benign prostatic hyperplasia,^{3,8} while the risk of prostate cancer increases (odds ratio 2.84).⁸

Cranial cruciate ligament

The prevalence of CCL rupture is around 50% higher in gonadectomised male dogs than intact animals.^{3,8}



“ It’s not a one-size fits all subject. We need to be able to have conversations with owners considering elective gonadectomy not just about potential consequences today, but tomorrow as well. ”



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