

# Introduction to the Veterinary Profession

VETS30030 / VETS90122



Module – Non-production species

Dogs and cats

Topic 3 – Dogs

Video 1 – Common dog breeds

Rebekah Brown

[rebekahb@unimelb.edu.au](mailto:rebekahb@unimelb.edu.au)

# Outline of cats and dogs learning sessions

## **Dogs and cats in the community**

1. Where our pets come from and why we keep them
2. Regulation of pets in the community
3. Pets who need new homes – managing health in animal shelters

## **Happy, healthy cats**

1. Common cat breeds and their characteristics
2. Welfare and health needs of kittens
3. Welfare and health needs of cats
4. Reproduction and breeding management

## **Happy, healthy dogs**

1. **Common dog breeds and their characteristics**
2. Welfare and health needs of puppies
3. Welfare and health needs of adult dogs
4. Reproduction and breeding management

# Intended learning outcomes – Dogs

## **Identify common dog breeds and their characteristics**

Describe the major welfare needs of dogs

Describe a standard management plan for a pet dog to maximise its health including nutrition, vaccination, worming and other standard healthcare procedures

Describe the reproductive cycle and reproductive management of dogs to maximise health and welfare and to contribute to population control

# Classifying dogs





# Large breed purebreds

Labrador Retrievers



German Shepherd



Images: Wikimedia commons

Golden Retriever



Image: [allgoldenretriever.com](http://allgoldenretriever.com)

# Medium purebreds



Staffordshire Bull Terrier



Miniature Schnauzer



Cavalier King Charles Spaniel

Images: Wikimedia commons

# Small purebreds

Chihuahua



Image: DogsNSW.org

Toy Poodle



Image: Vetstreet.com

West Highland White Terrier



Image: Wikimedia commons

# Australian National Kennel Council classification system

Group 1: **Toys** - usually the very smallest dogs e.g. Pug, Toy Poodle

Group 2: **Terriers** – originally went down holes to hunt e.g. Jack Russell, Staffy

Group 3: **Gundogs** - originally used to hunt birds e.g. Labs, Retrievers

Group 4: **Hounds** – the first hunters. Rely either mostly on sight e.g. Whippets or mostly on scent e.g. Beagles

Group 5: **Working dogs** - e.g. Border Collie, Maremmas acting as sheep guards

Group 6: **Utility dogs** - rescue dogs e.g. Newfoundland, Bernese Mountain Dog

Group 7: **Non-sporting dogs** – includes several brachycephalic breeds e.g. Bulldogs and also Poodles



# Australian National Kennel Council classification system

## Group 4: Beagle



Image:dogzone.com

## Group 4: Whippet



Image:Wikimedia commons

## Group 5: Maremma



Image:theland.com.au

## Group 6: Newfoundland



Image:akc.org

# Working dogs

Border Collie



Image: DogsNSW.org

Kelpie



Image: purina.com

Cattle Dog



Image: Wikimedia commons

# Brachycephalic dogs

Pug



Image: Wikimedia commons

French Bulldog



Image: Wikimedia commons

Boxer

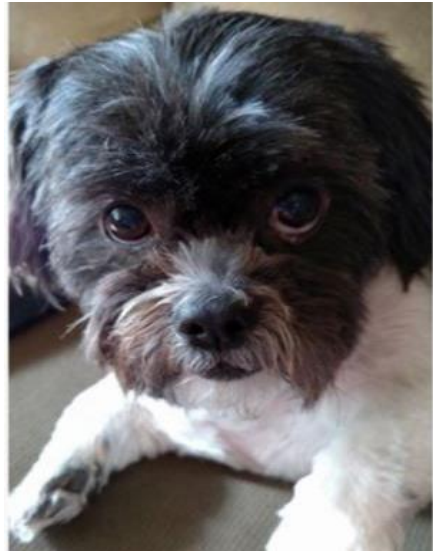


Image: Wikimedia commons

# Mixed breed dogs



Images: vetstreet.com



Litter mates!



Image: Wikimedia commons

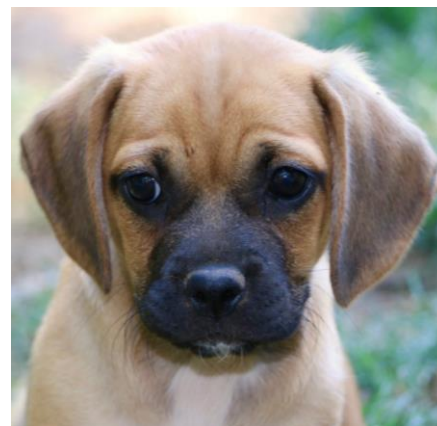


# Designer breeds



Labradoodle

Images: Wikimedia commons



Puggle

Image: pawster.com



Maltese x Shih Tzu



Cockapoo

Image: vetstreet.com

# Introduction to the Veterinary Profession

VETS30030 / VETS90122



Module – Non-production species

Dogs and cats

Topic 3 – Dogs

Video 2 – Welfare needs of dogs

Rebekah Brown

[rebekahb@unimelb.edu.au](mailto:rebekahb@unimelb.edu.au)

# Outline of cats and dogs learning sessions

## **Dogs and cats in the community**

1. Where our pets come from and why we keep them
2. Regulation of pets in the community
3. Pets who need new homes – managing health in animal shelters

## **Happy, healthy cats**

1. Common cat breeds and their characteristics
2. Welfare and health needs of kittens
3. Welfare and health needs of adult cats
4. Reproduction and breeding management of cats

## **Happy, healthy dogs**

1. Common dog breeds and their characteristics
- 2. Welfare needs of dogs and puppies**
3. Health needs of dogs and puppies
4. Reproduction and breeding management of dogs

Identify common dog breeds and their characteristics

**Describe the main welfare needs of puppies and dogs**

Describe a standard management plan for a pet dog to maximise its health including nutrition, vaccination, worming and other standard healthcare procedures

Describe the reproductive cycle and reproductive management of dogs to maximise health and welfare and to contribute to population control



# Lifelong healthcare and management

**Good lifelong healthcare and management is central to the welfare of animals**



Images: Amanda Jones  
Dog Years: Faithful Friends, Then & Now

# Welfare needs of dogs at any age

## Appropriate:

Environment

Diet

Exercise

Behaviour

Health care



<https://www.rd.com/list/how-to-train-your-puppy/>

## Welfare needs - environment

- Own bed where they can rest undisturbed
- Poisonous or hazardous items stored safely out of reach
- Safe vehicular travel – best travelling on someone's lap on the very first trip home. In the longer term, familiarise with a crate or travel harness
- Secure housing



<https://dogtime.com/reference/dog-travel/66-driving-with-dogs>

## Welfare needs of puppies - diet

Ideally fed commercial puppy diet as their requirements for a number of key nutrients are different from adults (not a complete list)

Nutrient	Puppy	Adult
Protein (%)	22	18
Fat (%)	8	5
Calcium (%)	1	0.6
Phosphorus (%)	0.8	0.5

<https://www.petmd.com/blogs/nutritionnuggets/dr-coates/2016/january/whats-difference-between-adult-dog-food-and-puppy-food>

Can change to adult diet when they are about 80% of adult size. Age varies roughly between 9 months (very small breeds) and 16 months (large and giant breeds).



## Welfare needs of dogs - diet

- Commercial food gives complete, balanced diet
- Well-balanced home diets can be fed
- Amount varies with lifestyle and health
- Treats can be given e.g. for training but shouldn't be added on to diet



[www.vetstreet.com](http://www.vetstreet.com)



[www.akc.org](http://www.akc.org)

# Welfare needs of dogs - diet

- BARF (Biologically Appropriate Raw Food)/RMBD (Raw Meat Based Diet)
- Owners may not like or trust commercial food and want to feed their animals foods closer to what they would have eaten in the wild
- Raw meat diets have become increasingly popular
- Concerns – is the diet nutritionally complete for the pet, especially growing animals?
  - raw meat quite commonly contains *Salmonella*



# Welfare needs of dogs - diet

## Foods to avoid

- Onions
- Chocolate
- Coffee
- Cooked bones
- Fatty foods
- Mouldy foods



<http://www.dachshund-owner-guide.com/dachshund-colors.html>



[http://www.usopen.org/en\\_US/news/articles/2016-09-09/men\\_look\\_to\\_be\\_semitough.html?promo=right\\_rail](http://www.usopen.org/en_US/news/articles/2016-09-09/men_look_to_be_semitough.html?promo=right_rail)

## Welfare needs of puppies - exercise

- Opinions vary on the amount of exercise is appropriate
- One rule of thumb is 5 minutes per month of age until fully grown
- Need to familiarise them with harness/collar and lead walking
- Should not be over-exercised, especially large-breed pups
- Take care in public places until 10 days after final vaccination





## Welfare needs of dogs - exercise

- Out of the home or garden at least once daily
- Off-lead time is important for mental and physical health
- Amount of time needed depends on factors such as age and breed



<http://dogtrainingblogger.com/>

# Welfare needs of dogs - behaviour

Covered in small animal behaviour



<https://www.petful.com/pet-products/indestructible-dog-toy/>



<http://ruffhounds.co.uk/>

# Welfare needs of dogs - coat care

Dogs can either have hair or fur

Hair:

- single coat
- longer growth cycle
- more likely to trap allergens (Can f 1)
- needs regular grooming



<http://www.goldensbridgevet.com/grooming.pml>



<http://www.telegraph.co.uk>





# Welfare needs of dogs - coat care

## Fur:

- may be single or double coat
- denser (more follicles per cm<sup>2</sup> than hair)
- sheds more frequently
- requires less grooming than hair coats



Single coat- Vizsla

<https://www.petcoach.co/breed/vizsla>



Double coat – Alaskan Malamute

[https://www.omlet.co.uk/breeds/dogs/alaskan\\_malamute/](https://www.omlet.co.uk/breeds/dogs/alaskan_malamute/)



# Toenails

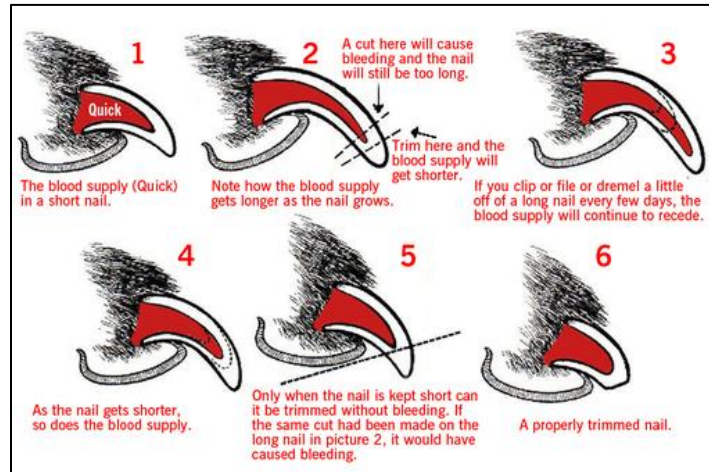


<http://www.contentedcreatures.com/tips-tricks/its-time-to-talk-about-nail-trims/>



<http://www.thedogtrainingsecret.com/blog/greatest-doggy-tip/>

# Toenails



[https://dogs.thefuntimesguide.com/2008/06/how\\_to\\_trim\\_dog\\_nails.php](https://dogs.thefuntimesguide.com/2008/06/how_to_trim_dog_nails.php)



<http://www.healio.com/pediatrics>



<http://www.dogscatspets.org/dogs/dog-nail-bleeding/how-to-stop-dog-nail-bleeding-using-styptic-powder-corn-starch-soap-and-identifying-the-quick/>

# Introduction to the Veterinary Profession

VETS30030 / VETS90122



Module – Non-production species

Dogs and cats

Topic 3 – Dogs

Video 3 – Health needs of puppies and dogs

Rebekah Brown

[rebekahb@unimelb.edu.au](mailto:rebekahb@unimelb.edu.au)

# Outline of cats and dogs learning sessions

## **Dogs and cats in the community**

1. Where our pets come from and why we keep them
2. Regulation of pets in the community
3. Pets who need new homes – managing health in animal shelters

## **Happy, healthy cats**

1. Common cat breeds and their characteristics
2. Welfare needs of kittens and cats
3. Preventative health kittens and cats
4. Reproduction and breeding management of cats

## **Happy, healthy dogs**

1. Common dog breeds and their characteristics
2. Welfare needs of puppies and dogs
- 3. Health needs of puppies and dogs**
4. Reproduction and breeding management of dogs

## Intended learning outcomes – Dogs

Identify common dog breeds and their characteristics

Describe the main welfare needs of puppies and dogs

**Describe a standard management plan for a pet dog to maximise its health including nutrition, vaccination, worming and other standard healthcare procedures**

Describe the reproductive cycle and reproductive management of dogs to maximise health and welfare and to contribute to population control



## Preventative health care - dogs

Vaccination

Endoparasites - intestinal worms  
- heartworm

Ectoparasites – fleas  
- ticks

Dental care



<http://www.vetwest.com.au/pet-library/e>

# Vaccination

**Core vaccines** – sometimes called C3 or DHP/DAP

Distemper - canine distemper virus (mostly GI signs)

Hepatitis – canine adenovirus type 1 (apathy, discharge from eyes)

Parvo – parvovirus (mostly GI signs)

**Common non-core vaccines** used in south-eastern Australia –  
canine cough (kennel cough)

Canine parainfluenza virus

*Bordetella bronchiseptica*

Most boarding kennels require dogs to have a C5, which is the core vaccines plus kennel cough.



# Vaccination

## Example primary sequence vaccination protocol – SE Australia

A vaccination protocol where triennial vaccines are used could be:

- **6-8 wks** Distemper, Hepatitis and Parvovirus (C3)
- **12-14 wks** Distemper, Hepatitis, Parvovirus, Parainfluenza virus, *Bordetella bronchiseptica* (C5)
- **16-18 wks** Distemper, Hepatitis, Parvovirus, Parainfluenza virus, *Bordetella bronchiseptica* (C5)
- **12 months after 3<sup>rd</sup> puppy vaccination** Distemper, Hepatitis, Parvovirus, Parainfluenza virus, *Bordetella bronchiseptica* (C5)

# Vaccination

## DHP/C3 vaccines can be annual or triennial

- There are vaccines with different durations of immunity for distemper, hepatitis and parvovirus i.e. the core vaccines
- Some require annual boosters e.g. Protech C3
- Others are given triennially e.g. Nobivac DHP



# Vaccination

## Respiratory vaccines are different

Vaccines for parainfluenza virus and *Bordetella bronchiseptica* MUST be given annually.



[www.hallvet.com.au](http://www.hallvet.com.au)



Image:rockhallveterinary.ie



# Vaccination

## Example adult vaccination protocol

- **12 months after 3<sup>rd</sup> puppy vaccination** Distemper, Hepatitis, Parvovirus, Parainfluenza virus, *Bordetella bronchiseptica* (C5)
- **2 years old** - Parainfluenza virus, *Bordetella bronchiseptica* i.e. respiratory component
- **3 years old** - Parainfluenza virus, *Bordetella bronchiseptica*
- **4 years old** - Distemper, Hepatitis, Parvovirus, Parainfluenza virus, *Bordetella bronchiseptica* (C5)

# Vaccination

Dogs first vaccinated as adults or with an unknown vaccination status should be given 2 doses 4-6 weeks apart.

Not considered fully protected until 10 days after the last dose, although they could potentially have naturally acquired immunity.



<https://www.aler.si/novice-in-nasveti/preventivna-cepljenja-pri-psih>

## Vaccination – many non-core vaccines

- Many non-core vaccines are used in different parts of the world
- Rabies is one of the most common and is a legal requirement in many places as it is a potentially fatal zoonotic disease (exotic to Australia)
- Leptospirosis is also commonly given across the world e.g. recommended in Singapore, Hong Kong, Nth America



<https://www.valleyvet.com/c/pet-supplies/dog-vaccines/dog-rabies-vaccines.html>

# Vaccination – example protocol for Hong Kong vs Singapore

- HK
  - DHPPiL - all dogs yearly
  - Rabies required by law
  - Multivalent Leptospirosis - outdoor dogs
  - Bordetella – socialising/boarding dogs
- Singapore
  - DHP
  - Multivalent Leptospirosis – dogs visiting bushland
  - Bordetella/Pi – socialising/boarding dogs
  - Rabies exotic – NOT required



# Vaccination – American Kennel Club

Puppy's Age	Recommended Vaccinations	Optional Vaccinations
6 – 8 weeks	Distemper, parvovirus	Bordetella
10 – 12 weeks	DHPP (vaccines for distemper, adenovirus [hepatitis], parainfluenza, and parvovirus)	Influenza, Leptospirosis, Bordetella, Lyme disease per lifestyle as recommended by veterinarian
16 – 18 weeks	DHPP, rabies	Influenza, Lyme disease, Leptospirosis, Bordetella per lifestyle
12 – 16 months	DHPP, rabies	Coronavirus, Leptospirosis, Bordetella, Lyme disease
Every 1 – 2 years	DHPP	Influenza, Coronavirus, Leptospirosis, Bordetella, Lyme disease per lifestyle
Every 1 – 3 years	Rabies (as required by law)	none

<https://www.akc.org/expert-advice/health/puppy-shots-complete-guide/>



# Gastrointestinal parasites

**Roundworms** (mostly *Toxocara canis*) - **greatest concern in young puppies as can be transferred in utero or in milk.**

Diagnose by finding eggs or adults in faeces or presumptive diagnosis in pot-bellied puppies or kittens



Image:researchgate.net

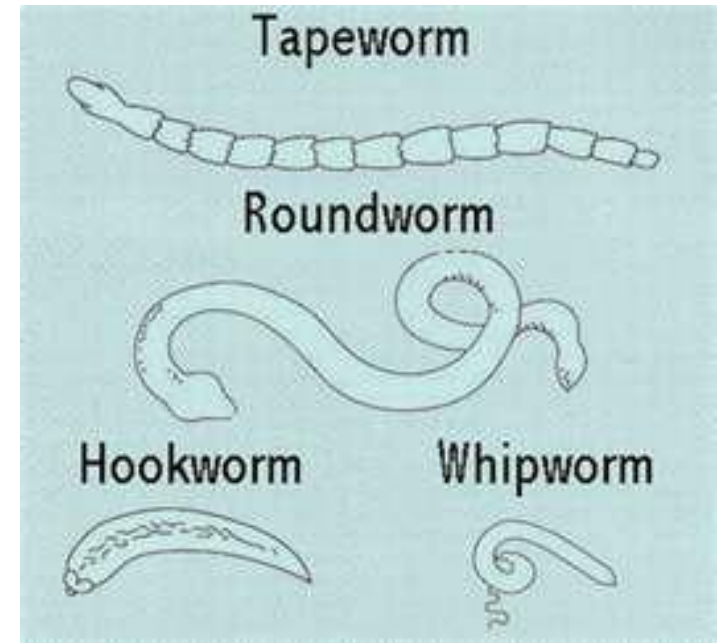
## Endoparasites - gastrointestinal

**Roundworms** – clinically signs much more common in puppies. Encysted larvae long-term issue in breeding bitches

**Hookworms** – attach to wall of SI and feed on blood.  
Diagnose by faecal exam

**Whipworms** – attach to the wall of LI. Diagnose by finding eggs in faeces

**Tapeworms** – In urban areas most common species is *Dipylidium caninum* (flea tapeworm). Fleas act as intermediate host. In rural areas, hydatid tapeworm (*Echinococcus granulosus*) is common and a significant zoonosis



# Gastrointestinal parasites

**A common intestinal worming protocol would be to treat every 2 weeks until 12 weeks, then monthly until 6 months, then 3 monthly for life.**

Up until 12 weeks it is common to use a product that only treats intestinal worms and often in a syrup formulation as it is easier to dose a small puppy

At 2<sup>nd</sup> or 3<sup>rd</sup> vaccination, puppies often start on one of the combination parasiticides (discussed later in this video)

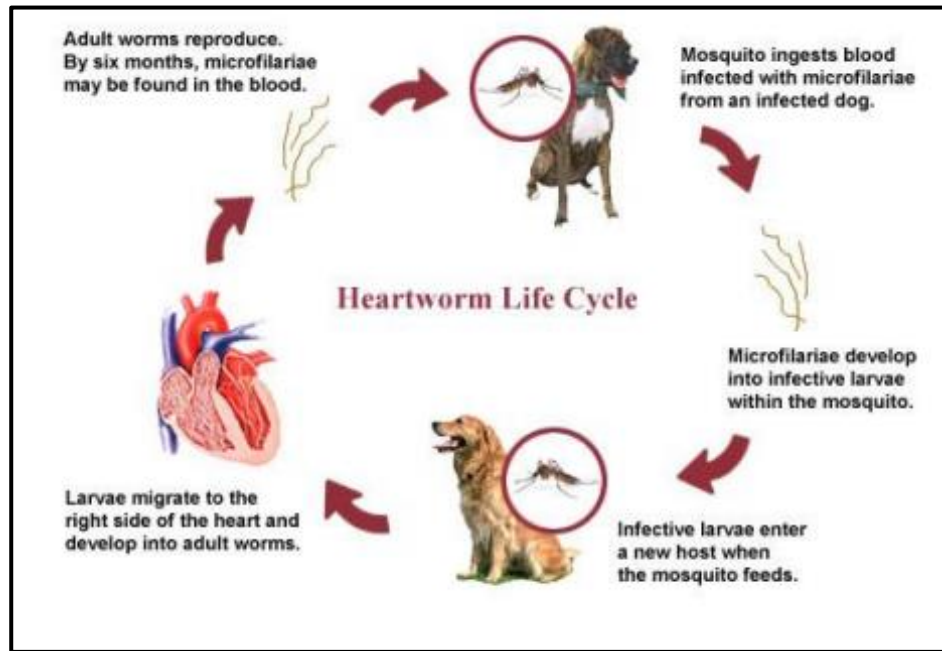


<https://www.budgetpetproducts.com.au>

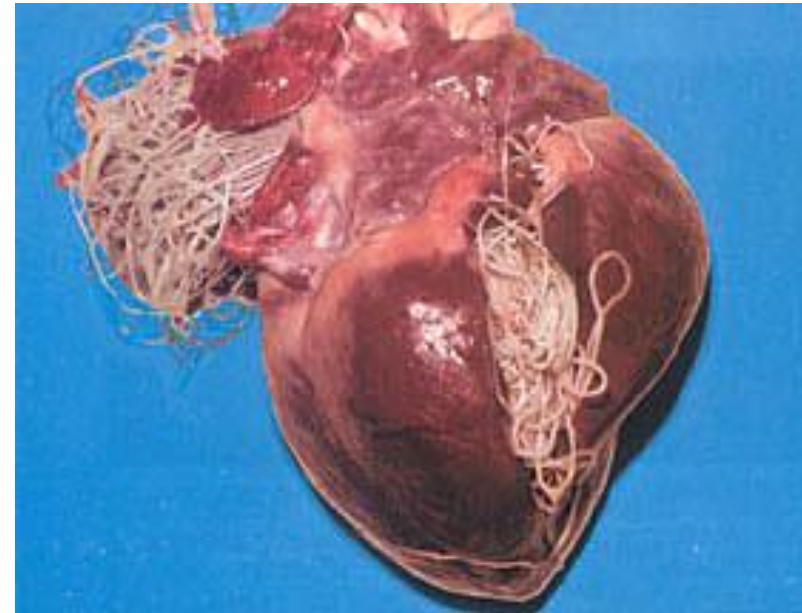
# Heartworm

Carried between dogs by mosquitoes so doesn't require contact with other dogs

Until the age of 6 months, puppies can be started on heartworm medication without being tested.



<http://www.ehrdogs.org/>



<http://www.petvetinc.com/pet-owner-information/heart-worm-disease/>

# Heartworm

- Most common choices for preventatives are:
  - annual injection
  - monthly treatment (oral or topical)



<http://www.walkervillevet.com.au/pet-care-advice/dogs/heartworm-flea-and-worm-protection-for-dogs/>



<http://www.nexgardspectra.com.au/about-nexgard-spectra>



## Endoparasites - heartworm

Animals which have not consistently been on prevention from puppyhood should be tested for heartworm before starting or resuming prevention.



<https://www.idexx.com/small-animal-health/products-and-services/snap-heartworm-rt-test.html>

# Fleas

- The most significant problem with fleas in very young puppies is anaemia, also occasionally seen in adult dogs



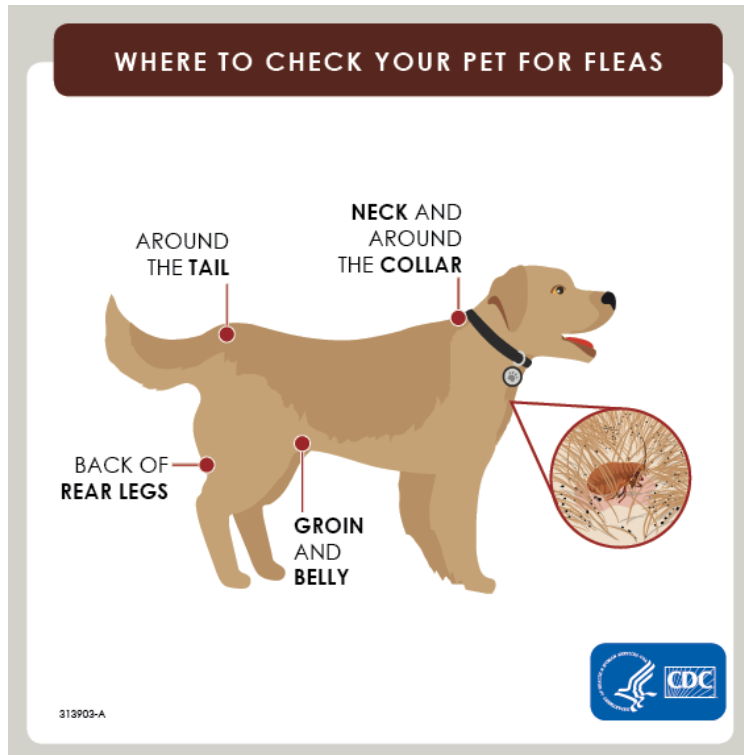
<https://www.dileyvet.com/flea-anemia/>



<https://dogsfirst.ie/health-issues/dog-hot-spot/>

# Fleas

- The most significant problem with fleas in very young puppies is anaemia, also occasionally seen in adult dogs



[https://www.cdc.gov/fleas/avoid/on\\_pets.html](https://www.cdc.gov/fleas/avoid/on_pets.html)



<https://www.animalclinicofbillings.com/preventative-care/preventing-and-treating-fleas-and-ticks-on-dogs/>



<https://www.pdsa.org.uk/pet-help-and-advice/pet-health-hub/conditions/fleas-on-dogs>

# Fleas

Spot on



<https://www.thevetshed.com.au/bu/volution-teal-6pk-dogs-20-40kg/REV>

Chew



<https://www.petcircle.com.au/product/sentinel-spectrum-chews-large-blue>

Tablet from 4 weeks of age



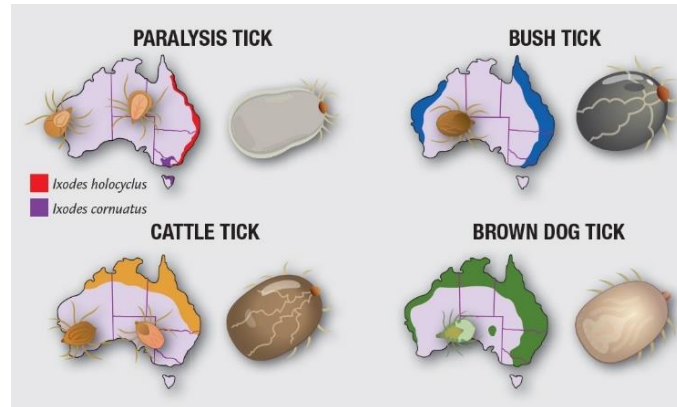
# Ticks

## 3 species of ticks found on dogs in Victoria

- Important one currently is the paralysis tick (*Ixodes holocyclus*)
- Brown dog tick can carry *Ehrlichia canis*, a bacterium which can cause serious disease. Not yet identified in Victoria
- Prevention is much better than cure!



<http://www.abc.net.au/news/2016-08-29/preventing-tick-deaths-in-dogs-and-cats/7788346>



<http://help.vetnpetdirect.com.au/customer/portal/articles/1006465-ticks-tick-paralysis>

<http://www.pittwateranimalhospital.com.au/ticks.html>



# Parasitoides

DOGS	Revolution	Sentinel spectrum	Advocate	Capstar	Bravecto	NexGard Spectra	Drontal	Droncit	Proheart
Eggs and larvae	✓	✓	✓	✗	✓	✗	✗	✗	✗
Adult fleas	✓	✗	✓	✓	✓	✓	✗	✗	✗
Heartworm	✓	✓	✓	✗	✗	✓	✗	✗	✓
Roundworm	✗	✓	✓	✗	✗	✓	✓	✗	✗
Hookworm	✗	✓	✓	✗	✗	✓	✓	✗	✗
Tapeworm	✗	✓	✗	✗	✗	✗	✓	✓	✗
Whipworm	✗	✓	✓	✗	✗	✓	✓	✗	✗
Paralysis tick	✗	✗	✗	✗	✓	✓ + searching	✗	✗	✗
Brown dog tick	✗	✗	✗	✗	✓	✗	✗	✗	✗
Sarcoptic mange	✓	✗	✓	✗	✓	✗	✗	✗	✗
Demodectic mange	✗	✗	✓	✗	✓	✗	✗	✗	✗
Safe from (age in wks)	6	6	7	4	8	8	2	2	12
Frequency	Monthly	Monthly	Monthly	As needed	3 mths	Monthly	Varies with age	3 mths	Annual
Route	Spot on	Oral chew with food	Spot on	Oral tab	Oral chew	Chew	Oral liquid or tab	Oral tab	SC injection
Notes				Rapid - active only for 1 day			q2w from 2 wks to 12 weeks		

# Dental care

By 3 years of age, 80% of dogs will have evidence of dental disease



<http://deepwoodveterinaryclinic.com/dogs-and-cats/dental-care/>



<http://www.hillspet.com.au/en-au/products/pd-canine-td-dry.html>



# Introduction to the Veterinary Profession

VETS30030 / VETS90122



Module – Non-production species

Dogs and cats

Topic 3 – Dogs

Video 4 – Reproduction and breeding management in dogs

Rebekah Brown

[rebekahb@unimelb.edu.au](mailto:rebekahb@unimelb.edu.au)

# Outline of cats and dogs learning sessions

## **Dogs and cats in the community**

1. Where our pets come from and why we keep them
2. Regulation of pets in the community
3. Pets who need new homes – managing health and rehoming in animal shelters

## **Happy, healthy cats**

1. Common cat breeds and their characteristics
2. Welfare and health needs of kittens
3. Welfare and health needs of adult cats
4. Reproduction and breeding management of cats

## **Happy, healthy dogs**

1. Common dog breeds and their characteristics
2. Welfare and health needs of puppies
3. Welfare and health needs of adult dogs
- 4. Reproduction and breeding management**

## Intended learning outcomes – Dogs

Identify common dog breeds and their characteristics

Describe the major welfare needs of dogs

Describe a standard management plan for a pet dog to maximise its health including nutrition, vaccination, worming and other standard healthcare procedures

**Describe the reproductive cycle and reproductive management of dogs to maximise health and welfare and to contribute to population control**



# Female reproduction

- Start cycling from 6-15 months
- 2 heat periods (i.e. 2 'seasons') per year about 6 months apart with a long inter-oestrus
- Large breeds may only cycle once a year
- Season lasts 2-3 weeks - vulval swelling +/- discharge, increased frequency of urination
- May have bloody/straw coloured vulval discharge for about 10 days



<https://www.barketshop.com/products/3ct-paw-inspired-ultra-protection-washable-dog-diapers-reusable-female-small>



<https://www.dogbreedinfo.com/breedingheat.htm>

## Pregnancy and weaning

- Pregnancy lasts approximately 63 days
- U/S from 3 weeks post-breeding is the best way to detect pregnancy and assess viability of pups
- Lateral abdominal radiograph is the best way to assess number of puppies
- Whelping often difficult in brachycephalics
- Neonatal care not covered here
- Start weaning at 3-4 weeks - gradual introduction of milk replacer and solid puppy food
- Usually transition over 2-3 weeks



# Desexing - spay

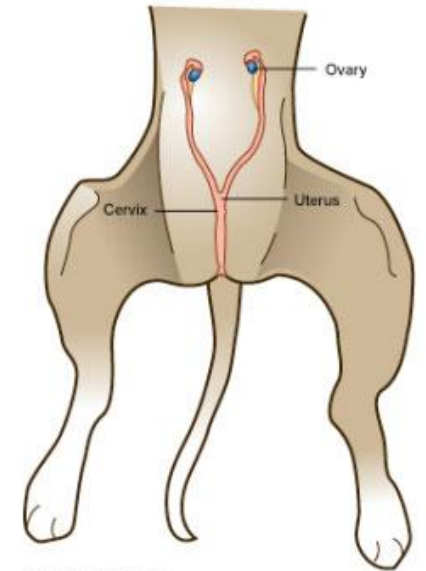
Surgery in Australia is almost always an ovariectomy – removal of ovaries and uterus. Often done around 6 months but can be younger in shelter setting.

Increasingly recommend later desexing (3 months after first heat) as it affects more than breedability e.g. growth plate closure, continence

3 main reasons to spay:

- prevention of pregnancy
- prevention of pyometra
- significantly reduced risk of mammary tumours if spayed early

If mature, check she is not in season.



Used Under License  
Copyright© Lifelearn Inc.

## Male reproduction

Can be sexually mature from around 5 months although more commonly 6-12 months

Have a bulbis glandis which swells during copulation, resulting in the copulatory tie



[https://cdn.citl.illinois.edu/courses/ansc207/week7/dog\\_repro/web\\_data/file3.htm](https://cdn.citl.illinois.edu/courses/ansc207/week7/dog_repro/web_data/file3.htm)

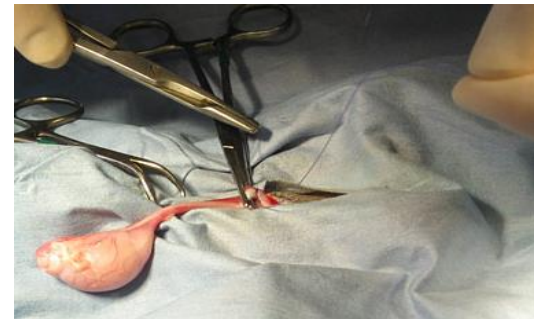
# Desexing - castration

Surgery is an orchiectomy – removal of testes. Commonly done at about 6 months but some recommend to wait until 18 months when fully grown.

Cryptorchid – one or both testes failed to descend. The retained testicle is significantly more likely to develop a testicular tumour than a descended testicle.

Reasons to castrate:

- prevention of unwanted offspring
- prevention of testicular tumours
- Decrease of aggression and roaming
- Decrease in prostate and perianal tumours





# Procedures done at desexing

**Compulsory – tattoo left ear**



<http://www.inverellvetclinic.com.au/inverell/Desexing.aspx>

**As required – retained canines, hind dew claws, umbilical hernias**



<http://www.dogslife.ac.uk/newsletter/view/10>

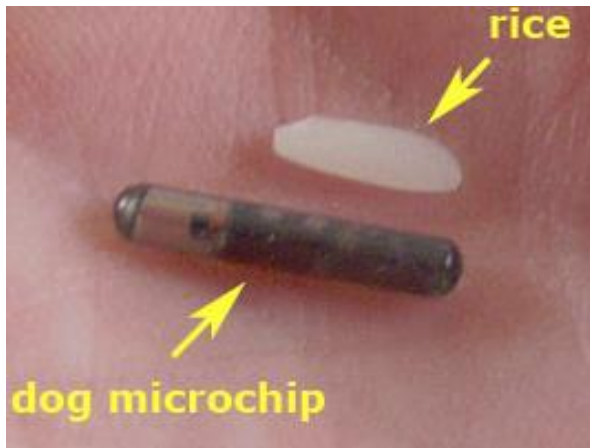


<http://www.bordercollie.org/boards/index.php?showtopic=31922>



<http://www.meadowsvetclinic.com/umbilical-hernia.html>

# Microchipping



<http://www.monavalevet.com.au/VetServices/MicrochippingRegistration>



<http://www.microidglobal.com/pet-microchip-respect-your-pet/>



<http://www.vetstreet.com/our-pet-experts/why-microchipping-dogs-works>