

Current Affairs
in Pet Health
2015

THE
VET
REPORT



Welcome

We launched the first Vet Report a year ago, with the vision of making it the channel through which the veterinary profession can communicate with pet owners and the public about key issues and current affairs. It is intended to summarise the latest research and veterinary knowledge, in a way that is easily accessible for the pet owning public.

We were delighted with the feedback and interest that the 2014 Report received. Material from the Report was featured by general media publications with a circulation of 11.7 million people¹, whilst the online version of the Report and its associated assets have at time of writing been accessed by over 86,000 visitors.

For the 2015 Report, we have built on the knowledge and the feedback we gained from the 2014 edition. A key development is that more of the topics featured in the Report will be available online as bespoke infographics, to deliver them to an even wider audience.

We hope that you find the 2015 Vet Report to be interesting and informative, and we would, as always, welcome your feedback on how we might continue to improve it in the future.

Kind regards

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Director of Clinical Services

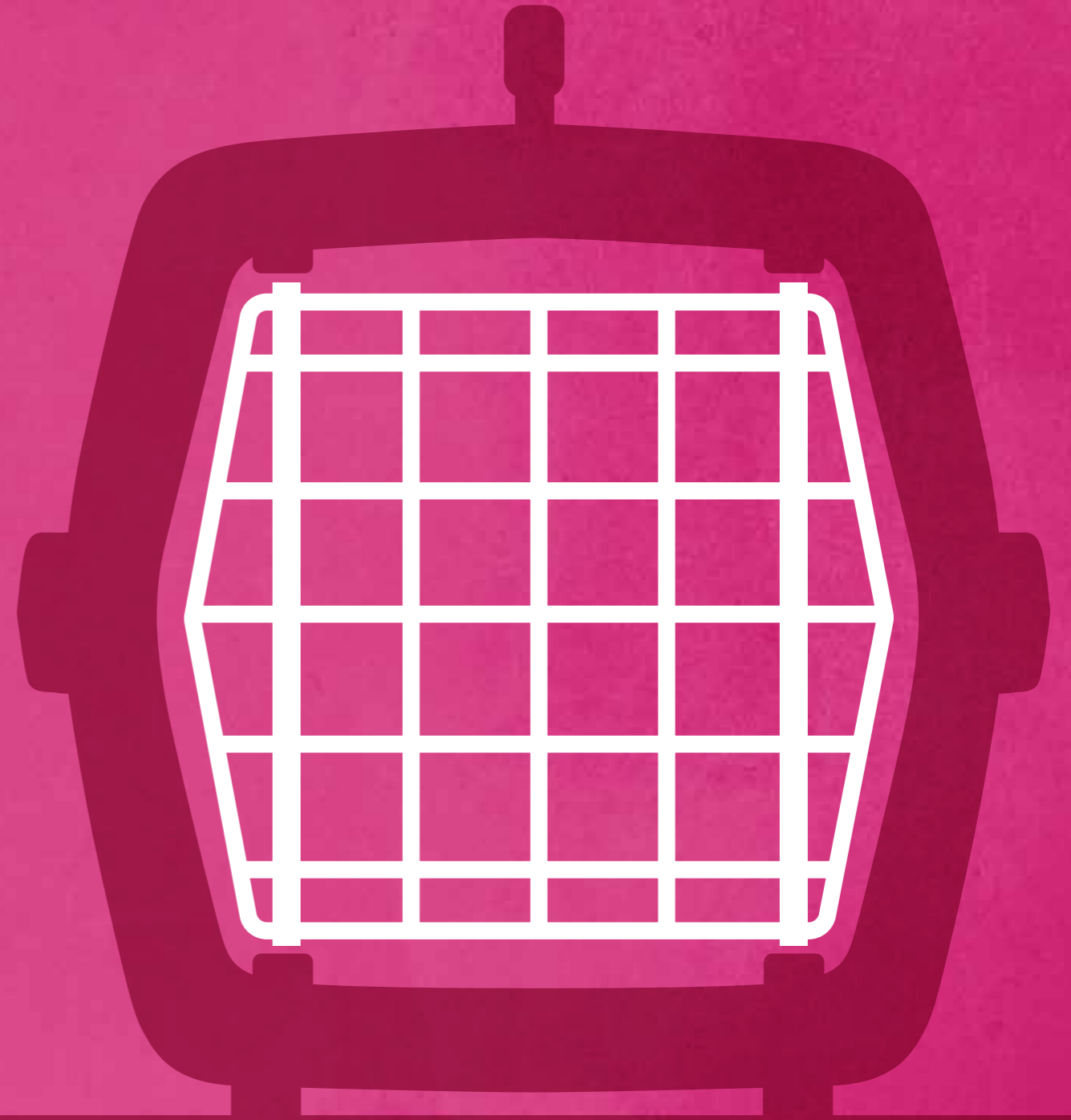


- 03 Why Visit The Vet?
- 15 Territorial Aggression
- 27 Lungworm
- 35 Feeding Rabbits and Getting It Right
- 45 Diabetes
- 53 Microchipping Update
- 59 Alabama Rot Update
- 62 Acknowledgements

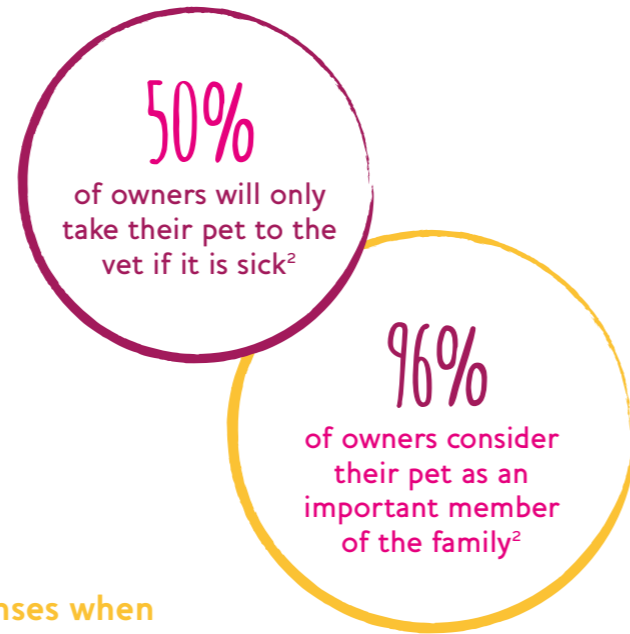
References 1. Alabama Rot PR Campaign Precise Data (2015) Bugler Smith

Why Visit The Vet?

A look at how your vet
can spot hidden problems



Why Visit The Vet?

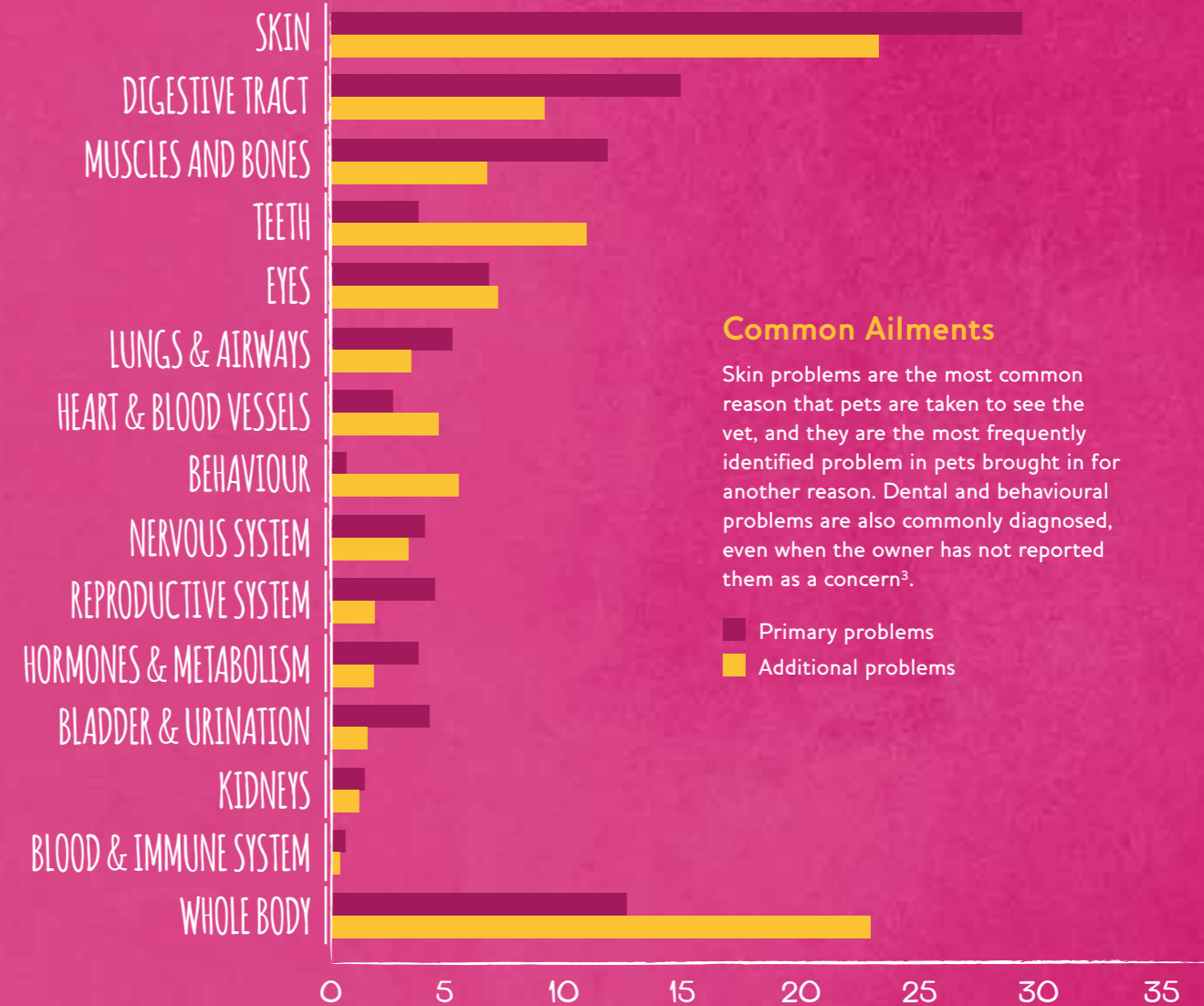


A veterinary surgeon uses all of his or her senses when examining a patient. Their experience of doing hundreds of these procedures every month allows them to perform the examination quickly and efficiently. What actually happens during this very important time, and why is it important for your pet to have a thorough checkup on a regular basis?

When you take your pet to see the vet, the consultation will normally fall into one of three broad categories:

- A routine 'Healthy Pet' check, for example a booster vaccination, a new puppy or kitten check or to prescribe preventative healthcare medicine such as flea and worming treatment
- A 'Sick Pet' consultation, where you have noticed a problem, for example your cat has a lump or your dog has started coughing. The urgency of this appointment will depend on several factors, including your perception of the severity of the problem
- 'Sick Pet' consultations will, in all but the most straightforward cases, be followed by further visits. These are important, as they enable your vet to re-evaluate your pet's progress and tailor the treatment plan accordingly

There will always be true emergencies from time to time but, for the best outcome, all problems should be identified and treated as soon as possible, before they do become emergencies, and ideally before they have any long term effect on your pet. Routine checks of healthy animals are a vital opportunity to detect any problems that may not have been noticed previously. In a recent study of over 1,900 visits to the veterinary practice, over two-thirds of the pets seen had more than one problem to be discussed¹. Significantly more problems were identified by the vet during healthy pet checks than in either sick pet consultations or in revisits¹.



Common Ailments

Skin problems are the most common reason that pets are taken to see the vet, and they are the most frequently identified problem in pets brought in for another reason. Dental and behavioural problems are also commonly diagnosed, even when the owner has not reported them as a concern³.

■ Primary problems
■ Additional problems

It is important that your vet performs a full examination rather than just focusing on the problem you are concerned about. On average, three times as many problems are identified when a full examination is completed, than when the examination is confined to the most obvious problem area. Full examinations are most commonly performed during routine health checks⁴.

Multiple problems generally require more discussion time⁵ and older animals are commonly the ones with more than one problem¹. As a consequence, many practices now provide special extended consultations for selected groups such as senior pets, and also for puppies and kittens, to allow adequate time to cover any points that have been identified.

Examination Techniques

Vets make use of all of their senses when examining a patient:

Auscultation – Listening to the chest and abdomen with a stethoscope can identify problems such as heart murmurs, or abnormalities in gut movement, which are particularly important in rabbits and guinea pigs.

Olfaction – Don't be surprised to see your vet sniffing your pet. Dental disease, ear and skin problems and even some internal medical conditions can be identified in this way! A serious fungal infection of the skin can often be identified by smell even before the patient has made it into the consultation room.

Observation – Some conditions are readily visible to a trained eye, such as those affecting the skin or coat.

Palpation – Gentle touching and probing with the fingers gives information about tissues and organs under the skin such as muscles, bones and abdominal organs like the liver and kidneys.



Case Study

At his annual health check, Smudge's owner reported that he seemed to be a bit sleepier and, although he was still active and going for walks, he was struggling to jump up.

At 13 years old it would have been easy to assume that this was old age catching up with him, but Tanya his vet performed a thorough examination as always and was concerned to feel a large lump inside the front of Smudge's abdomen. Scans and X-rays suggested there was a soft tissue mass associated with either the liver or spleen.

Age in itself is no real barrier to having treatment, and since Smudge was so well in himself otherwise his owner decided to proceed to exploratory surgery. Tanya was amazed to find and remove a splenic tumour that weighed 1kg, which is remarkable considering that Smudge only weighed 12.4kg in the first place! Smudge has now made a full recovery, is noticeably slimmer and is as active as ever.





Case Study

It looked like being just another routine annual health check for Murphy the Border Terrier, until Debbie his vet noticed a small mass on the iris of his left eye.

Unsure of what it was, Debbie referred him to a veterinary ophthalmologist and a tissue sample was taken from the mass under anaesthetic. The results showed that it was an ocular osteosarcoma, a rare and aggressive tumour that will spread throughout the body unless it is caught very early. Murphy had to have the eye removed, but following successful surgery and a course of chemotherapy he is now healthy and cancer free, thanks to his vet's diligence.



During a health check, your vet uses his or her training and expertise to perform a detailed clinical examination of all of your pet's body systems quickly and efficiently. Vets try to be unobtrusive to their patient, so that the visit causes them the least stress possible. Many pets actually enjoy going to the vet – especially if there's a treat jar somewhere in the consultation room!

Your vet will work in a methodical pattern that covers all of the different body systems and ensures that they do not miss anything. He or she will look for anything out of the ordinary, and will often compare both sides of the body to help them to identify what is normal and abnormal for your particular pet.

Much of the examination will be done quickly and quietly, while gently fussing or petting the animal, with the aim that they do not realise that they are under scrutiny. In this way, your vet can make a thorough assessment of your pet, even if it looks as though they haven't done much at all.

Owners are often anxious about bringing their pet to the veterinary practice and this is understandable. It is important to remember that as a pet owner you are looking for help, and vets are there to provide any support that will be required. There is always a partnership between the vet and the owner, and the outcome for the patient is paramount. The vet and owner need to trust each other and the key factors in this are the vet's technical ability and their professionalism⁶.

You as the owner have a role to play in bringing your pet to the vet and voicing any concerns you may have. Your vet will want to collect as much information from you as they can, and some of the questions they may ask might not appear to be obviously related to the reason for the visit. This information gathering is a key part of the consultation process and is essential to building a complete understanding of your pet's health. Your vet will then summarise their findings and give an evaluation of your pet's health, and offer recommendations on different courses of action that might be appropriate.



Mutual trust between vet and owner is essential for an effective partnership



In a recent survey, the three main criteria for selecting a vet practice were: proximity, standard of care and personal experience.

VetFutures

Clinical problems can vary in severity, and your vet may recommend that you simply monitor for any further changes. The most common diagnostic procedure used to reveal more about a patient's condition following a consultation is a blood test⁷. A general blood profile can give a good insight into the health of an animal and may produce a diagnosis on its own. Even if it does not yield a definitive answer, the profile often provides useful clues as to which further investigations might be of benefit. Other common diagnostic procedures include X-rays, urine tests, biopsies and ultrasound scans. Whilst these might sound concerning, they are all performed regularly in general practice. Your vet will always discuss the pros and cons of any procedures prior to performing them. Obtaining a definitive diagnosis will allow a treatment plan to be formulated and help to ensure the best possible outcome for your pet.

Vets are very keen to prevent problems escalating and to use their experience to work with you to maintain your pet's health. Routine health checks are encouraged and can be scheduled, but do not hesitate in booking an appointment if you notice any apparent change in your pet.

Pet owners' opinions when comparing vets to GPs²:

- 67% think diagnostic testing is quicker and more readily available
- 64% think they have quicker access to treatment
- 68% think they have better availability for routine check-up appointments
- 71% think that the receptionists and nurses are friendlier
- 60% think they provide better communication about opportunities for preventative care

References: 1. Robinson NJ, Brennan ML, Cobb M, Dean RS (2015) Capturing the complexity of first opinion small animal consultations using direct observation. *Vet Rec.* 2015 176(2):48 2. MSD Consumer Attitudes Research 3. Robinson NJ, Brennan ML, Cobb M, Dean RS (2015) Investigating common clinical presentations in first opinion small animal consultations using direct observation. *Vet Rec.* 2015 May 2:176(18):463 4. Robinson NJ, Brennan ML, Cobb M, Dean RS (2015) Clinical examination and weighing of patients in small animal consultations. *Vet Rec.* 2015 Apr 11:176(15):387 5. Robinson NJ, Brennan ML, Cobb M, Dean RS (2014) Consultation length in first opinion small animal practice. *Vet Rec.* 2014 Nov 15:175(19):486 6. Grand JA, Lloyd JW, Ilgen DR, Abood S, Sonea IM (2013) A measure of and predictors for veterinarian trust developed with veterinary students in a simulated companion animal practice. *J Am Vet Med Assoc.* 2013 Feb 1:242(3):322-34 7. Robinson NJ, Brennan ML, Cobb M, Dean RS (2015) Diagnostic testing in first opinion small animal consultations. *Vet Rec.* 2015 Feb 14:176(7):174



A Clinical Examination in Detail



From reception to the consult room:

From the moment your vet opens their consulting room door they will be observing your pet's demeanour and mobility, looking for signs such as lameness



Body condition:

- Your pet should be weighed every time they visit the vet
- As well as weight, your vet will also consider body condition score, which is an assessment of how appropriate that weight is for your pet's frame

Genitals and rectum:

- The temperature is taken using a digital thermometer
- Anal glands are checked for lumps, impaction or infection
- The genitals are assessed for any abnormalities
- In male dogs a rectal examination may be performed to evaluate the prostate

Skin and nails:

- Skin is assessed for signs of disease such as redness, thickening, scaliness and smell
- The coat is examined for parasites, hair loss, texture and condition
- Nails are checked for length, quality and damage

Limbs, joints and bones:

- Muscles are assessed for size, wastage, pain and function
- Bones are checked for swellings and pain
- Joints are manipulated to assess range and smoothness of motion and to identify any discomfort associated with them

Scruff:

- A quick and simple test for dehydration is to lift up a pinch of skin at the scruff and then release it. If it stays 'tented' for a prolonged period this could suggest the pet is dehydrated
- If your pet has a microchip your vet will scan it to check it is still functioning and has not migrated

Ears:

- The vet will look for signs such as redness, narrowing, discharge, wax accumulation and foreign bodies
- They will also check for an abnormal smell
- An otoscope may be used to see deep inside the ear

Eyes:

- The vet will look at all of the structures associated with the eye such as the eyelids
- The surface of the eye and internal structures may be checked using an ophthalmoscope
- The pupils will be checked for symmetry and reactivity to light

Nose:

- The condition of the nose itself will be noted, and it will be checked for discharge or signs of inflammation

Mouth:

- The lips, gums and tongue are checked for colour and health
- Teeth are evaluated for damage, tartar accumulation and other signs of disease
- In herbivores the teeth are also checked for overgrowth, spurring and abnormal wear
- The breath is checked for halitosis
- The circulation is assessed by pressing on the gum and seeing how quickly the colour returns to normal

Lungs:

- Lungs will be assessed using a stethoscope
- Your vet will check both sides of the chest for healthy breath sounds, and for any signs of disease such as crackles or wheezes

Lymph nodes:

- These are a part of the immune system and are located throughout the body
- Your vet will check them for size and texture, comparing one side of your pet with the other

Heart:

- Using a stethoscope, your vet will evaluate heart sounds, rhythm and rate
- They will often palpate an artery in a limb at the same time to check that each beat of the heart is producing a strong pulse

Abdomen:

- The abdomen is assessed for shape and size
- Gentle palpation is used to check the abdominal organs for size, texture and discomfort
- Abdominal growths or masses may also be detected
- In herbivores gut sounds will also be assessed using a stethoscope



Territorial Aggression

A look at how, when and why dogs turn to aggression



BEWARE
OF THE
DOG

Territorial Aggression

The popularity of online shopping, combined with increases in 'signed for' delivery means that more delivery staff are at greater risk of coming into direct contact with dogs because of customers having to open the door to receive their deliveries

Canine aggression is never far from the news. In the UK between 2005 and 2013, 28 deaths were attributed to dog bites, and hospital admissions rose 7% to 9,710 in 2014. Although an estimated 200,000 people are bitten in England per year, few prosecutions have resulted as these incidents predominantly occur within the dog owner's home or garden and the victims are most commonly the dog's owners or persons known to the dog.

According to figures released by the Health and Social Care Information Centre in 2014, children up to nine years of age are the most common victims, sustaining injuries to the head; adults are more likely to receive hand or wrist injuries. Prior to 2013 such injuries, commonly caused by a specific form of canine aggression called territorial aggression, were not covered by the Dangerous Dogs Act of 1991. Following the death of a teenage girl in 2013 from injuries sustained during a dog attack within a friend's home however, on 13th May 2014 an amendment was made to the Dangerous Dogs Act. This allowed for the prosecution of dog owners for incidents, injury or death caused by dogs within the dog owner's home and grounds (with a maximum prison sentence of five years for injury and 15 years for death).

As a likely consequence of this change in law and increased owner awareness of their responsibility to adequately manage their dog's behaviour both in and around their home, dog attacks on postal workers have reduced by 10% in the 12 months prior to June 2015. At the same time, prosecutions of dog owners have increased by 62%, with 71% of those prosecutions proving successful¹. Notwithstanding, approximately eight postal workers are attacked by dogs daily, with a number suffering life-changing injuries such as the loss of fingers or impaired limb function².

References 1. Statistics from the National Police Chief's Council 2. Joyce D (2015) Personal Communication

“Dog attacks are almost always preventable, if owners are responsible, keep their animals under control and if initial signs of aggression are recognised and addressed immediately.”

Dave Joyce

National Health & Safety Officer
Communication Workers Union
(CWU)

Despite the enormity of the responsibility placed on dog owners to maintain the safety of their family and visitors, canine aggression remains a common problem and territorial aggression continues to be misunderstood and badly managed.

Aggression is not a personality, character or breed trait in a dog – it is an adaptive behaviour intended to enhance the dog's safety; a clear message to another individual that the dog is not comfortable and wishes to increase the distance between itself and whatever it is finding threatening.



15,000
attacks on postal
workers have occurred
over the last
5 YEARS¹

THE LADDER OF AGGRESSION

Threat aversion behaviours are not confined solely to those commonly considered aggressive such as barking and growling. There are many more subtle behaviours that dogs will usually try first, only escalating to more risky strategies if their warnings go unheeded. The Ladder of Aggression diagram shown below is a useful representation of this pathway of behaviours.

▲ BITING

▲ SNAPPING

▲ GROWLING

▲ STIFFENING UP, STARING

▲ LYING DOWN, LEG UP

▲ STANDING CROUCHED, TAIL TUCKED UNDER

▲ CREEPING, EARS BACK

▲ WALKING AWAY

▲ TURNING BODY AWAY, SITTING, PAWING

▲ TURNING HEAD AWAY

▲ YAWNING, BLINKING, NOSE LICKING



Territorial aggression is a form of aggression that occurs within or close to the dog's home – the area that the dog considers to be part of its normal, daily environment.

All animals require basic resources for their survival, and learning about the need for maintaining access to resources starts early in life. Dogs need access to food, water, shelter, social companions and toys. A dog will place a high resource value on its own safety and on the place where the dog gains access to all of these resources – its home and garden environment.

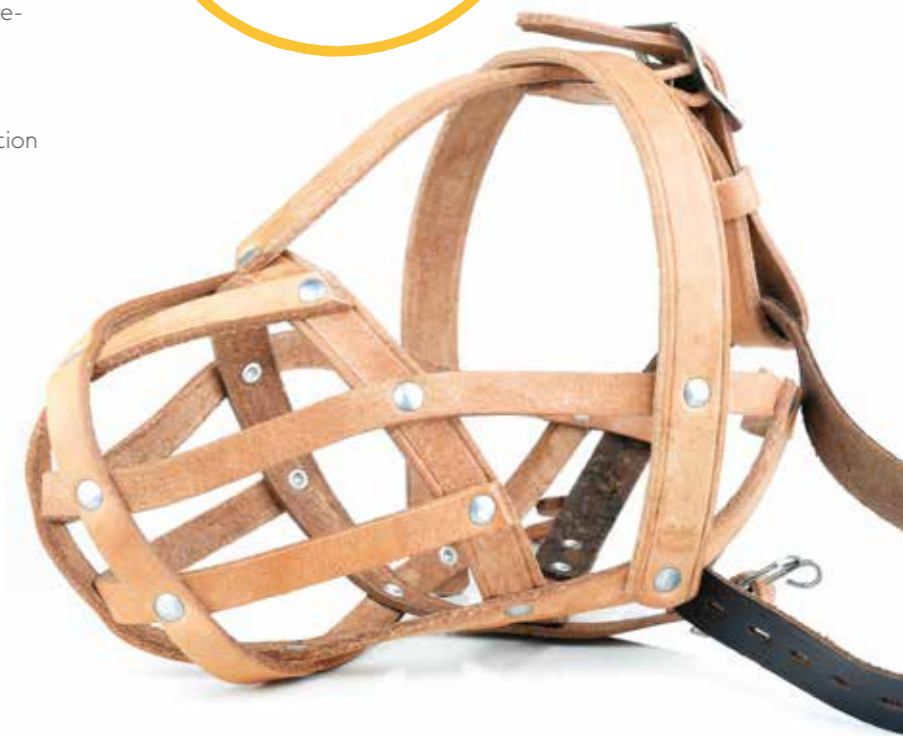
Consequently, anything that attempts to approach the territory may be perceived by the dog as a potential threat to the dog's ability to maintain its access to this important resource. This will result in an anticipation of threat (anxiety), a learned predictability of threat (fear), or an anticipated or learned predictability of failure to control the situation (frustration) that will motivate the need for distance creation and potentially for aggression.

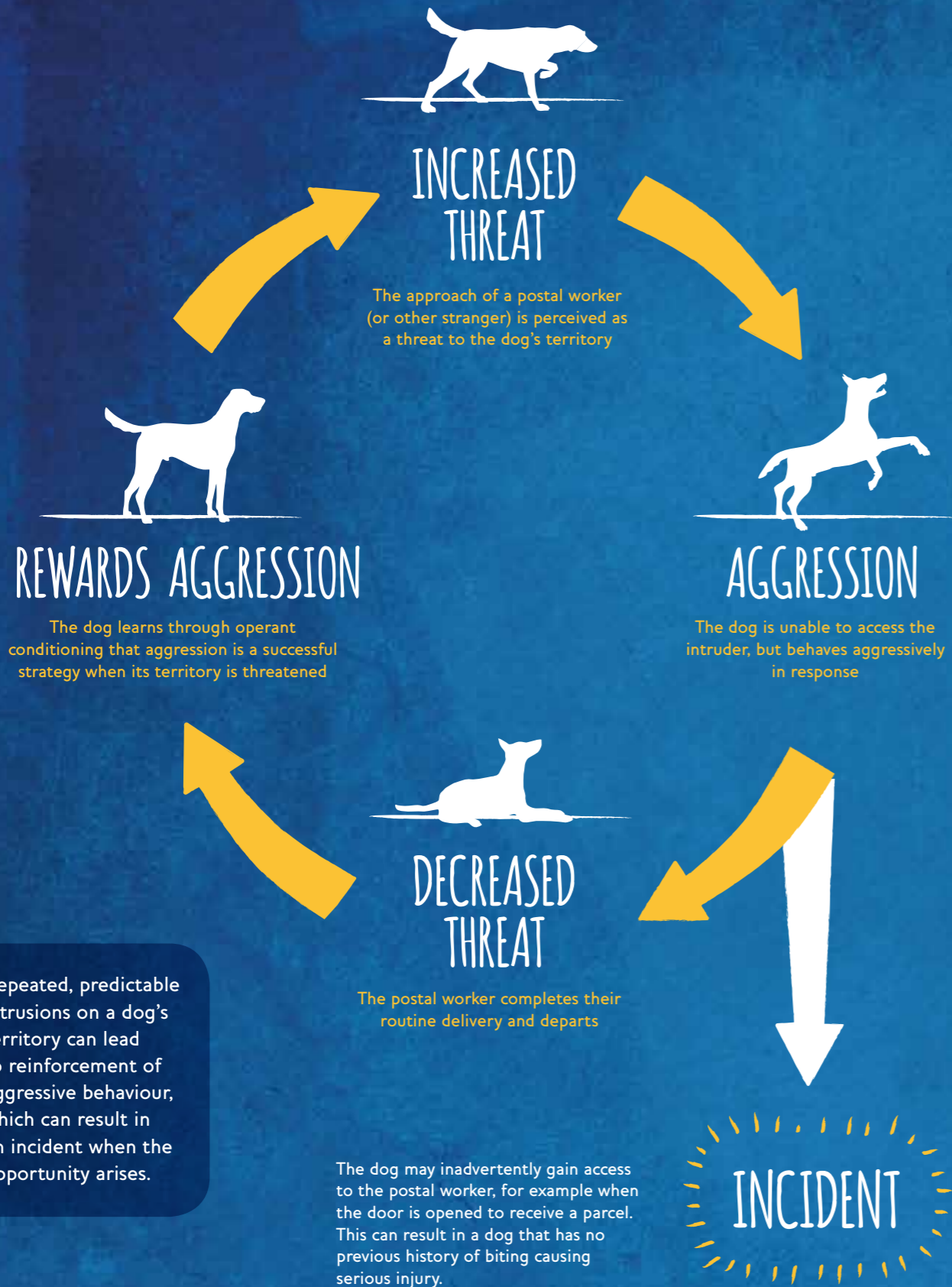
Some owners do not consider their dog to have used aggression because it hasn't actually bitten anyone. Canine aggression isn't defined as the single activity of biting: the term covers the range of overt distance-creating activities a dog may use, such as lunging, barking, growling, snapping and ultimately, biting. As such, any dog that barks or yaps at passers-by is using territorial aggression in response to its perception of a threat to its safety.

Frustration is an under-recognised issue in dog behaviour problems. Dogs have very few innate skills for dealing with challenging situations. If the need to remain close to their essential resources means that they are unable to avoid social challenges through the use of avoidance or flight, then signalling an intention to use aggression through lunging, barking or growling may become inevitable. If these responses are frustrated by a failure to succeed in resolving the issue then, over time, these behaviours will escalate and may even result in a bite.



A dog that barks or yaps at passers-by is using territorial aggression in response to its perception of a threat to its safety





Sadly, dogs' attempts to control access to their essential resources are constantly frustrated; pedestrians and traffic repeatedly pass their homes, birds and planes fly overhead, and delivery personnel and visitors approach the doors of their homes. The dog may bark and the threat may appear to reward that response by moving away from the property, but within minutes the dog's response will be frustrated by a further incident. Some dogs will be restricted to opportunities to engage in territorial behaviour by only having access to a front door. Others will have an entire perimeter fence and gate to patrol. The larger the area, the greater the anxiety and the more intense the opportunity for frustration and for an escalation in aggression.

Although all dogs are prone to territorial behaviour, some breeds that have evolved for a working role, such as sheepdogs and spaniels, may be more predisposed to scanning their environment for the sound of approaching threats.

Other breeds, such as terriers, once stressed tend towards both a rapid escalation of aggression, and to enhanced displays of frustration-related behaviour when their expectations fail to be met. Herding breeds have evolved to initiate rapid arousal, and to respond to movements that cross barriers (or the dog's perception of a barrier) hence their successful use as guarding breeds. Such dogs all need careful early management and specific training to ensure that they can relax in the presence of property boundaries.

All dog owners have a responsibility to ensure that their dogs do not intimidate people entering their property. It is the perception by a visitor that a dog appears to be out of control that can lead to the threat of prosecution. Dogs can't engage in territorial aggression if they are not allowed into areas where they can gain access to gates or to fences adjoining public or shared spaces. Ensuring that the dog is always supervised in such places should be a starting point for management measures.

If a dog has not yet started to develop territorial behaviour, a trainer registered with the Animal Behaviour and Training Council (ABTC) can guide the dog's owner in teaching them to remain calm and sociable around doors, gates and barriers.

If a dog is already showing territorial aggression, a veterinary practice can refer the owner to a clinical animal behaviourist who can assist them. In the interim, dogs exhibiting territorial aggression (no matter how small the dog) should not be left unsupervised in doorways, yards or gardens and should wear a muzzle and a house-line when owners take them close to doors, gates and barriers. If an owner is supervising their dog in a yard or garden, the dog's attention should be directed on to activities organised by the owner, such as games or puzzle solving to access food, so that the dog isn't left to focus attention on the sound of approaching foot or motor traffic.



A house-line is a lightweight lead or line, two metres or more in length, which is attached to a flat collar or harness when your dog is at home and which can be used safely to interrupt undesirable behaviour

When a dog is failing to cope with territorial challenges and is already responding to them, the dog should not be involved in greeting routines with visitors at doors. Instead, it should associate the arrival of visitors with opportunities for high quality entertainment in an alternative part of the home. Linking the provision of feeding-puzzle activities in another room with the arrival of visitors at the front door, not only helps to reduce frustration previously experienced in these areas of the home, but starts to build more positive associations with the arrival of visitors.

TOP TIPS:

- 1 Put your dog securely in another room before answering the front door
- 2 To prevent the risk of your dog biting the fingers of postal or delivery workers you can mount a letterbox cage inside the door or, alternatively, fit a secure external mailbox
- 3 Do not leave your dog unsupervised outside in an area where it may come in to contact with visitors to the property
- 4 Never leave your dog alone with young children

In addition

Special attention should be given to ensuring that dogs are not left in front rooms or hallways where they can observe the approach of, or respond to, delivery personnel. The delivery person's regular and predictable arrival has, as they approach, the potential to frustrate previous territorial attempts. It also reinforces current territorial activity when they walk away from the property afterwards. At such times, the dog should be in an area of the home where it is less likely to hear the person approach and preferably where it is busy with a positive and completely engaging activity that outweighs its motivation to respond to the delivery.



It is important for us to remember how valuable our attention can be to the dog. No matter how cross or reprimanding we intend to sound as we respond to our barking dog, it is essential to realise that any response from us will simply enhance the dog's perception that it is behaving as we would wish. A far better response is to remain quiet, calmly pick up the end of a house-line and steadily lead the dog to a safe place where it can no longer see or hear the visitor. The provision of a game or puzzle feeder will help to keep the dog diverted.

Prevention will always be easier than cure so, when you purchase a puppy, you should look for assurance from the breeder that the puppy has been adequately socialised and habituated, prior to eight weeks of age, to people visiting and passing the home.

This can be achieved by carrying the puppy to the door and gate to meet a range of visitors, both regular and occasional. These visitors should give the puppy small, tasty treats (which all puppies like) but they shouldn't give the puppy excessive attention, as this may lead to the puppy becoming over-excitable in such situations.

Once the puppy arrives in its new home this training should continue and should immediately extend to early training about sitting at doorways in order to receive a small treat and a gentle touch (rather than jumping up to receive excessive attention). When any extra activity is anticipated within or around the home the puppy should be led to a quiet area of the home where it can amuse itself with some calm puzzle-feeding.

In addition, an audio recording of everyday sounds can be played within the home, gradually increasing the volume as the puppy continues to ignore these sounds. If puppies are to be allowed to play in the garden, it should be done under supervision and should involve specific activities, rather than leaving the puppy to become over-interested in minor sounds or movements outside its home environment.

After a puppy has received their initial vaccinations, they should be referred by their vet to a well-organised puppy class where their habituation and socialisation can be continued. They can also learn to 'meet and greet' people and other dogs appropriately without experiencing social anxiety, fear or frustration. In addition, trainers should be able to advise on breed-specific exercises for breeds that may be predisposed towards developing territorial behaviour.

POSTAL WORKER DEFENSIVE MEASURES

- Posting pegs enable delivery staff to push post through letterboxes without exposing their hands or fingers to the risk of being bitten by a dog inside the house
- Postal workers log all potential hazards on their round in a Walk Risk Assessment Programme (WRAP) to inform and protect their colleagues
- The Royal Mail will suspend delivery to problem addresses, forcing the residents to collect their mail from the sorting office



Communication Workers Union Bite Back Campaign

CWU's Bite Back campaign aims to raise awareness about responsible dog ownership and to get new laws in place to protect people who are attacked on private property. The campaign was launched in 2008, a year which once again saw numerous attacks on CWU members by out-of-control dogs.



How can owners of dogs with existing territorial problems get help?

Whenever a dog has a behaviour problem, but particularly when the problem involves aggression, the dog should receive an immediate check-up from its vet. Studies at both Glasgow and Lincoln Universities have shown that a considerable proportion of dogs that display aggression are suffering from previously unrecognised pain, and that once appropriate pain relief is provided the number of aggressive incidents reduces substantially. There is also a recognised link between other illnesses, such as an underactive thyroid gland, and aggression.

Once the dog has been given a clean bill of health (or once treatment for a medical condition has been initiated), the veterinary surgeon can arrange a referral to a clinical animal behaviourist via the Association for the Study of Animal Behaviour (ASAB) register, or to a full member of the Association of Pet Behaviour Counsellors (APBC). They will work with the owner to devise and implement a treatment plan that will assist in modifying their dog's territorial behaviour.

Useful contacts:

Blue Cross muzzle training video:

www.bluecross.org.uk/99144-109679/muzzle-training.html

Association of Pet Behaviour Counsellors:

www.apbc.org.uk/help/regions

The APBC website also has useful, free-to-download advice sheets about the introduction of muzzles and the use of house-lines.

ASAB accredited Clinical Animal Behaviourists:

asab.nottingham.ac.uk/accred/reg.php

Animal Behaviour and Training Council:

www.abtcouncil.org.uk/public-information.html



What is Lungworm?

Angiostrongylus vasorum, the canine lungworm, is common with many other parasites, makes use of more than one species to complete its life cycle. Dogs and other canids are the primary host, and molluscs, such as slugs and snails, have a role as an intermediate host.

- 1 Larvae are produced by adult lungworms in the dog or fox and these are passed in the dog's faeces. Dogs can excrete up to 17,000 larvae per gram of faeces¹
- 2 The larvae are eaten by slugs and snails, and then develop inside these intermediate hosts
- 3 The dog accidentally, or deliberately, eats the slug or snail or its slime

- 4 Larvae are absorbed in the dog's gut and migrate to the heart
- 5 The larvae develop into adults and live in blood vessels between the heart and lungs
- 6 The adults lay eggs which hatch into larvae. These are coughed up and swallowed, before being excreted in the faeces to start the life cycle again

Some dogs eat slugs and snails out of curiosity or habit, but it is also very easy for dogs to swallow these molluscs accidentally, for example when eating grass. Researchers looking for slugs and snails found many on sticks¹, so if your dog likes to carry or fetch sticks, this can also increase the risk of ingestion. Recent research has shown that lungworm larvae are excreted in the slime of infected slugs and snails³ and can live free in the environment¹, so dogs can become infected even if they never actually eat a slug or snail.

Many foxes are infected with lungworm, and studies have shown that foxes colonising urban environments can increase the transmission of parasites to pets⁴. It is thought, however that the long distance transmission of lungworm is due to the movement of pet dogs and not wild foxes¹.



How do I know whether my dog has lungworm?

Lungworm can cause several clinical signs that you may notice. The most obvious are breathing changes, such as coughing, or tiring and running out of breath easily. Your pet may have weight loss or a reduced appetite, and sometimes lungworm causes diarrhoea. You may notice that your dog seems depressed or lethargic. In more advanced cases, lungworm can cause fits. It can also interfere with normal blood clotting, which can lead to bleeding from the gums, or nose bleeds and there can be excessive blood loss from small wounds. There may be internal bleeding, or haemorrhage into the eye resulting in a bloodshot appearance. Any blood loss can lead to anaemia which may make the gums look pale.

If you notice any of these signs, or are concerned about lungworm, you should contact your veterinary practice. Unfortunately, none of the signs are definitive for lungworm, and so further testing would be required to diagnose infection. There is a blood test that can be carried out in the practice, but this may need to be confirmed with a faecal sample.

Your vet will probably recommend investigations to rule out other diseases that can cause similar signs to lungworm. This may include X-rays, ultrasound scans and blood tests to check for infection or other causes of anaemia and to check liver and kidney function. These tests are important to diagnose and treat your pet effectively and your vet will discuss with you the reasons for any investigations they have recommended.



Case study

Lady, a 10-month-old lurcher, was taken to Companion Care in Ashford when her owners noticed that she was coughing. A blood test quickly confirmed that she was suffering from lungworm, and the vet immediately started treatment to clear the parasites and return Lady to full health.

Where in the UK is lungworm found?

Several new studies have shown the geographical spread of lungworm across the UK. The first few cases were reported in South Wales and Cornwall in the late 1970s. It was expected to gradually spread throughout Great Britain, partly due to climate change producing the warmer and wetter weather that is ideal for slugs and snails. In 2005, a study started to look at where in Great Britain wild foxes infected with lungworm were to be found. At that time, lungworm appeared absent from northern England and Scotland. 4.8% of foxes in the Midlands were infected and 23% were infected in the South East⁷. This matched the distribution of cases in dogs, as cases were beginning to be seen in the Midlands at around this time⁶.

It is important to look at the level of lungworm infection in foxes as they are an important species involved in maintaining numbers of the parasite in the wild. Studying foxes also reduces any bias or inaccuracies that may be associated with studies in dogs. For example, dog owners may not want to share their dog's clinical information, or tests may not be performed on suspected cases due to financial or other constraints⁷.

In 2015 an update of the original study of foxes showed that lungworm is now present throughout Great Britain⁷. In all areas there was an increase in the percentage of foxes infected with lungworm. In the South East the incidence has doubled and, importantly, lungworm has now been found in northern England and in Scotland. The study stated that there is "genuine expansion in the distribution of *Angiostrongylus vasorum*" and suggested that the causes could include climate change effects on slugs and snails and movement of infected dogs. It concluded that further spread is expected.



Geographical spread from previously limited endemic foci has occurred rapidly⁵

LUNGWORM DISTRIBUTION



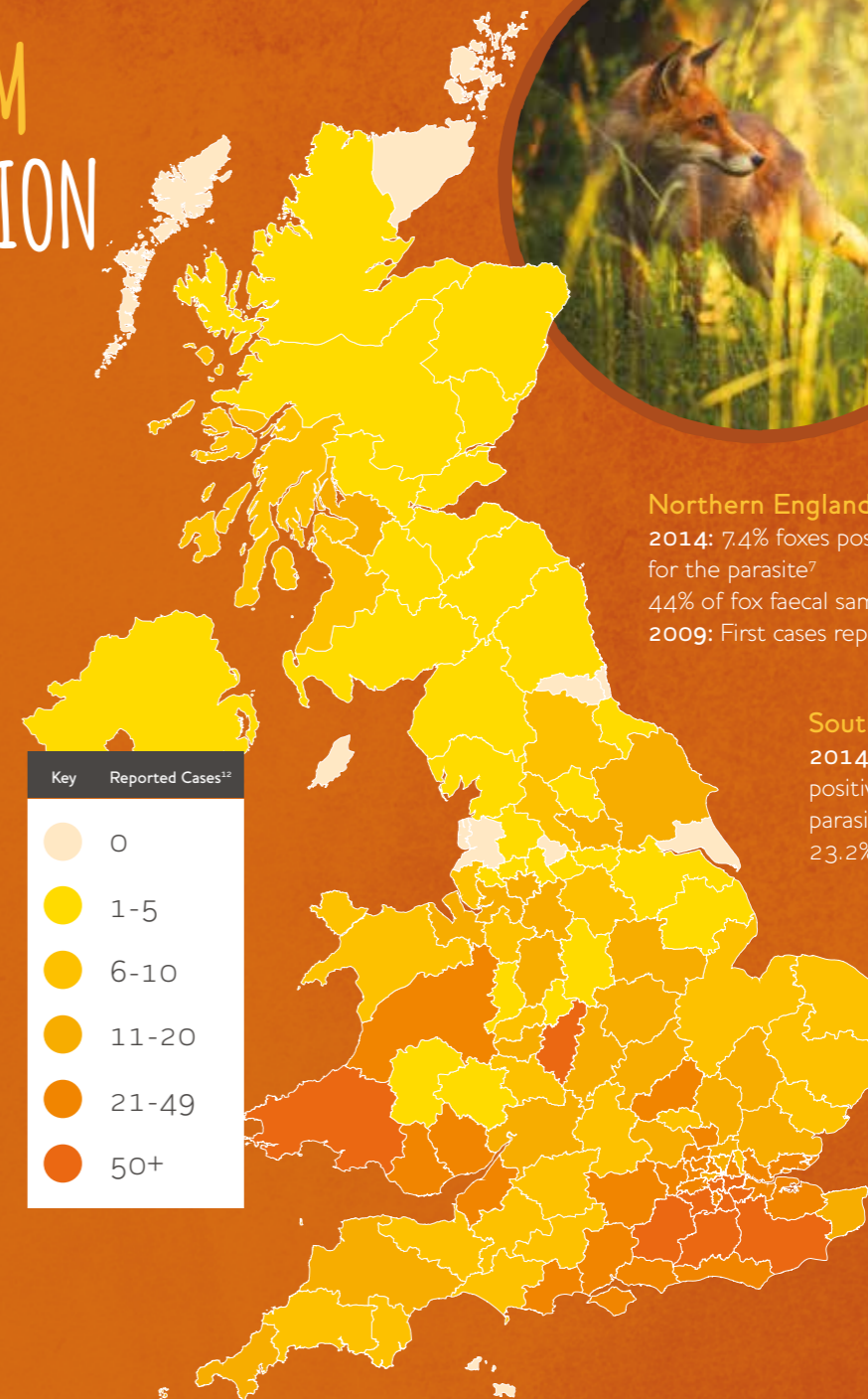
Scotland
2015: Up to 11% of slugs in Glasgow parks were shown to be infected with the parasite⁵
2009: First case reported in a dog in Scotland⁸

Northern England
2014: 7.4% foxes positive for the parasite⁷
 44% of fox faecal samples positive⁹
2009: First cases reported in dogs¹⁰

England in general
2015: Parasite incidence in foxes 18.3% (up from 7.3% in 2008)⁷

South East
2014: 50.8% foxes positive for the parasite, (up from 23.2% in 2008)⁷

South West
 First identified in 1979⁷



Another recent study focused on the emergence of lungworm in Scotland, where there had previously been no cases in the original study of foxes. The first confirmed case of lungworm in a Scottish pet dog was in 2009 and the level of lungworm larvae in slugs and snails was examined in three areas including a park the dog frequented. The slugs and snails were collected after dusk by torchlight, and 6.7% of slugs and snails were positive for lungworm⁵. The highest level of infection (11%) was in the park visited by the initial case. This study confirmed that, along with the research into foxes, lungworm is established in Scotland.

For more information about your area visit: www.angiodetect.co.uk or www.lungworm.co.uk



Case study

Roxy was a happy, healthy young Staffordshire Bull Terrier, until one day she suddenly started coughing up blood and collapsed.

Her distraught owners rushed her in to Companion Care in Tunbridge Wells, where an X-ray and blood test confirmed she was suffering from the effects of a lungworm infestation. Unfortunately Roxy's condition was so advanced that she was beyond the help of available treatment, so the difficult decision had to be made to put her to sleep to relieve her suffering.

What can I do to treat lungworm?

If lungworm is diagnosed in your dog, your vet will discuss suitable treatments with you. This will usually involve a spot-on product or tablets to kill the lungworm but, depending on the level of infection, your dog may need additional supportive measures such as a drip, treatment of seizures if present, or a blood transfusion if there is a marked anaemia. Some dogs can have a reaction to the lungworms as they are killed by the treatment, and your vet may need to monitor and treat your dog for this.

Prevention is better than cure, and the same treatments can also be used to prevent infection with lungworm. Again, your vet can discuss with you the best option, but it is important to treat monthly, year round, as missed doses can give an opportunity for lungworm to take hold.

It is also important to make changes to your dog's lifestyle to help reduce the risk of infection. Removing toys from the garden overnight so they do not come into contact with slugs or snails can help^{1,2}. Allowing your dog to play with sticks is never a good idea on account of the risk of serious injury but, if you choose to let them carry one it is a good idea to check the stick for any signs of molluscs or their slime trails. Wherever possible you should discourage or prevent your dog from eating slugs and snails.



Conclusion

The latest research shows that lungworm is now endemic throughout the UK. It is, however likely to remain patchy in its distribution, with hotspots and areas that appear free from the parasite in close proximity.

It is clear that there are now no areas of the UK where the possibility of lungworm infection can be discounted, and dog owners and vets should be vigilant for any signs of the condition and to plan their parasite prevention strategies accordingly.



The latest research shows that lungworm is now endemic throughout the UK

References: 1. Schnyder M (2015) Slugs and Angiostrongylus vasorum – how much do we know? *Vet Rec*. Jul 11;177(2):44-5 2. Schnyder M, Fahrion A, Riond B, Ossent P, Webster P, Kranjc A, Glaus T, Deplazes P (2010) Clinical, laboratory and pathological findings in dogs experimentally infected with *Angiostrongylus vasorum*. *Parasitol Res*. Nov;107(6):1471-80 3. Conboy G, Guselle N, Schaper R (2015) Spontaneous shedding of metastrongyloid third-stage larvae by experimentally infected *Limax maximus*. Poster presentation 2015 WAAVP 4. Liccioli S, Giraudoux P, Deplazes P, Massolo A (2015) Wilderness in the 'city' revisited: different urban shape transmission of *Echinococcus multilocularis* by altering predator and prey communities. *Trends Parasitol*. Jul;31(7):297-305 5. Helm J, Roberts L, Jefferies R, Shaw SE, Morgan ER (2015) Epidemiological survey of *Angiostrongylus vasorum* in dogs and slugs around a new endemic focus in Scotland. *Vet Rec*. Jul 11;177(2):46 6. Morgan ER, Tomlinson A, Hunter S, Nichols T, Roberts E, Fox MT, Taylor MA (2008) *Angiostrongylus vasorum* and *Eucoleus aerophilus* in foxes (*Vulpes vulpes*) in Great Britain. *Vet Parasitol*. Jun 14;154(1-2):48-57 7. Taylor CS, Garcia Gato R, Learmount J, Aziz NA, Montgomery C, Rose H, Coulthwaite CL, McGarry JW, Forman DW, Allen S, Wall R, Morgan ER (2015) Increased prevalence and geographic spread of the cardiopulmonary nematode *Angiostrongylus vasorum* in fox populations in Great Britain. *Parasitology* Aug;142(9):1190-5 8. Helm J, Gilleard JS, Jackson M, Redman E, Bell R (2009) A case of canine *Angiostrongylus vasorum* in Scotland confirmed by PCR and sequence analysis. *J Small Anim Pract*. May;50(5):255-9 9. McGarry J, Singleton D, Coulthwaite C, Sullivan M, Smith V (2014) UK: Northward spread of *Angiostrongylus vasorum* – data from dogs and foxes. *FEDAD 2014 2-4 July, 2014 Budapest, Hungary* 10. Yamakawa Y, McGarry JW, Denk D, Dukes-McEwan J, Macdonald N, Mas A, McConnell F, Tatton B, Valentine EG, Wayne J, Williams JM, Hetzel U (2009) Emerging canine angiostrongylosis in northern England: five fatal cases. *Vet Rec*. Jan 31;164(5):149-52 11. Brennan S (2009) ECVIM Congress 12. October 2015 map data from multiple sources including laboratory results, publications and vet case reports, see lungworm.co.uk for more information.

Feeding Rabbits and Getting It Right

Nutrition advice for a healthy, long-lived rabbit



Feeding Rabbits and Getting It Right

Feeding the correct diet is probably the single most important means of having a healthy and long-lived rabbit. We know from scientific studies that feeding an incorrect diet, one that is low in fibre and high in carbohydrate, is directly linked to the development of dental disease, gastrointestinal disease, obesity and behavioural problems. In recent years pet food manufacturers have responded to the need for better diets for pet rabbits, but in fact the vast majority of a rabbit's diet should not come out of a packet.

Rabbits naturally eat mainly grass – this is the ideal food and they are adapted in terms of their teeth and digestive system to cope with it. A natural herbaceous diet is high in fibre, low in fat, and low in starchy carbohydrates. Feeding takes place mainly in the early morning, evening and at night – this is because in the wild this is when the rabbit is safest from predators, and many owners notice this pattern in their pet rabbits. While feeding, a rabbit is potentially always alert and on the look out for predators, so along with its acute hearing it uses its large eyes on the sides of its head to get a wide field of vision. It can't actually see what it's eating under its nose and instead relies on smell and feel to detect its food. The characteristic long, powerful hind legs and lightweight skeleton mean it can make a sudden rapid sprint to the safety of the burrow to escape a predator if needed. Rabbits will spend about six to eight hours a day eating and the rest of the time they will be safe from predators underground digesting the food.

Rabbits are hindgut-fermenting herbivores with a specialised digestive tract that is large and very complex. Food passes rapidly through the gut and is sorted into the digestible parts that are useful, and the indigestible parts that do not provide nutrition, but nevertheless are still important for healthy gut and teeth function. The rabbit's gut sorts out and expels the long fibrous indigestible parts very quickly – these are passed out frequently as hard dry droppings. It retains the digestible parts in a section of the hindgut called the caecum where it is fermented to provide energy and nutrients by 'good' bacteria and other micro-organisms.



Rabbits also eat caecotrophs, which are soft packets of partially digested food, bacteria and bacterial products including vitamins from the caecum, that are expelled from the gut mainly at night. These caecotrophs are an essential part of the rabbit's feeding strategy, and are normally never seen as the rabbit bends down between its legs and eats them directly as they emerge.

Even though they can't digest much of the fibre they eat, it is very important, as it stimulates gut motility. The production of plenty of good-sized dry droppings is a sign that a rabbit's gut is moving properly, but if fewer, small or abnormally shaped droppings are seen or if they stop completely, that is a sign of gastrointestinal disease, as is diarrhoea. If sticky caecotrophs are seen around the back end of a rabbit that means that it is not eating them for some reason, which is abnormal and needs veterinary investigation.

Fibre is also vital for healthy teeth. To cope with an abrasive, tough diet, rabbits' teeth grow continuously throughout life, and eating a high-fibre diet with the right mineral balance helps keep them at the correct length and shape. If they don't eat enough fibrous food or have a diet with an imbalance of calcium and phosphorus the teeth get too long, change shape and develop painful spikes and spurs. Periodontal infection can also develop which can lead to large abscesses. These conditions develop on the cheek teeth (back teeth) which are used for chewing and grinding food, and are impossible to check without the use of special dental equipment as a veterinary procedure. Any rabbit that is not eating well or stops altogether should be checked urgently by a vet for dental disease.

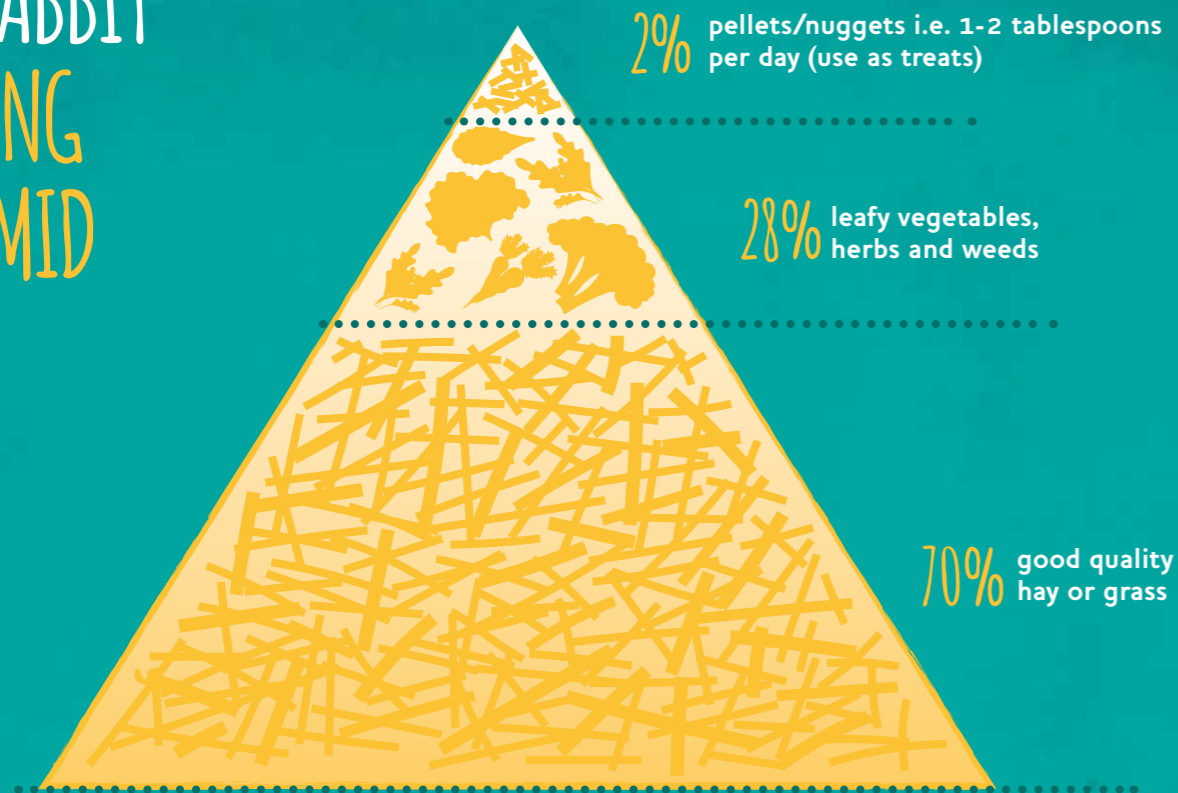
What should pet rabbits eat?

Feeding rabbits is actually simple and straightforward. The best diet for rabbits is one that mimics their natural grass-based diet in the wild as closely as possible. This means they should be fed unlimited good quality hay or grass, and some leafy green vegetables and herbs. These can be supplemented with nuggetted or pelleted feed in an amount recommended by the manufacturer. Treats should be kept to a minimum, but if they are fed they should be healthy and natural. Fresh drinking water must always be available. As a rough guide, about 70% of the diet should be hay or grass, 28% vegetables and only 2% pellets or nuggets, which is about 1-2 tablespoons a day for an average rabbit.



Periodontal
Peri: Around Dantal: Teeth

THE RABBIT FEEDING PYRAMID



Rabbits do not need lots of variety from day to day and sudden changes in diet must be avoided, as this can upset the delicate balance of bacteria in the hindgut and lead to diarrhoea due to the overgrowth of harmful bacteria. Any change in diet should be made gradually over several days or weeks, starting with small amounts of the new item and gradually increasing them, at the same time making a corresponding decrease in the unwanted item if necessary.

It is vital to ensure that weanling and young rabbits eat plenty of hay. A sudden change in diet and a lack of fibre, combined with the stress of movement, is a significant cause of disease and death in young rabbits over the period of weaning; for example, when moving to a pet shop or a new owner. When purchasing a rabbit it is important that the rabbit's past diet is known so that any changes can be introduced gradually.

It is vital to ensure that weanling and young rabbits eat plenty of hay

When purchasing a rabbit it is important that the rabbit's past diet is known so that any changes can be introduced gradually

Grass and hay

Grass is high in fibre (20-25%), has moderate levels of protein (around 15%) and is low in fat (2-3%). The bulk of the diet of the pet rabbit should consist of grass (fresh or freeze-dried) and/or good quality meadow/timothy hay which is available at all times. Ideally pet rabbits should be able to graze an area with a variety of grass and plant species, however for many rabbit owners this is impractical. Whilst grazing is preferred, grass can be cut and offered fresh, but lawn mower cuttings should never be offered as they ferment rapidly and can cause digestive disturbances. Hay is used as a substitute for grass, or fed in addition. Good quality meadow hay should be sweet smelling and not dusty. Dried grass products that retain colour and are highly palatable are also available. Hay can be fed from racks or nets to minimise contamination and increase the time spent feeding. Eating these fibrous foods throughout the day will keep the rabbits occupied and stimulate activity, preventing boredom and behavioural problems. Feeding hay also makes rabbits drink more water, which helps to keep their bladders healthy.



There are many reasons a rabbit may not eat hay, including overfeeding of concentrates, offering poor quality or mouldy hay, soiling of hay when used as bedding, not offering hay to young rabbits, and dental disease. Hay intake can be encouraged by gradually reducing concentrates. It may take several weeks for hay intake to increase as the rabbit adapts to the change in diet. Good quality hay should be provided away from bedding to prevent soiling. Toilet rolls, hay racks, paper bags, cardboard boxes and toys made to hold hay can all be used. Rabbits often deposit droppings where they eat so providing fresh hay by the litter tray for indoor rabbits may be beneficial. Experimentation with hay made from different grass species is effective in some rabbits. Pellets, dried herbs and treats can be mixed into the hay to encourage foraging. If hay is continually rejected a full oral examination by the vet to rule out dental disease may be required.



Green foods

Leafy green foods are also important and a variety should be fed daily to rabbits of all ages. New plants should be introduced gradually to weanling rabbits. Examples are broccoli, cabbage, chicory, chard, parsley, watercress, celery leaves, endive, radicchio, basil and other herbs, kale, carrot and beet tops. Wild plants such as bramble, groundsel, chickweed, dandelion, plantain, sunflower, wild strawberry, dock and yarrow can also be given if available. All green foods should be washed before feeding. Green plants are a useful way to provide variety, some nutrients, water and some dental wear, but as they are generally 90-95% water and often relatively low in fibre, excessively large amounts would need to be consumed to fulfil daily needs. Therefore they should not be fed in very large quantities. Dried plants and herbs, often mixed into hay, are now also available.

Any greens should be introduced gradually and preferably fed consistently in order for caecal bacteria to adapt. There are a few myths about feeding lettuce to rabbits. Some lettuces (e.g. iceberg) contain a substance called lactucarium, which can be harmful in large quantities and so they shouldn't be fed. Lettuce is high in water and has very little nutritional value, so, although some types can be fed in small amounts it is not generally recommended. Darker, more leafy and fibrous varieties (e.g. romaine lettuce) can be fed, as they are higher in fibre and nutrients. Like any food it should be introduced gradually to avoid digestive problems. Large amounts of lettuce, for a rabbit unused to it, can cause digestive upsets.

Commercial feed and why muesli is bad for rabbits

High-quality nuggets or pellets, where all the nutrients are present in each individual piece, are recommended for rabbits. These must never be fed in an unlimited way by constantly topping up the bowl, but fed as a small measured amount daily or used as treats or training rewards. A good general rule is to feed a maximum of 25g of pellets per kg bodyweight per day, but check the manufacturer's instructions. Many adult rabbits do not actually need commercial feed, especially if they are already overweight. Baby and growing rabbits require higher protein levels than adult rabbits, and special feeds for baby rabbits are available, but the bulk of the diet should still be grass or good quality hay.

We know that when presented with mixed feeds (coarse mix or muesli), many rabbits will only eat certain components. Picking out the bits they like, and leaving the bits they don't, means they get a very unbalanced diet, with an insufficient intake of fibre, protein, calcium and phosphorous. This can lead to many problems, the main one being dental disease. Feeding muesli has also been linked by scientific studies directly to the development of obesity, poor gastrointestinal motility, uneaten caecotrophs and messy bottoms, decreased activity levels and behavioural changes. Obesity is recognised as an increasing problem in many pets, including rabbits, and it is associated with a host of other problems such as osteoarthritis, liver and skin diseases. All this means that muesli shouldn't be fed to rabbits.

Pelleted or extruded diets overcome the problem of selective feeding and provide a consistent ration. Extruded diets are now very popular for pet rabbits, incorporating long fibre particles without the pellet becoming crumbly. The heated extrusion process improves starch digestibility, and extruded diets are more palatable and digestible than pellets. However, even though fibre content and length may be adequate for gastrointestinal function, these diets may not provide sufficient dental wear as they are eaten with a more vertical rather than lateral chewing action of the teeth and jaws, and so should always be considered complementary, and fed in limited amounts.

Overfeeding of any concentrated diets can be a significant factor in both gastrointestinal and dental disease, and can also lead to obesity and boredom. However, they have a role in the feeding of growing, pregnant and lactating, and diseased rabbits. They can also be used to ensure nutrient requirements are fulfilled in rabbits that are unwilling to consume significant amounts of grass, hay or green vegetables, or where the quality of these is questionable.

Thankfully, greater understanding and awareness of the role of diet in disease means that the situation for rabbits is improving. For example the PDSA, through their Animal Wellbeing reports, found in 2011 that 49% of rabbits were fed muesli as the main part of their diet and 750,000 rabbits in the UK were not getting enough daily hay or grass. Since 2011, however, there have been significant improvements, with an estimated 300,000 fewer rabbits being fed muesli-type diets and 200,000 more rabbits being fed the recommended amount of hay.



Selective feeding of muesli diets will cause dietary imbalances





Case study

Oscar was a rabbit who had had dental problems his whole life.

He had had all of his incisors (front teeth) removed but one continued to re-grow, despite repeated attempts by his previous vet to remove it. Since rabbits' teeth grow continually and there was nothing to wear it down it would require frequent trimming if left alone. Oscar was brought to Vets4Pets Harrogate New Park by Pets at Home's Support Adoption charity. To increase his chances of finding a forever home it was decided to attempt once again to extract his abnormal tooth. Fernando the vet X-rayed Oscar's skull before the operation to assess the depth and conformation of the tooth root, extracted the tooth under anaesthetic and then took more X-rays to confirm that no root had been left behind. The tooth did not re-grow and Oscar went on to find a good home shortly afterwards.



Treats and supplements

High fat or starchy treats should be avoided completely as they can lead to obesity and digestive upsets. These include honey sticks, beans, peas, corn, bread, breakfast cereal, biscuits, nuts, seeds, crisps and chocolate. What many people find surprising is that root vegetables such as carrots, and fruit, should also be regarded as treats. They should only be fed in limited quantities, as they are high in simple sugars, low in fibre and can lead to digestive disturbance and teeth problems.

The best treats to feed are healthy snacks such as small amounts of a favourite vegetable or herb. If the correct treats are chosen, they can provide your rabbits with an extra source of fibre.

Dietary supplements (e.g. vitamin and mineral powders) are not generally necessary if the correct diet is fed. They should be used only under the direction of a veterinary surgeon.

In summary, feeding the correct diet to rabbits not only provides the right nutrition, but also fulfils their behavioural needs to spend a large part of their time eating, and maximises health and welfare by helping to prevent a wide variety of commonly seen diseases.

Foods to be avoided: honey sticks, beans, peas, corn, bread, breakfast cereal, biscuits, nuts, seeds, crisps and chocolate



Diabetes

A look at the causes, clinical signs and treatment of diabetes in dogs and cats



Diabetes

Diabetes mellitus (DM) is a condition that is recognised both in people and animals. It is a failure in the mechanisms that control the levels of sugar (more specifically glucose) in the blood. The chemical messenger insulin is produced by the pancreas, an organ in the abdomen. The amount of insulin produced is controlled by the pancreas itself, in response to changes in the level of sugar in the blood. Insulin signals the tissues of the body to draw glucose out of the bloodstream, which causes a decrease in the blood sugar level. Diabetes mellitus occurs when the body does not produce enough insulin, or does not respond properly to it.



Currently, diabetes affects about

1 IN 200
CATS¹

and

1 IN 300
DOGS²

Two types of diabetes mellitus occur in dogs and cats:

Insulin deficiency where the pancreas does not produce enough insulin:

- This is similar to Type 1 diabetes in people, the form most commonly seen in children
- This is the most common type affecting dogs and, while most cases are irreversible, they can be managed with insulin injections

Insulin resistance where the body responds poorly to the insulin produced:

- The pancreas is unable to produce enough extra insulin to overcome this poor response
- This is similar to Type 2 diabetes, which is often diagnosed in older people, and is frequently associated with obesity
- This is the most common type seen in cats, and, although the exact disease process is poorly understood, it can be managed and in some cases remission can occur

Diabetes: A disease characterised by increased thirst and urination

Mellitus: 'Of, or pertaining to, honey'. This is a reference to the fact that the glucose in the urine will make it taste sweet (should you have the urge to taste it!)

There is a different type of diabetes, called diabetes insipidus, that results from a disorder of the pituitary gland and in which the urine is not sweet (or in other words, is insipid).

Why does blood sugar matter?

Glucose is the primary fuel source for all the cells in the body. An increase in glucose is known as '**hyperglycaemia**', whilst a decrease is '**hypoglycaemia**'. The signs for both hyper- and hypoglycaemia can be subtle in mild cases but, if left untreated can have severe consequences. These signs can include lethargy, changes in appetite, disorientation, seizures, a coma or even death.

What causes diabetes mellitus?

There are many factors involved in the development of diabetes mellitus. Obesity and a sedentary lifestyle are important risk factors for both cats and dogs. Breed and genetics have a factor, with Yorkshire Terrier dogs and Burmese cats being more at risk, whilst German Shepherd and Labrador dogs are at decreased risk. Other conditions such as pancreatitis (inflammation of the pancreas), urinary tract infections and treatment with steroids are also risk factors^{1,2}.

In a study, the average age when diabetes was diagnosed was 11.6 years for cats and 9.5 years for dogs³



How do I know whether my pet has diabetes mellitus?

When performing a routine health check on your pet, your vet will ask questions that should identify any suspicion of diabetes. It is important to look out for certain signs at home and to discuss any concerns you have with your vet straight away. The signs for diabetes can be subtle, and are often attributed to your pet 'getting old'. The changes noticed are not necessarily specific for diabetes, and could be an indicator of other problems and your vet will be able to discuss these in more detail.

If diabetes is suspected, your vet will most likely recommend a blood test to look for an increase in the level of blood glucose and to rule out other causes for the clinical signs noted. They will also look for glucose in a urine sample, since when blood glucose is very high the body will excrete excess glucose into the urine.

Measuring blood glucose levels alone can be misleading, since blood glucose is constantly changing, and stress, particularly in cats can cause a high blood glucose level. Another blood test to measure a different parameter called fructosamine is often performed as well, which gives an indication of the average blood glucose over the past few weeks. Your vet will discuss the procedures with you at each stage, but generally they are well tolerated by most animals and are minimally invasive.

SIGNS OF DIABETES MELLITUS

Any of these signs can indicate diabetes mellitus:

EARLY CASES:

- Increased drinking (polydipsia)
- Increased urination (polyuria)
- Weight loss (although many animals remain overweight)
- Increased appetite (polyphagia)

MODERATE CASES:

- Depression, off food or 'not themselves'
- Cataracts can develop suddenly in dogs; these are uncommon in cats

SEVERE CASES:

- Vomiting
- Weakness
- Seizures
- Coma



Case Study

Scabbers turned up as a stray at Vets4Pets Pudsey with no hair and covered in scabs (hence the name) and never left – he is now the practice cat.

He was drinking so much that the team did some blood and urine tests and diagnosed diabetes mellitus. You would have thought that managing a case of diabetes would be easy for a veterinary practice, but Scabbers had other ideas. He would regularly slit open bags of food and gorge himself, and would also make forays into the neighbouring community centre to scrounge crisps and snacks! Some rubber nail covers foiled his bag ripping habits and a special low carbohydrate diet has enabled the team to wean him off his insulin. He has now gone into remission after over a year of twice-daily injections.



Case Study

Since he was already under treatment for a heart murmur, Bob, a 12-year-old Border Collie was a frequent visitor to Companion Care Swindon.

At one of his recent visits his owner reported that Bob seemed lethargic and to be eating and drinking more. A physical examination revealed that despite this he was in fact losing weight, and a diagnosis of diabetes mellitus was confirmed by finding elevated levels of glucose in blood and urine samples, as well as an elevated fructosamine level.

Bob's owner was keen to start treatment, so the team of vets and nurses worked together to help him with giving daily insulin injections, as well as monitoring the condition using a home glucometer. It is taking some time to stabilise Bob's diabetes but he is already gaining weight and feeling more energetic.



What treatment is there for diabetes mellitus?

Many people find having their pet diagnosed with diabetes mellitus a daunting challenge, and sadly many pets are quickly lost to the illness or are euthanased within a few months of diagnosis. It is, however a condition that can be managed successfully by a committed owner with the close support of their veterinary team.

The administration of insulin by injection is essential to the management of diabetes mellitus in pets. Your vet or veterinary nurse will teach you how to give injections. Traditionally, this done using a disposable syringe and needle, drawing insulin from a bottle. More recently, a pen-type device has been developed, which makes dosing and injecting much simpler, whilst reducing waste.

It is important to make sure that your pet is eating normally before giving the insulin dose. If insulin is administered to an animal that isn't eating, low blood sugar is likely to result, which can make your pet unwell.

A controlled diet is an important factor in the management of diabetes. In humans, home monitoring allows the patient to adjust their own insulin dose, depending on their current blood glucose level. It is more challenging to do this in cats and dogs, and it is much easier for the pet owner to control their pet's food intake and to give a regular insulin dose.

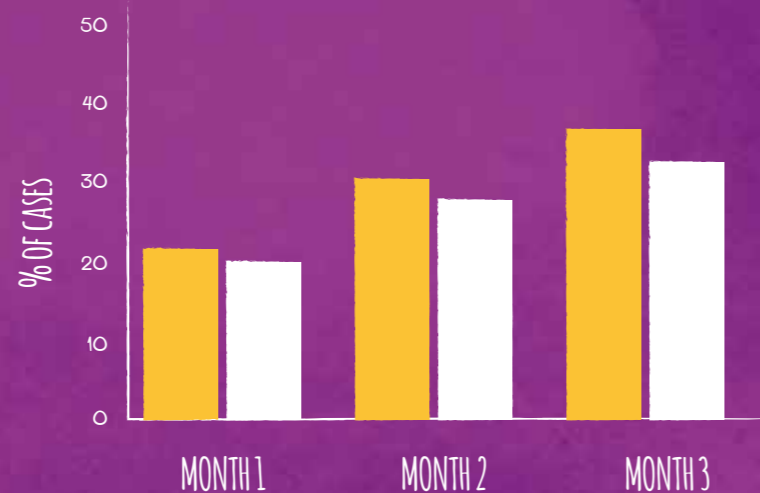
Maintaining your pet at a healthy bodyweight is also important, and an appropriate diet is key to this. Your vet may discuss a specially formulated diabetic food, or a weight loss programme, in order to reach your pet's optimum body condition. With appropriate diet and lifestyle changes it is possible for some cats to go into remission, and for them not to need long-term insulin therapy.

Exercise is also extremely beneficial for diabetic pets as it improves insulin sensitivity and helps to maintain a normal bodyweight. Diabetic dogs should have consistent daily exercise, ideally at the same time each day. Strenuous and sporadic exercise should be avoided as this can cause hypoglycaemia. Cats can be encouraged to be active through play, by using interactive feeding toys and a few cats even enjoy being taken for walks by their owners!

With appropriate diet and lifestyle changes it is possible for some cats to go into remission and not need further insulin therapy

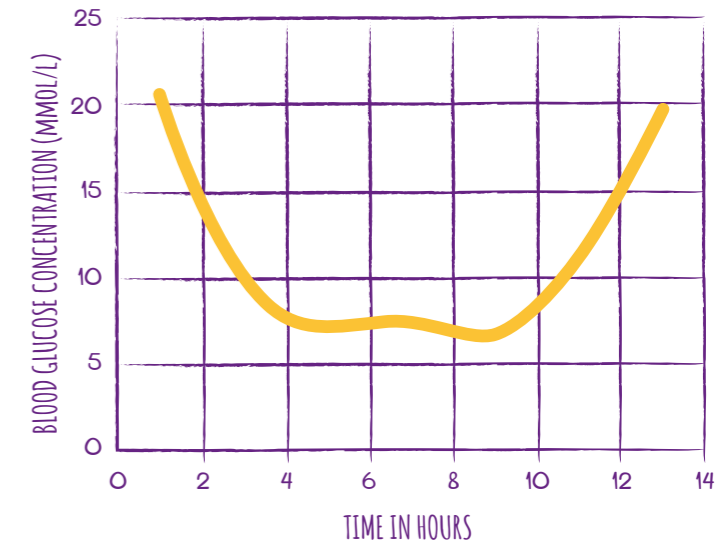
Diabetic pets lost in the months subsequent to diagnosis³

CATS
DOGS



Stabilisation

After starting on insulin, it will be necessary for your pet to revisit the veterinary practice frequently until your vet is confident that the right insulin dose has been determined and that your pet's diabetes appears to be stable. To help them decide this your vet will perform further blood and urine tests, and may well need to keep your pet in for the day to take a series of blood samples to produce what is known as a glucose curve. This shows how levels change through the day and can help to fine-tune the insulin dose and frequency of administration.



Monitoring

Due to all the variables involved (such as diet, exercise and metabolism) every case of diabetes mellitus is different. You can contribute a lot to the care of your pet by closely monitoring their condition at home. At the most basic level this entails keeping a daily diary to note appetite, thirst, general demeanour and other observations. It is also possible to test urine and blood samples at home, to record even more information about your pet's diabetic control.

Following stabilisation it is important that your pet has a check-up every few months, where your vet will perform a full clinical examination and find out how you and your pet have been getting on. This provides a great opportunity to discuss any queries or concerns you have and enables fine-tuning of the management regime.

Whilst it will take enthusiasm and commitment on your part, with the benefit of modern veterinary care and the support of your vet and their team, it is possible to keep your diabetic pet happy and healthy for months and even years to come.



References: 1. Niessen SJ, Forcada Y, Mantis P, Lamb CR, Harrington N, Fowkes R, Korbonits M, Smith K, Church DB (2015) Studying Cat (*Felis catus*) Diabetes: Beware of the Acromegalic Imposter. *PLoS One* May 29; 10(5) 2. Mattin M, O'Neill D, Church D, McGreevy PD, Thomson PC, Brodbelt D (2014) An epidemiological study of diabetes mellitus in dogs attending first opinion practice in the UK. *Vet Rec* Apr 5;174(14):349 3. Pets at Home Vet Group internal data analysed in partnership with MSD Animal Health

Microchipping Update

A recap on the latest news and advice on microchipping your pet





Introduction

In the 2014 Vet Report we highlighted the importance of microchipping pets and the recent changes in the law which will make this compulsory for dogs. Here, we recap what having your pet microchipped involves and give an update on the current situation. Part of the reason for the change in law is the concern over recent dog attacks; compulsory microchipping will aid authorities in identifying the owners of dogs involved. Clearly, this only applies in a very few cases, but there are many direct benefits of having any pet microchipped.

Two recent surveys have suggested that at least 25% of dogs, and 40% of cats, are still not microchipped^{1,2}. Furthermore, 20% of owners said they were undecided as to whether to get their dog microchipped. Owners' concerns regarding microchipping included the possibility of adverse reactions, and whether it was wise to microchip an old or ill dog².

What is microchipping?

A microchip is about the same size as a grain of rice and stores a 15-digit number on circuitry contained in a strong glass or biopolymer casing which is designed to prevent reactions to, or movement of, the chip.

There is no power on the chip but the number can be read using a scanning device. The number on the chip is recorded on one of several databases and is registered to your contact details.

The microchip provides a safe, permanent means of identification which is much more reliable than collars and tags that can fall off, break or be removed. The microchip may be the only means of identification, especially if an animal is stolen and recovered by authorities.

WHAT ARE THE REQUIREMENTS FOR MICROCHIPPING?

NORTHERN IRELAND

Led the way with compulsory microchipping since 2012.

WALES

In October 2015 Wales followed Scotland and England, by making it a legal requirement for all dogs to be microchipped by April 2016.

SCOTLAND & ENGLAND

From April 2016, it will be compulsory for all dogs over eight weeks old in England and Scotland to have a microchip, and for the details on the database to be up to date for the current owner. Failure to comply could result in fines of up to £500. Also, any imported dogs will continue to need a microchip and to comply with the PETS travel scheme.

250,000

pets go missing each year

What do I do if my pet is lost?

250,000 pets go missing each year. If your pet is lost, it is important to contact the database where your details are stored as soon as possible. They will record that your pet is missing, and can also assist you in contacting other parties, such as the dog warden, to help in the search. It is also important to contact all veterinary practices in the area (and not just your usual vet) in case your pet has been taken in to them. Some insurance companies can also help by recording the loss and producing posters and leaflets. There are organisations such as doglost.co.uk that are dedicated to reuniting lost pets with their owners.

If a stray pet is brought in to a vet, dog warden, or rehoming centre, they are routinely scanned for a microchip and, if one is found, the owner's details will be obtained from the database.

In most cases, this brings a very quick and happy end to a stressful situation. Some animals can be home within minutes of being brought in. If there is no microchip, it is often down to luck that you have contacted the right centre and that they have recognised the pet. It can take days or weeks to be reunited, and often this is unsuccessful.



31%
of owners admitted that their recorded details were out of date²

Where are my details stored?

When the microchip is implanted, you will be asked to confirm your details and these will be added to one of the several databases in the UK. They match the 15-digit number to your name, address and contact details, such as home and mobile phone numbers, and to your email address. Providing as many details as possible will make it easier for you to be contacted if your missing pet is found. The databases are secure, and can only be accessed by registered centres who will not divulge your personal details to any other parties but will contact you directly.

It is vitally important that your details are kept up to date; in a recent survey 31% of owners admitted that their recorded details were out of date².

You should update your details on the database any time you move or change phone number or email address. You should also ensure the details are in your name if you have recently acquired your pet, or picked them up from a breeder. You can do this by contacting the database holding your pet's information.

Your vet can help you if you don't have a record of your microchip brand or number

Chip Number Prefix	Brand	Database	Phone Number	Website
968	Petcode			
985	Identichip	Anibase	01904 487 600	www.anibase.com
978 or 90008	Backhome			
977	Avid	Avid	0800 652 9977	www.pettrac.co.uk
978	Pet Protect	Pet Protect	0845 603 1294	www.petprotect.co.uk
981	Tracer Advance			
956	Pet Detect			
968	Indentitrac			
952	Jecta			
967 or 958	Pet ID	Petlog	0844 4633 999	www.petlog.org.uk
900032 or 9001	Micro-ID			
934	Identics			
941 or 968	Peddymark			
961	CoreRFID			

References: 1. BVA Spring 2015 Voice of the Veterinary Profession survey 2. MedicAnimal's Microchipping Survey <http://milled.com/medic-animal/bte4cpVCToHd95P> 3. Owners required to microchip their dogs by next April <http://gov.wales/newsroom/environmentandcountryside/2015/owners-required-to-microchip-their-dogs-by-next-april/?lang=en>

Alabama Rot Update



Alabama Rot was featured in last year's Vet Report in order to raise awareness of the condition, and to seek participation from dog owners in research aimed at trying to understand the cause of this life-threatening condition.

Alabama Rot is also known as idiopathic cutaneous and renal glomerular vasculopathy or CRGV for short. The condition first appeared in the late 1980s affecting Greyhounds in the United States.

A condition that appears clinically similar to CRGV was first seen in the UK in 2012, with a strong geographical concentration in and around the New Forest region of Hampshire.

The first sign of CRGV is usually skin sores on the limb extremities. This is followed within two to seven days by acute kidney failure, which may cause vomiting, reduced appetite and lethargy. Unfortunately, many affected dogs will not recover, even with expert supportive veterinary care.

At time of writing the number of confirmed cases in the UK stands at 56¹, but we are still no closer to understanding what causes the condition or how it can be avoided or prevented.

¹. Data supplied by Anderson Moores Veterinary Specialists

GEOGRAPHICAL SPREAD OF ALABAMA ROT¹

● Confirmed cases

- 16 Hampshire
- 6 Dorset
- 6 Greater Manchester
- 4 Surrey
- 2 Kent
- 2 Lancashire
- 2 Nottinghamshire
- 2 Somerset
- 2 West Yorkshire
- 2 Worcestershire
- 1 Cornwall
- 1 County Durham
- 1 Monmouthshire
- 1 Northamptonshire
- 1 Shropshire

● New counties affected

- 2 Cheshire
- 1 Berkshire
- 1 East Sussex
- 1 Dumfries & Galloway
- 1 North Yorkshire
- 1 Wiltshire



To assist with the research in to this condition dog owners can complete a questionnaire here: <http://www.aht.org.uk/cms-display/aki.html>



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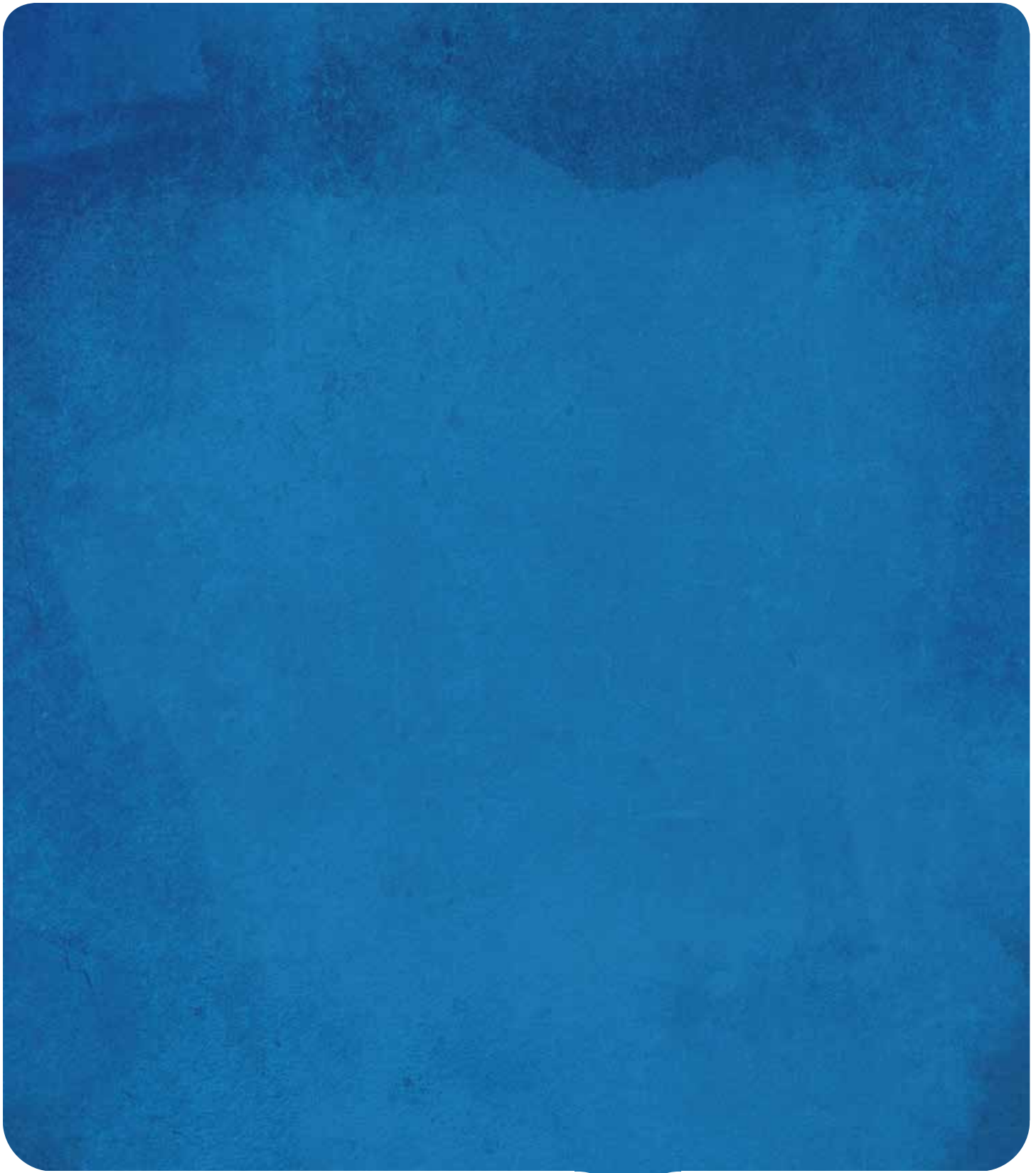
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The Centre for Evidence-based Veterinary Medicine is an independent research group at The University of Nottingham, who aim to do research to support clinical decisions made in practice. We are a group of vets who are passionate about improving the care of animals and we involve vets, nurses, owners and farmers in our research. If you would like to know more visit our website <http://www.nottingham.ac.uk/cevm>





Vets4Pets
Putting your pet first

