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### Early Age Altering of Kittens 2006

- ◆ Terminology:
  - ◆ Spay (ovariohysterectomy): surgical removal of the uterus and ovaries in a female; in some countries, only ovariectomy (removal of ovaries) is performed and the uterus is left intact
  - ◆ Neuter (castration, orchietomy, orchidectomy): surgical removal of the testicles in a male; may also be used synonymously with "spay"
  - ◆ Altering, gonadectomy, sterilization: refer to either spay or neuter
- ◆ Early age altering (EAA) refers to gonadectomy between 6 and 16 weeks of age
  - ◆ Traditional gonadectomy age is about six months
  - ◆ In some countries, gonadectomy may be delayed until one year of age
- ◆ Prepuberal gonadectomy: altering before puberty (age of sexual maturity)
  - ◆ Onset of puberty varies with season, environment, growth, nutrition
    - ◆ Females: between 4 and 21 months of age
    - ◆ Males: between 8 and 10 months of age
  - ◆ Prepuberal gonadectomy is commonly recommended to avoid unwanted pregnancy and to reduce the risk of mammary cancer
  - ◆ What is new is the earlier age at which prepuberal altering is performed
- ◆ EAA is a desirable approach to control of pet overpopulation for shelters; enables pre-adoption altering and avoids risk of owner non-compliance with altering contracts; there are also health benefits to EAA
- ◆ Cat breeders may desire EAA for pet kittens before they are sold
  - ◆ Responsible breeders strive to improve the quality of their breed by ensuring only the best specimens contribute to future generations
  - ◆ Certain animals should not be bred because they do not meet the breed standard or may carry an undesirable trait or genetic disease
  - ◆ Breeders should be responsible for the kittens they produce; if a kitten is not destined for a breeding program, it should be altered
  - ◆ Sales contracts requiring pet owners to spay/neuter may not be easy to control or enforce; even when owners do alter pets, 20% have a litter before surgery
- ◆ There are health benefits from altering cats not needed for breeding:
  - ◆ Altered cats make better pets: undesirable behaviours associated with reproduction are eliminated or reduced, such as yowling, fighting, roaming, aggression, urine spraying/markings
  - ◆ Altered cats are healthier and live longer lives: the risk of cancers and infections of the reproductive tract and mammary glands is eliminated
  - ◆ Altered male cats are less likely to fight: reduces the risk of infectious diseases such as feline immunodeficiency virus

- ◆ EAA schedules: all kittens should be in good health before altering, be treated for external and internal parasites; ideally kittens should not be rehomed until they are over 12-14 weeks old
  - ◆ Eight weeks: 1<sup>st</sup> vaccination
  - ◆ Ten weeks: alter
  - ◆ Twelve weeks: 2<sup>nd</sup> vaccination
  - ◆ Fourteen weeks +: rehome
 OR
  - ◆ Eight weeks: 1<sup>st</sup> vaccination
  - ◆ Twelve weeks: 2<sup>nd</sup> vaccination
  - ◆ Fourteen weeks: alter
  - ◆ Fifteen weeks +: rehome
- ◆ Major veterinary organizations around the world are supportive of EAA, including:
  - ◆ American Veterinary Medical Assoc.
  - ◆ Canadian Veterinary Medical Assoc.
  - ◆ British Small Animal Veterinary Assoc
  - ◆ European Society of Feline Medicine
  - ◆ Feline Advisory Bureau (U.K.)
- ◆ Major cat registries around the world are supportive of EAA, including:
  - ◆ Cat Fanciers' Assoc. (CFA)
  - ◆ The International Cat Assoc. (TICA)
  - ◆ Governing Council of the Cat Fancy (GCCF)
- ◆ Objections to EAA include concerns about:
  - ◆ Effect on growth
  - ◆ Fracture risk
  - ◆ Obesity
  - ◆ Behavioural changes
  - ◆ Increased risk of disease
  - ◆ Safety of surgery and anesthesia in young kittens
- ◆ Growth: Testosterone and estrogen assist maturation of the growth plate in long bones, growth stops when these growth plates are mature (physeal closure)
  - ◆ Intact cats have distal radial physeal closure at 1 year of age or older
  - ◆ Cats altered at 7 weeks and 7 months of age had distal radial physeal closure about 8 weeks later than intact cats
  - ◆ Adult size is not affected by age at spay/neuter

- ◆ Fracture Risk: Delayed physeal closure may predispose cats to femoral capital growth plate fractures (Salter fractures)
  - ◆ Femoral capital growth plate normally closes between 7.5 and 10 months
  - ◆ Risk factors: obese, neutered male, delayed physeal closure
  - ◆ Certain breeds may have higher risk such as Maine Coon
  - ◆ Fracture risk would be the same for cats altered at any age that results in delayed physeal closure, not just EAA cats
  - ◆ Prevalence of these fractures is unknown but they are uncommon
- ◆ Obesity: A multifactorial problem involving diet, exercise, age and other factors
  - ◆ Altered cats have a lower metabolic rate than sexually intact cats regardless of the age at gonadectomy
  - ◆ Altered male cats require 28% less calories than intact male cats
  - ◆ Altered female cats require 33% fewer calories than intact female cats
- ◆ Behaviour:
  - ◆ Compared to altered cats, sexually intact cats show less affection to humans and more aggression to other cats
  - ◆ EAA male cats are less aggressive to vets, show less urine spraying
  - ◆ No difference in the prevalence of significant behaviour problems based on age at altering
- ◆ Disease Risk:
  - ◆ Lower urinary tract disease:
    - ◆ Caused by a wide variety of factors such as diet, water intake and stressors
    - ◆ The diameter of the male urethra is no smaller in EAA cats than in intact cats
    - ◆ Age at altering does not influence risk of urinary tract disease; one study showed a lower risk of urinary tract obstruction in EAA male cats
  - ◆ Other health issues: Several long-term studies have been performed
    - ◆ EAA is not associated with any increased risk of disease
    - ◆ EAA is associated with **lower** risk of asthma and gingivitis for males and females
    - ◆ EAA is associated with **lower** risk of abscesses in male cats
- ◆ Anesthesia and Surgery Risks:
  - ◆ EAA does not increase morbidity or mortality
  - ◆ Kittens altered at under 12 weeks have lower postoperative complication rates than those altered at over 23 weeks of age
  - ◆ Surgical benefits from EAA:
    - Less bleeding
    - Improved visualization of organs
    - Shorter surgery times
    - More rapid recovery

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## Websites

The Cat Group policy statement, Timing of Neutering:

<http://www.users.waitrose.com/~thecatgroup/neut.html>

Winn Feline Foundation:

<http://www.winnfelinehealth.org/health/early-spay-neuter.html>