

Cats lecture notes

Video 1

Cat breeds

Although cats are less genetically diverse than dogs, there is still a wide variety of sizes, colours, shapes and breeds of cats.

In practice, the most common cats are domestic short hairs (DSH) and domestic long hairs (DLH). These are not specific breeds but cats of no particular breed described by coat length. They are often then further described by coat colour e.g. tortoiseshell, tabby, ginger.

There are gender associations with some coat colours among non-specific breed cats e.g. ginger cats are predominantly male, about 75-80%.

In a reverse colour association, even fewer calicos and tortoiseshells are male, approximately 5%. The small number of males are very often sterile.

Coat colour associations

Generic

65 to 85 percent of white cats with both eyes blue are deaf and 40 percent of cats with one blue eye are deaf. While white cats with non-blue eyes are more commonly deaf than the general population, the genetic mutation that creates blue eyes and white fur also causes malformation of structures inside the ear.¹

Non-genetic

Cats with non-pigmented ears and noses i.e. white, regardless of the colour of the rest of the coat or the eyes are more prone to auricular and nasal tumours due to a lack of pigmentation.

Classification of pure-bred cats by body type

Oriental – tall and finely built with pointy ears e.g. Siamese

Foreign – e.g. Russian Blue

Standard cat – DSH

Cobby - becoming rounded and stocky e.g. Scottish Fold, Birman

Large cats e.g. Maine Coon, Ragdoll. You will notice that the Birmans and Ragdolls look quite similar. The main difference is in the size with Ragdolls being quite a bit larger.

Pure breeds commonly seen are Siamese, Burmese, Ragdoll, Russian Blue, Maine Coon, Scottish Fold and Birman among many others.

Video 2

At any age cats have a need for basic welfare in their environment, diet, physical and mental stimulation and health care.

Environment

Indoors - resting, climbing and sufficient resources are the most important aspects inside the home. Getting a kitten comfortable with its carrier is also important. The video from International Cat Care² has some extra information.

Outdoors – if they are confined (approximately one third of cats in the most recent survey), an outdoor space with some places to climb and rest is ideal.

Kittens should not be allowed outside unsupervised until 4-6 months of age (if ever!)

Diet

Young animals have some different dietary requirements from adults, particularly in protein, fat, calcium and phosphorus levels. The extra protein is required for growth and muscle development and the higher level of fat gives a greater calorie density needed to allow a kitten to eat enough despite its small stomach. Calcium and phosphorus and the correct balance between those is vital for bone development. Inadequate calcium in a diet can lead to poor bone calcification and pathological fractures.

For both kittens and adults, it is recommended that a good quality commercial food appropriate for the age of the animal make up the majority of the diet. If owners want to prepare home-made foods, they need to be aware that cats must have meat in their diet as their bodies cannot synthesise taurine, an essential amino acid.

There are some foods/substances which cats should not eat. Some that are particularly attractive to cats are grapes and sultanas (can cause renal failure), stones from stone fruit (contain cyanide when broken down), lilies (renal failure) and anything with string attached (string foreign bodies can saw through the intestinal wall).

Exercise, enrichment and behaviour

Play gives kittens the opportunity for all three together if normal hunting and pouncing behaviours are part of the game. Short playtimes a few times a day provide exercise and enrichment.

Adult cats are less inclined than kittens to be naturally active so indoor only cats need to be encouraged and provided with good play spaces. They will tend to be most active in the morning and evening.

Coat care

Cats shed every day and many go through significant sheds twice a year. Grooming can reduce problems due to hair balls (ingested hair during self-grooming) which are quite common. It is also important in cats, especially long haired cats, that are at risk of getting grass seeds stuck in their fur.

Cat allergy is not to the hair itself but to cat dander, microscopic pieces of dry cat skin which contain Fel d 1, a glycoprotein secreted from the sebaceous glands and to a lesser extent saliva and urine. Cat allergies are about twice as common as dog allergies.

Video 3

Healthcare

Vaccines

Vaccination protocols in Australia are based on the guidelines compiled by the World Small Animal Veterinary Association (WSAVA) and last published in 2015. The WSAVA defines core vaccines (those recommended worldwide for every animal) and non-core vaccines (those required by only those animals whose geographical location, local environment or lifestyle places them at risk of contracting specific infections.)

Core vaccines

The core vaccines for cats are feline panleukopenia (FPV) – also known as feline parvovirus which causes vomiting and diarrhoea, feline herpes virus 1 (FHV-1) and feline calicivirus (FCV), both of which are respiratory viruses. Combined, these make up an F3 vaccine. The latter two are not fully effective as there are a large number of strains.

Vaccine protocols

There are some general principles. Young animals will have 2-3 doses of vaccine in the initial sequence, then a booster 12 months later. The reason they need multiple doses is that the antibodies kittens receive from their mother through the placenta or colostrum (known as maternally-derived antibody) blocks the effectiveness of vaccines for several weeks.

The decline of maternally derived antibody in neonates has a distinct half-life but the tricky thing is that the half-life of the antibody against each pathogen is different. Because of this there are different lengths of time during which maternally derived antibody both protect the kitten and interfere with vaccination.

As well as that, the quantity of maternally derived antibody will vary between individuals in a litter and between litters. This means that for any given puppy or kitten the real quantity of maternally derived antibody on a given day is unknown. There are titre tests available for some antibodies but these are expensive.

A common primary core vaccination protocol based on the WSAVA guidelines would be:

6-8 wks FPV, FHV-1, FCV (F3)

· **12-14 wks** FPV, FHV-1, FCV (F3)

· **16-18 wks** FPV, FHV-1, FCV (F3)

12 months after 3rd kitten vaccination FPV, FHV-1, FCV (F3)

All vaccines are given subcutaneously in the neck.

Adults will commonly receive an F3 annually.

Non-core vaccines

Decisions about whether to give noncore vaccines are made based on 3 major criteria:

Prevalence of diseases in the local area

Lifestyle of the cat – indoor vs outdoor, breeding cattery

Risk of vaccine sarcomas

Feline immunodeficiency virus

This is related to HIV and is transmitted through bite wounds. Because of this transmission method, aggressive male cats are most at risk.

However, there are several issues with the vaccine:

It is not fully protective - one study recorded only a 56% protective rate.

Some of the FIV tests available and still used in practice are not able to distinguish between antibodies from natural infection and those from vaccination. This could be a significant problem for example in a shelter where a positive test may result in euthanasia.

There is risk of vaccine sarcoma.

The vaccine is not longer available in the US or Canada because of the 3 issues listed and because a large percentage of cats are indoors so only a small number were using the vaccine.

Feline leukaemia virus (FeLV)

FeLV also causes immune suppression and increases the risk of developing neoplasias. It is usually between friendly cats during grooming or by sharing food bowls as the virus is shed in saliva. It can also be transferred via the placenta or in milk. It is not used that much in Victoria because of the low prevalence of disease but if you are working in an area with high prevalence or in breeding catteries, testing and vaccination may be worthwhile. This vaccine is available in the US

Rabies – not mandatory in as many places as it is for dogs but some areas require it

Gastrointestinal parasites

Roundworms can be a serious problem for kittens, especially for those that become infected early in life. Most common signs are pot belly, vomiting and diarrhoea. The other intestinal worms which affect cats are hookworms, whipworms and tapeworms. A number of common intestinal worms in cats are zoonotic so treatment of animals is also important for human health.

All kittens need to be wormed every two weeks until 12 weeks of age, then every month until 6 months of age. After six months of age an adult cat needs to be wormed every 3 months.

It would be ideal to do a faecal egg count to determine whether they actually need worming to help guard against resistance.

Fleas

Fleas can cause significant anaemia in young kittens as young kittens are very small and do not have blood to spare. Adults are most often itchy. Diagnosis is by seeing adult fleas or flea dirt. Kittens at a 2nd vacc should be able to be treated with a commercial product but always read the label. Also be aware that some dog flea products are toxic to cats.

Video 4

Reproduction and breeding management in cats

Most vets will spend far more time in practice desexing cats and talking about population control than any other aspect of feline reproduction.

Both male and female cats can start reproducing from about 4-5 months of age and they have a strong drive to mate. A female kitten born early in kitten season, maybe about September, could, in some cases, have her first litter by the end of the season in autumn. They are seasonally polyoestrous, so that they cycle fairly much continuously from spring to autumn and may continue to cycle through the winter. Oestrus is called being on heat, in season, on call. Lasts 7-10 days and come into heat again after 2-3 weeks. They are induced ovulators i.e. only ovulate after mating. Females will often vocalise more than usual, roll on their back exposing their belly, stick their bottom in the air and become more affectionate than usual, although a few will become more aggressive.

After a litter they can start cycling again soon after weaning so it is possible to have multiple litters in one breeding season, or in fact all year round.

Gestation and weaning

Pregnancy in cats is quite often not planned by humans; sometimes owners don't realise they are pregnant until they give birth.

Gestation lasts approximately 63 days

Ultrasound from 3 weeks post-breeding is the best way to detect pregnancy and assess viability of kittens. Lateral abdominal radiograph in late gestation is the best way to assess number of kittens.

Queening is mostly uneventful; brachycephalics are the most likely to have problems

Start weaning at 4 weeks - gradual introduction of milk replacer and wet kitten food. Usually transition over 4-6 weeks to solid food

Desexing

Often done at 5-6 months for both genders. Every cat that is desexed is a great community service as cats are very efficient at reproducing – population control is the main reason to desex cats. It also prevents or reduces hormone-mediated behaviour problems e.g. urine spraying by toms.

Female surgery is a spay (ovariohysterectomy) and male a castration (orchietomy). All animals desexed will be tattooed in the left ear.

References

1. Cornell Feline Health Center. <https://www.vet.cornell.edu/departments-centers-and-institutes/cornell-feline-health-center/health-information/feline-health-topics>
2. International Cat Care <https://www.youtube.com/watch?v=6Ube2tn-qpc&t=218s>