Clinic

The feline magazine from **Cats Protection** for veterinary professionals

Surgery
- pelvic fractures

Naomi Williams MRCVS offers a pragmatic guide to treating pelvic fractures in first opinion practice

Welfare

ISFM Cat Friendly Clinics – how one practice achieved silver accreditation

Anaesthesia

Preventing and treating hypothermia in cats under anaesthesia

Medicine

The new 'gold standard' – affordable vet care for cat owners

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Meet the team

Daniel Cummings, Central Behaviour Officer

How long have you worked for Cats Protection? About four and a half years.

What did you do before working for Cats Protection? I was a behaviourist and trainer for the Dogs Trust, helping develop people's training skills and rehabilitating dogs. Prior to this I worked at Battersea Dogs and Cats Home.

What is your role within Cats Protection? As the Central Behaviour Officer; I provide behavioural support for cats in care and those rehomed. I create resources to improve people's understanding of cats and their needs.

What do you like most about your job? Helping the care givers understand why cats do what they do and how to address feline behavioural issues. My philosophy is: happy cat, happy owner.

What is your most memorable Cats Protection moment? My first regional Cats Protection conference – I've never had such a whirlwind of new faces and pretending to remember people's names!

Do you/did you have a pet/pets? I grew up with dogs and cats (and guinea pigs, rabbits, degus chinchillas, terrapins and budgies). I currently don't have a pet as I live in rented accommodation. Thankfully, the Cats Protection Advocacy team is encouraging landlords to promote pet-friendly housing through their Purrfect Landlord campaign www.cats.org.uk/purrfectlandlord

What are your hobbies/other interests? I love movies, obstacle runs, photography and juggling.

Where is your favourite place to visit? I love getting back home to Northern Ireland and the North-Antrim coast. It is a beautiful landscape – you can understand why there's been decades of conflict with different countries claiming ownership over it.

If I weren't doing this, I'd probably…be a tambourine player in a Bob Dylan tribute act.

The new **‘gold standard’** – affordable vet care for cat owners

The consequences of the COVID-19 pandemic have been far reaching and perhaps now more than ever, we are seeing the impact of the pandemic within small animal practice. As people spent more time in their homes, the number of people acquiring pets increased significantly in the UK and this, together with staffing shortages, led to some practices having to close their registers to new clients and restrict their scope of service. As the forecast economic recession begins to take effect, it is anticipated that people will have less money to spend on their pet’s healthcare and this is likely to increase the need for vets to practice pragmatic cost-saving medicine.

To be pragmatic is to deal with things sensibly and realistically in a way that is based on practical rather than theoretical considerations. In medical terms, this requires a big picture approach. This necessitates giving consideration to the whole situation, which in a private practice is likely to include multiple factors such as the animal's welfare, owner finances, time constraints, compliance of the animal and owner and the skillset and resources of the practice. For many years, the veterinary profession has deemed a 'gold standard' approach to be best; implying that what would be done if money were no object is the ideal. However, this concept assumes perfection and does not take into account this unique set of circumstances which surround each individual case and which influence our decision making. The Association of Charity Vets has defined gold standard medicine as "care aimed at achieving the best welfare outcome for the animal, taking into account the care environment and the means and needs of the owner". As a profession, perhaps we should be moving away from recommending the idealised gold standard and using a spectrum of care approach. This is one in which the standard of care reflects a continuum of acceptable care that takes into account available evidence-based medicine, client expectations of care and financial limitations that may limit diagnostic and treatment options. With many vets reporting that client financial restraints have a significant contribution to their feelings of professional burnout, using this model could help us to continue our oath while working within the financial constraints of our clients. Good communication with such an approach is essential as if steps are to be cut in a work-up, we need to ensure owners understand what they are forgoing and what risks may be involved.

Before discussing a cost-effective approach to diagnosis and treatment, it is imperative to highlight the importance of preventative healthcare. Due to the large surge in the number of new pets acquired during the pandemic, it is vital that we promote preventative health care as a profession to avoid problems further down the line. This will have the effect of both improving animal welfare and saving clients' money in the longer term by helping to prevent the treatment of costly conditions such as skin disease due to flea allergies, pyometra and dental work.

Diagnostic testing is an area where available resources must be used efficiently. It is all too easy to over test and so when formulating a diagnostic plan, the biggest question to ask ourselves is will this test change the treatment plan. If the answer is no, then do not run the test as it is not an effective use of finances. Consider a suspected case of pancreatitis in a cat. Amylase and lipase are not useful in cats so fPLI would be a sensible choice as the most sensitive and specific test for diagnosing feline pancreatitis. However, a normal fPLI does not completely exclude pancreatitis, especially if it is chronic low-grade disease. An in house fPLI test kit may lead to more false positives so a positive result ideally needs to be followed up by an fPLI assay. This does not mean that the test should not be done, only that consideration be given to how it is going to be used or followed up on before proceeding and spending owner's money on a test that in isolation may not provide you with the information you are looking for.

A good history and physical exam can give so much information and making use of cheaper tests with a high diagnostic value, for example urine tests, is a sensible idea. It would also be prudent to question whether regular blood tests for monitoring are always absolutely necessary.

For example, if an animal is arthritic, will you withhold NSAIDs because it has elevated renal values, even though they improve the quality of life and keep that animal comfortable?

Figure 1.

Clinical sign	Initial investigation if finances are limited
Heart murmur	Auscultate thorax and assess pulses-sinus arrhythmia makes clinically significant cardiac disease unlikely Grade 1-4 in asymtomatic cat with no other cardiac abnormalities – no further cardiac work in Cats Protection care. Learn how to perform a basic aortic to left atrial ratio to assess for left atrial enlargement.
Lameness	Thorough orthopaedic exam. Radiography only if it likely to change the outcome. Trial treatment may be appropriate.
Mass lesions	Utilising clinical exam; FNA – this can help for quick diagnosis of common lumps such as lipomas and mast cell tumours.
Polydipsia and polyuria	Urinalysis – USG, dipstick and sediment examination in house.
Reduced appetite and weight loss	Thorough feeding history and full clinical exam. Urinalysis and basic blood biochemistry if weight loss in face of adequate food intake.
Diarrhoea	90% of actute diarrhoea cases will be self-limiting. Make use of in-house faecal smears for infectious agents. No need for post-treatment testing if clinical signs have resolved at the end of the course of treatment.

Figure 1 shows a suggested initial approach to common presentations where finances are limited. Many common diseases do not require a vast financial input to diagnose, treat and monitor them effectively. For example, diabetes mellitus, is a disease where the diagnosis can be clinical. For monitoring, a history, physical exam, urine sample and blood glucose at the nadir to check the patient is not hypoglycaemic, are probably the most useful ways to monitor and certainly cheaper than blood glucose curves or a fructosamine test. For cats on medical treatment for hyperthyroidism, if money is very restricted and a cat's clinical signs indicate that the disease is uncontrolled, a blood test may be unnecessary to confirm what you already suspect. A trial increased dose of anti-thyroid medication would be a perfectly reasonable approach. For renal disease, urinalysis and creatinine may be sufficient for diagnosis. There may potentially be other clinical pathology abnormalities such as hypokalaemia and hyperphosphataemia, but if the owner has limited money and the animal is coping well at this point, would testing these parameters change your treatment plan? Renal patients can be substaged by assessing the urine for protein and checking blood pressure to check whether they are hypertensive. If there is less than 1+ protein on a urine dipstick then there is no indication to spend money on a urine protein creatinine ratio.

Cost efficient treatment plans must be timely and effective so act early and try to formulate a plan that will have the shortest time to resolution in order to improve welfare and save money. This may mean making difficult decisions such as advising limb amputation in complex fracture cases for example. Where finances are limited, this is likely to be a more effective use of the client's money and result in a quicker improvement to the animal's welfare in comparison to multiple failed surgeries. It is also important to re-evaluate patients and alter the treatment if something is not working. Do not fall into the trap of sunk cost fallacy and continue with something that is not working because you have put time and money into it. We should also not be afraid to offer trial treatment in well-chosen cases. If presented with a seasonal pattern of allergic skin disease for example, rather than an expensive skin work-up, trial treating with steroids could really improve a patient's welfare and be a cost-effective treatment. As a side note, steroids should not be overlooked as cheap and effective drugs which can be invaluable for managing conditions including allergic skin disease, feline asthma and immune mediated diseases. In general, cats are less susceptible to adverse effects of steroids than dogs and so particularly in our feline patients, these can be really useful and cost-effective medications.

As a profession, we should consider whether we are sometimes guilty of over treating. Limited time when busy, risk aversion, easy access to testing and fear of litigation may all be reasons as to why we could find ourselves guilty of over testing, over treating or offering procedures which are not absolutely vital to an animal's welfare. As vets we should not be afraid to do nothing where this is appropriate. If an animal is coping ok then treatment may not always be required. Similarly, when presented with animals with multiple problems, it is imperative to focus on the most critical treatable conditions which will have the biggest impact on the animal's welfare.

One option which we should not be afraid to present to owners is euthanasia. Euthanasia does not cause suffering and therefore does not cause poor welfare, however it is an ethical and emotive issue. Being open with the client around euthanasia and talking to them early on about this as a potential option, can help owners to avoid the pitfalls of allowing anthropomorphism, letting quantity of life override quality, needing the certainty that everything possible was done, seeing euthanasia as a failure and not being able to let go, to cloud their decision in choosing euthanasia where it is the most appropriate way forwards.

To practise evidence-based, pragmatic medicine is not to practise an inferior medicine, nor does it mean compromising animal welfare. By recognising that more does not always mean more when it comes to animal welfare, we can see that in fact pragmatic medicine puts the animal's wellbeing at the very forefront of the decision-making process. In considering the whole picture, asking ourselves what tests, treatments and procedures are absolutely necessary, appropriate and beneficial, and communicating clearly with owners, we can formulate a plan for our patients that is timely, cost effective and most importantly improves their welfare. C

Lauren Kirk
BVetMed MRCVS

Lauren graduated from the Royal Veterinary College in 2010. After a year in private practice, she joined the RSPCA working at the Harmsworth Animal Hospital in London.

Lauren has worked almost exclusively in charity practice since then and has volunteered on a number of projects abroad with the Worldwide Veterinary Service. Lauren joined Cats Protection as a part time National Cat Adoption Centre veterinary surgeon in 2018 and she has one ex-Cats Protection cat of her own called Betsy.

Camino de Santiago Trek

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- visit **www.cats.org.uk/camino23**
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- call Evie on **01825 741 960**

This trip is being organised for Cats Protection (Reg Charity 203644 (England and Wales) and SC037711 (Scotland)) by Charity Challenge. Cats Protection is acting as an agent for Charity Challenge.

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ISFM Cat Friendly Clinics

- how my practice achieved silver accreditation

In 2019 I became a cat-friendly advocate and helped my current practice to gain ISFM Cat Friendly Clinic Silver accreditation. But why is taking part in the Cat Friendly Clinic programme a good idea for your practice?

There are three levels of accreditation; bronze, silver and gold. To achieve these, certain requirements such as practice design, facilities, equipment as well as the standard of care towards cats from all members of the team must be met. The main features of an ISFM Cat Friendly Clinic include:

- longer and flexible appointment times
- awareness of cat security
- awareness of a cat's sensitivity to smell
- consideration of clothing worn in practice
- staff familiar with cat breeds, inherited diseases and characteristics
- preventative healthcare for all life stages
- who to refer cats to if needed

Practices also need to be an ISFM member practice. Being a member has many benefits including access to a monthly journal, webinars, newsletters and a veterinary forum.

To achieve ISFM accreditation all staff must 'think cat' and there are a number of training courses as well as information available to help with this. As a cat advocate, I ensure cat-friendly standards are adhered to by the whole team such as cat-friendly handling (no scruffing!) and by treating cats calmly, carefully and with respect. By developing 'cattitude' within the practice, all members will play a part in offering cat-friendly care from the moment a client makes first contact.

My experience of helping my practice become an accredited clinic has been very positive. When I was given the opportunity at St Georges Veterinary Surgery in Telford, I felt I could really make a difference.

I found the initial application for becoming a cat-friendly clinic very interesting although it does take a while to work through. Our practice is a one vet small animal clinic and our out of hours service is provided at a different site, however with a few changes we were still able to go for the silver level of accreditation.

We already had a large waiting area and this could be split into separate dog and cat zones. We started off with some café-style barriers and small tables where baskets could be placed off floor level. We now also have a cat carrier tree and provide towels which can be sprayed with pheromone diffusers and placed over the carriers to help relax the cat while waiting. The separate cat area has proved to be a real hit with clients.

We initially didn't have a separate cat ward; however, we did have large enough kennels and would try to have a cat-only operating and consulting day unless of course we had any emergency dogs that needed to be seen. Our kennels don't face each other which helped to add some privacy for the cats, and by placing a cat hide in the kennel, this allowed the cats somewhere to feel even more secure.

Last year we were able to have a small separate cat ward built, and this is much more comforting for our hospitalised feline patients.

The 'cat zone'

Quiet cats-only ward

To become cat friendly, consultations should last a minimum of 15 minutes and time should be taken to allow the cat to come out of their cat carrier of their own accord, or to let them stay in their carrier to be examined if the lid can be removed. Luckily the team I work with have been very supportive and were more than willing to become more cat friendly in consults and with our in-patients. All staff must read through the Cat Friendly Clinic guidelines provided by ISFM, and vets and RVNs are also encouraged to complete Cat Friendly CPD. I have undertaken both the ISFM certificate in feline-friendly nursing and more recently the ISFM advanced certificate in feline behaviour. These courses have furthered my cat knowledge, which I am confident in sharing with both my team and our clients.

For silver level, there must be an operating theatre with adequate cat equipment. Dental equipment, diagnostic imaging and lab facilities should all be provided. If these are not available then bronze level still may be achievable. There is a more in-depth process for gold level including separate consulting rooms and a dedicated cat theatre.

As well as making changes to the practice and having cat-friendly equipment it is also important for the team to communicate and assist clients with being cat friendly. It is important that the practice ensures the client is educated on cat-friendly ways to bring their pet in to the clinic, and to also support owners with cat care at home. Owners need to know who in the practice is caring for their cat, have suitable information such as leaflets provided and be given estimates for procedures. The team should be able to advise on products which make a difference to cat wellbeing and welfare, from easy-to-give medications to soft collars instead of the traditional stiff buster collars.

This year we will have been accredited as a Cat Friendly Clinic for three years, and I am now working towards our reaccreditation. This allows me to update ISFM with some of the changes that have been made at the clinic more recently.

Hopefully in the future more practices will become accredited Cat Friendly Clinics. Although there is initially quite a lot of work involved, in the long run this will ensure practices up and down the country will have standards in place to assist in making the cat's visit as calm as possible. It is great that there are now three levels of accreditation as this allows more flexibility for smaller clinics who may have to use other sites for operating or out of hours to also take part and ensure their practice and team are more cat friendly. C

Recovery cage set up

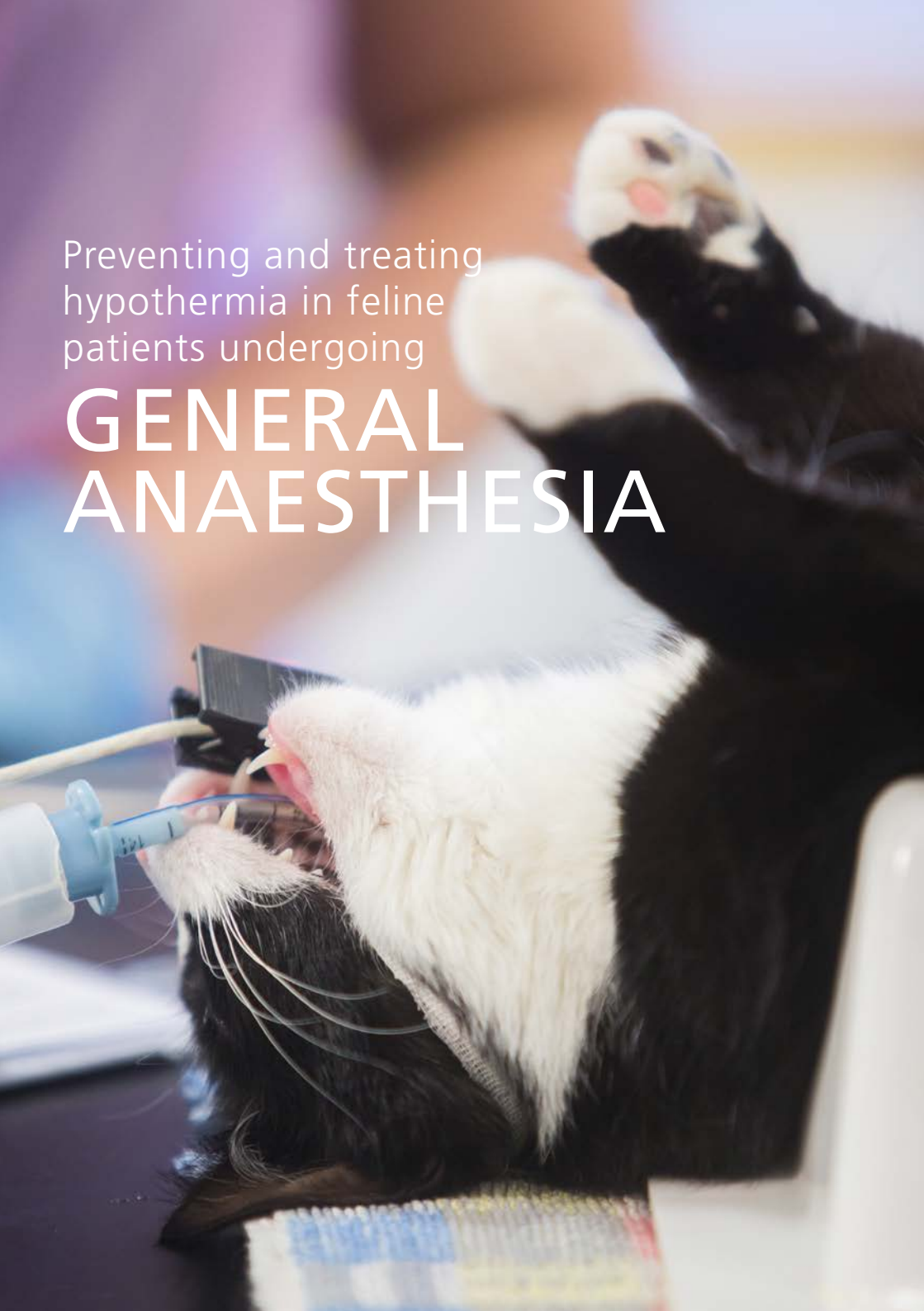
Further information and to apply to become accredited is available from the ISFM website **here**.

More information on the ISFM easy-to-give products is available from Cat Friendly Awards **here**.

Avril Parker-Jones

BSc/BSc (Hons) RVN ISFMCertFN and ISFMAdvcertFB

Avril is the Head Nurse of St Georges Veterinary Surgery in Telford, having worked in veterinary practice for 16 years before qualifying as a registered veterinary nurse in 2012. Avril has worked in a variety of veterinary practice settings including mixed, charity, small animal and out of hours clinics. Avril has a passion for cat behaviour and making a difference to the wellbeing of cats. She is the cat advocate at the clinic, which gained the ISFM silver Cat Friendly Clinic status in 2019.



Preventing and treating hypothermia in feline patients undergoing

GENERAL ANAESTHESIA

Did you know that 95% of cats undergoing general anaesthesia become hypothermic[1]?

I always knew cats were more susceptible to hypothermia, but I had not realised the figure was so high!

I have made it one of my passions to keep all my patients as normothermic as physically possible, I have seen first-hand the improvement this makes for our patients. Smoother and quicker recoveries from anaesthesia to name but a few.

But why are felines so prone to suffering from hypothermia when placed under general anaesthesia? This article will discuss why our feline patients get so chilly, how we can prevent this happening in the first place, why we should be avoiding hypothermia, and how to safely treat the hypothermia if it occurs.

How should we be monitoring temperature in our feline patients under anaesthesia?

To start with, we should ensure we have a preoperative temperature, so we know what is classed as 'normal' for our patient. Hypothermia can be classified into mild (32-35°C), moderate (30-35°C) and severe (below 30°C), by the American College of Surgeons[2], although we should aim to keep our patients normothermic during all anaesthesia episodes.

Ideally, we would be continuously monitoring our patient's temperature under anaesthesia, this could be using a multi-parameter monitor, or just a traditional thermometer. The temperature attained should be annotated on the anaesthesia form and action taken should the temperature increase or decrease, the action taken should also be noted.

Thermometer probes in the anaesthetised patient could be placed in the rectum, oesophagus, or nasopharynx. Some studies will suggest that rectal temperature can be inaccurate due to potential faeces being present meaning we cannot measure core temperature, a rectal temperature reading will however allow us to follow trends[3].

The close monitoring of the patient's temperature should continue into the recovery period, with further warming aids utilised where needed. In a conscious patient this will not be continuous, but at minimum every 20 minutes until their temperature has returned to within a normal range and is remaining so.

Kennels insulated with newspaper, kennel liners, thick bedding, blankets, and a small pillow or rolled up blanket to facilitate a pillow can help keep the patient feeling secure and prevent further heat loss. An incubator could also be utilised for the patient's recovery.

Patient recovering in an incubator with oxygen supply

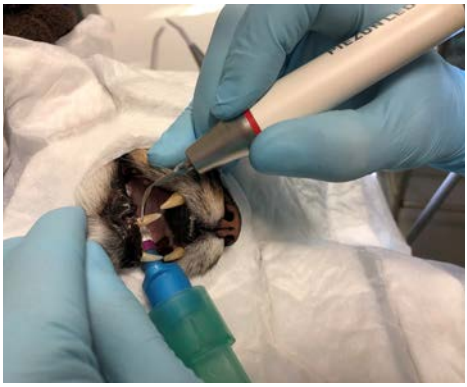
Patient keeping warm under blankets and using a pillow

The importance of preventing hypothermia

Hypothermia brings with it a multitude of negative effects and outcomes for our patients, including:

- delayed recoveries due to the reduction of enzymatic activity reducing drug metabolism
- platelet function being affected
- when a patient shivers, their oxygen requirements increase by 40%. Shivering is also not a pleasant experience, particularly if there are surgical wounds
- recovery time will be prolonged, potentially by hours, if the patient returns to recovery hypothermic. This places the patient at risk and creates more work for the recovery team as the patient will need to be more closely monitored and nursed
- for every 1°C drop in body temperature, the Mean Alveolar Concentration requirements (MAC) will reduce by 5%. This leaves the patient at risk for inadvertent overdose of the anaesthesia agent being utilised
- anticholinergics will not be effective (such as atropine and glycopyrronium), thus making it harder to treat a hypotensive episode caused by reduced cardiac output originating from bradycardia
- blood viscosity increases
- pulse oximetry will not read as accurately in a hypothermic patient
- arrhythmias due to slowed myocardial conduction, resulting in abnormal depolarisation and repolarisation, along with tachypnoea or respiratory depression as hypothermia progresses
- splanchnic and hepatic perfusion decreases causing decreased hepatic metabolism and GI motility
- delayed wound healing in the post operative period
- increase infection rates, causing wound breakdowns or revision surgery to be required

Heat moisture exchange



A patient undergoing dental treatment, the kennel liner prevents any water touching the patient

• for every 1°C drop in core temperature there is a 6-7% decline in cerebral blood flow, resulting in a concurrent deterioration in mentation

• severe hypothermic cases, or prolonged episodes of hypothermia, can result in death of the patient[1]

Why do our patients become hypothermic under general anaesthesia and how can we prevent this from happening?

For all patients the ability to thermoregulate is depressed by anaesthesia. The anaesthetic agents we use on a regular basis depress the patient's central nervous system, which reduces its sensitivity to changes in body temperature. In conscious patients, they can change their behaviour to maintain their body temperature, such as seeking warmth, cuddling up somewhere or moving away from a cold stimulus.

It is far better to prevent heat loss, rather than facing the challenge of re-warming our patients. Caution must be taken when re-warming a patient to ensure this doesn't happen too quickly. This may sound counterproductive, but if we warm a patient more than 1°C per hour then this can cause tissue damage, with the vasodilation having the potential to cause an increase in intracranial pressure, which will reduce cerebral perfusion and potentially worsen a neurological outcome[4].

There are four main methods of heat loss. These are:

1. evaporation

2. conduction

3. convection

4. radiation

Evaporation losses occur when a patient is exposed to breathing cold non-humidified air, or in the case of anaesthesia, usually oxygen. We reduce this method of heat loss by utilising rebreathing circuits and understanding how to use low flow anaesthesia.

We could attach a heat moisture exchange between the patient's endotracheal tube (ETT) and the breathing circuit.

Patient wearing a fleecy coat

Patient wearing a fleecy coat, socks on and laying on an insulating bed, the patient would then have a forced warm air blanket and fleece blanket placed on top

Abdominal surgery will lead to a great deal of heat loss via evaporation due to the tissues being exposed to the atmosphere during surgery, surgery should therefore be performed as safely and swiftly as possible. Every effort should be made to limit the wetting of these patients while preparing them for surgery. Ideally skin preparation solutions would be warmed to body temperature, as would any surgical lavage.

During surgery of any kind, prevention of the patient becoming wet is imperative. The bladder could be expressed to limit them urinating themselves once relaxed under anaesthesia. Waterproof drapes could be utilised for orthopaedic and soft tissue surgery, suction available and used regularly, or double draping the patient. Oral surgery patients could have a kennel liner placed over their head, with a hole made for their muzzle and ETT, to prevent water from the drills and scaler from landing on the fur of the patient.

Conduction losses can be avoided by not placing the patient on any cold surfaces, all tables and kennels should be lined well, or have washable mattresses. We must insulate our patients as much as possible to prevent gear loss by conduction, there are numerous ways we can do this such as:

- wrapping our patient in bubble wrap
- using baby socks on their paws
- placing patients in fleece coats where appropriate
- fleece blankets
- insulating foil blankets
- forced warm air blankets
- circulating warm water blankets
- placing the patient on insulating bed

We must be wary of causing hyperthermia in our patients too, reiterating the fact of constantly measuring a patient's temperature.

Convection heat losses can occur if the patient is placed in a draughty area. A warm kennel and theatre environment should be provided and windows closed to ensure the patient is not exposed to cold air, this leads us on to radiation heat losses. All areas of the hospital should be kept at an ambient temperature to reduce the chances of heat loss in your patients, this includes diagnostic imaging, dentistry, prep room, and recovery areas. Ideally the ambient temperature would be kept above 23°C to help prevent hypothermia.

Other causes of hypothermia can include:

- muscle inactivity
- reduced metabolic rate
- drug induced peripheral vasodilation, such as seen when using acepromazine
- patients may not have been eating well prior to the surgery, and therefore have less fat and muscle to insulate them
- depending on the surgery/diagnostics being performed the patient may be turned regularly, causing body heat to keep being released into the environment
- many drugs that are used to facilitate sedation and anaesthesia will cause hypothermia by depressing the hypothalamic thermoregulatory centre[5]
- heat loss will start to occur as soon as the patient receives any sort of pre-anaesthetic medication[6]
- surgery or diagnostics can take some time. The longer the duration of anaesthesia, the more likely the patient is to become hypothermic
- younger patients will have immature thermoregulatory abilities
- older patients may have less body fat and muscle coverage
- poor body condition due to neglect
- hypothyroidism
- higher ASA status
- cardiac conditions
- diabetes

We must ensure that we warm our patients safely, care should be taken when using:

- hot hands – these can easily tear and burn the patient or yourself, also, as they cool, they can then take away the warmth from the patient
- forced warm air without a suitable cover may cause burns
- heavy blankets on smaller patients will reduce their ability to breathe spontaneously
- hot microwave disk may cause burns without appropriate heating and padding between disk and patient
- heat pads without very thick bedding (do not use at all in heavy dogs) – particularly if a lot of fluid lavage is expected for abdominal surgery
- care using warm water circulating mats/blankets – follow manufacturers' guidelines carefully, replacing units and parts as detailed. The sensor will need to be always in contact with the patient and care must be taken with higher setting, particularly in heavier patients
- wheat filled bags can cause skin burns as often have hot spots within them, they mustn't be in direct contact with the patient at all

What makes feline patients particularly prone to hypothermia?

Cats have a large surface area to volume ratio in comparison to most dog breeds, we must remember that cats are not just small dogs! Due to the small size of our feline patients, a non-rebreathing anaesthesia circuit may be required, this will likely require a higher fresh gas flow, particularly if capnometry is not available.

Oxygen is cold and will chill the patients quickly when used at a higher rate. Capnography should be utilised to reduce the fresh gas flow being supplied. The temperament of some cats may mean they have not allowed any warming aids to be in place preoperatively and they may also resent these efforts in the post operative period.

Summary

It is imperative that we do all we can to firstly prevent hypothermia in our patients and know how to safely treat it when it does occur. There are numerous ways in which we can do this, have you been inspired to make any changes at your clinic? Feel free to get in touch at Stacey@perryreferrals.co.uk to share your ideas, experiences, or for information on patient warming packs. C

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RVN, ISFMCERT (FN),
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Stacey qualified as an RVN in 2014 and the 'Referral Veterinary Anaesthesia and Dental Nurse' at Perry Referrals. Stacey works alongside Rachel Perry, both a RCVS and European Veterinary Specialist in Dentistry. She is extremely passionate about veterinary anaesthesia and analgesia, particularly within the dentistry world.

Stacey provides bespoke in-house dental and anaesthesia training sessions. Her hope is to make veterinary nurses' lives that little bit easier by sharing the experience and education she has been able to gain along her own professional journey.

Feel free to get in touch on 07885 478 277, Stacey@perryreferrals.co.uk or follow on Facebook and Instagram 'Stacey at Perry Referrals'.

Top five tips on relieving cat allergy symptoms

1

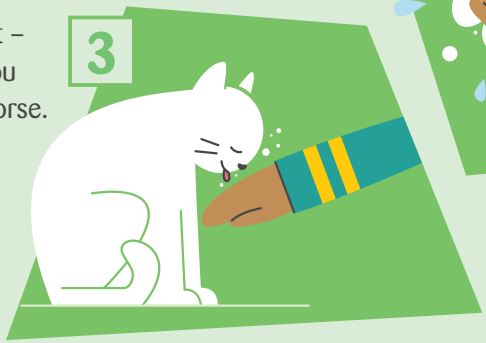
Consider feeding your cat PURINA® Pro Plan LiveClear to help reduce allergens in your home.

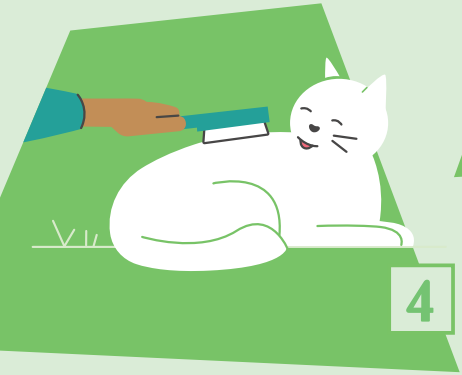
2

Wash your hands thoroughly after stroking your cat.

3

Avoid being licked by your cat – this will spread allergens to you and could make symptoms worse.



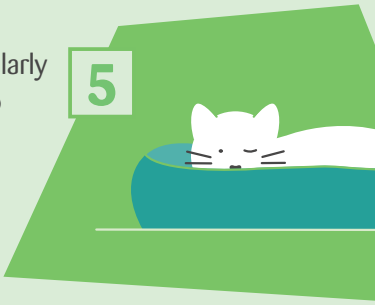


4

Groom your cat outside daily and wipe them down with a damp cloth.

5

Wash your cat's bed regularly and avoid placing near to air vents.



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Treating pelvic fractures in first opinion practice

- a pragmatic guide

Pelvic fractures are commonly seen in cats, usually as the result of major trauma like a road traffic collision. As veterinary surgeons, we are often faced with decisions on how to manage this type of fracture. The aim of this article is to give an overview of dealing with pelvic fractures in a pragmatic way.

Initial assessments

As with any trauma patient, before turning our attention to the fractures sustained, we should perform a physical examination of the entire animal to check for common complicating injuries seen post trauma.

Routine chest radiographs or a 'catogram' can aid ruling out traumatic lung injuries and pneumothorax.

The urinary tract should be assessed as a ruptured bladder or urethras may occur. Bear in mind that a palpable bladder does not mean an intact urinary tract – radiographs, ultrasound scan for free fluid or contrast studies may be indicated particularly if there is blood in urine, reduced production or the animal appears particularly unwell.

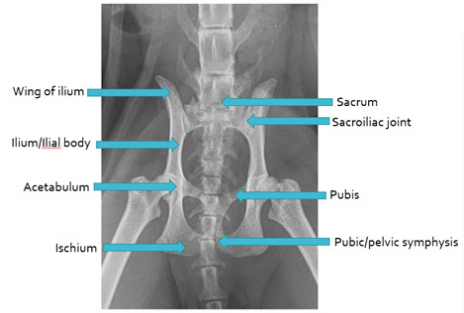
Neurological assessment should pay particular attention to the hind quarters as peripheral nerve injuries are common. The sciatic nerve passes over the ischium just caudal to the acetabulum, before coursing down the leg. Fortunately, neuropraxia is not often permanent but owners need to be made aware it can take several months to return to normal. If sacrococcygeal nerve root damage resulting in bladder paralysis and urinary incontinence is observed (most commonly with concurrent 'tail pull' injuries), then return to normal function is not guaranteed. Absent deep pain of the hindlimbs and lack of anal tone/reflex are also poor prognostic indicators.

Femoral pulses should be checked as vascular injuries are possible due to femoral artery position.

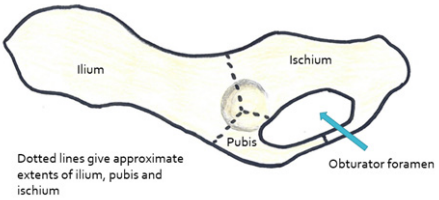
Finally, although rare, rectal injuries can occur and a gentle digital examination of the rectum to check for blood can indicate if more detailed examination is needed.

Following initial examinations and stabilisation of the patient the next step is obtaining some radiographs – ventrodorsal and lateral views to assess for the presence of pelvic fractures.

Cat experiencing pelvic pain



Ventrodorsal view of the pelvis



Sketch of the lateral pelvis

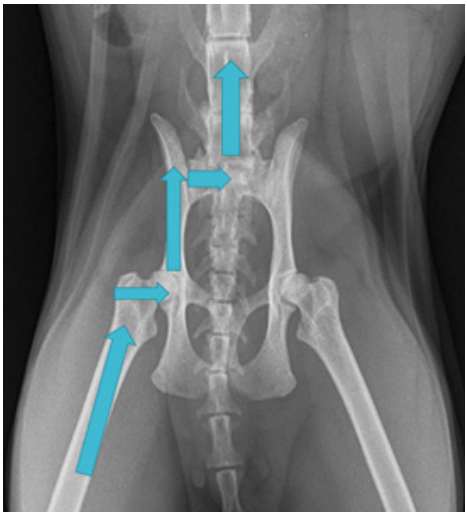
Anatomy of the pelvis

When assessing the radiographs, it is useful to have a good understanding of the pelvic anatomy.

The pelvis is made up of the ilium, ischium, pubis, sacrum and first coccygeal vertebrae. These bones essentially form a rigid box-like structure that is well covered by muscles and soft tissues. These major muscle groups provide significant inherent stability to most fractures however when displacement is present, they can make reduction and stabilisation more challenging.

When interpreting radiographs, it's important to note that the sacroiliac joint is a true joint with a small amount of synovial fluid that allows a little movement – therefore a gap (dark line) may be seen on radiographs as a normal finding (especially with more oblique views) and should not be confused with a fracture line.

The pelvis has weight-bearing and non-weight-bearing segments, the weight-bearing axis is important to bear in mind, as fractures effecting these parts will have greater clinical significance to the cat.



The weight-bearing axis

Weight is transferred through the femur into the hip joint through the femoral head and acetabulum, along the ilium across the sacroiliac joint into the sacrum.

The rigid box-like structure means that fractures or luxations commonly occur in more than one place. Displacement of one part cannot occur without damage in another area. Therefore, if one fracture is observed the clinician should have a thorough inspection of the radiographs for further fractures or luxations.

Management of pelvic fracture cases

For cases with pelvic fractures we have three options available to us; conservative management, surgical stabilisation or euthanasia.

It is thought that surgical treatment may facilitate a quicker recovery and alleviate pain associated with instability, however the long-term results have been found to be similar to conservative management.

When considering our options, we need to think of the patient in terms of:

- age – younger animals will heal more quickly

- concurrent injuries – is there a reason why stabilising the pelvis should be delayed? Can the patient be safely transferred to where surgery would be performed?

- pre-existing conditions eg renal disease, hyperthyroidism or osteoarthritis – consider all the things that might influence the decision-making process in these cases

- temperament – will this cat cope with an extended period of rest, or travel to a referral centre?

Be honest about the options, there is more than one available and as clinicians we should discuss them all with the owner rather than assume which the owner will prefer.

Try and be informative about what each option entails, the costs, prognosis and length of time to recovery. Speak to referral surgeons and get their advice if you are unsure. Don't assume all owners can afford referral or would want referral. Try and give a balanced and unbiased overview of the options.

Conservative management

Generally speaking, cases likely to do well with a conservative approach are those that have:

- minimal displacement

- an intact acetabulum

- intact weight-bearing axis/non-weight-bearing segments affected

- minimal narrowing of the pelvic canal (less than 50%)

- or stable fractures

Additionally, cases where more than seven to 10 days have elapsed since the fracture occurred would need to be considered for conservative management as it becomes almost impossible to reduce these fractures without causing significant damage to soft tissues, including nerves and vessels around the fracture site, due to the contracture of the major muscle groups previously mentioned.

Surgical repair

Cases where a surgical repair is likely to be beneficial in terms of speed of recovery, optimal return to function or management of pain are:

- acetabular fractures (especially those with cranial 2/3 affected)

- greater than 50% displacement of the sacroiliac joint

- both sides of the pelvis have weight bearing axis affected

- marked instability

- marked narrowing in pelvic canal (>50%)

- severe pain

- polytrauma

- signs of sciatic nerve injury (neuropraxia)

It is often suggested that if signs of nerve injury are present then stabilisation with surgery is the better option. However, in one study neuropraxia was a complication seen following surgery that wasn't observed with the cases treated conservatively. The fact that cases weren't randomly assigned means it is hard to draw concrete conclusions from this but is still worth bearing in mind particularly when advising owners of likely complications[1].

Referral not an option?

There might be cases where you feel referral is the best option, but this isn't going to be feasible due to cost, transport issues, animal temperament or other owner factors.

Euthanasia may need to be considered if there are concerns the animal has uncontrollable pain, comorbidities or will have a poor quality of life. We need to bear in mind that euthanasia is not a failure of care and in some circumstances the kindest option.

Many cases with more complex fractures will still do well with conservative management and provided you are open and honest with the owner and set expectations it is reasonable to try this option. When considering conservative treatment for more complex injuries remember to assess the cat's current level of function rather than just looking at the radiographs – can they weight bear and get around in some way? Do they appear to be coping reasonably well and their pain can be adequately controlled? Can they urinate and defaecate without pain?

For cases with fractures involving the acetabulum you could consider combining conservative management and a cheaper salvage surgical procedure that can be done in-house like a femoral head and neck excision.

What is conservative management?

Cats will need to initially be cage rested, with well-padded bedding and enough room to have access to a litter tray and food/water bowls.

Initially we may need to give assistance with urination and defaecation, changing bedding regularly if the animal has soiled where they lie.

Generally, cats can move around relatively quickly and most will stand within a few days.

Movements should be restricted for four to six weeks with a gradual increase in the space available, for example moving them to a small downstairs toilet or utility room.

We need to be mindful that cats are prey animals so good at masking signs of pain.

Therefore, to assess pain we need to look for subtle changes like ear position (wide and flattened to head) and changes to muzzle shape, in addition to other behaviours the cat may be displaying and ensure that adequate analgesia is being provided during the recovery period.

Complications

Possible complications that may be seen following pelvic fractures in cases treated both conservatively and surgically are:

- ongoing lameness
- neurological deficits or neuropathies
- constipation or obstipation
- ongoing pain
- arthritis

Prognosis

It is worth bearing in mind that although surgery is often deemed to be the 'gold standard' option many studies have found comparable outcomes with surgical and conservative management.

Many of the papers written come from referral centres who do have a surgical bias however, retrospective studies of dog and cat cases in 2009 and 2012 showed good to excellent outcome for all and 95% of patients regardless of treatment method.[2,3]

Another looked at cases with pelvic narrowing less than 50% and found that very few developed constipation and those who had conservative management were no more likely to develop it than those who were treated surgically. This study also concluded that cases treated both surgically and conservatively had very good outcomes with 86% showing no long-term impairment in mobility and 84% having no detectable lameness.[1]

Summary

Conservative management is a good option for the treatment of many cats with pelvic fractures bearing in mind the following:

- examine the entire cat not just the bones
- open and honest discussions with owner about all the options
- ask for advice if unsure
- be mindful of pain and provide adequate analgesia
- good outcome for most patients whether treated surgically or conservatively C

References:

1. Management and long-term outcome of pelvic fractures: a retrospective study of 43 cats. Richard L Meeson and Ales T Geddes. *Journal of Feline Medicine and Surgery 2017*, Vol 19 (1) 36-41

2. Pelvic Fractures in Small Animals: Retrospective Study of the Cases Assisted in the Veterinary Hospital of the Federal University of Lavras. From January 2001 to July 2008. L.R. Mesquita; LAL Muzzi; WG Silva; RAL Muzzi; AT Giannico. World Small Animal Veterinary Association World Congress Proceedings, 2009

3. Conservative management of pelvic fractures in dogs and cats in Algiers: Incidence and long-term clinical outcomes. Bouabdallah R, Meghiref FZ, Azzag N, Benmohand C, Zenad W, Rebouh M. *Vet World*. 2020 Nov;13(11):2416-2421.

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BVetMed MRCVS

Naomi graduated from the RVC in 2005 and spent several years in first opinion practice followed by 10 years working with PDSA. She joined Cats Protection in 2021 as Field Veterinary Officer for Midlands and Wales.

Naomi's main interests are charity veterinary work and delivering a high standard of care through a pragmatic approach.

news

Keep up-to-date with Cats Protection

Paws to Listen

Paws to Listen is Cats Protection's free and confidential grief support service.

Our volunteer listeners provide emotional support and practical information to anyone grieving the loss of their cat. Our dedicated volunteers support those who may be bereaved; face difficult decisions regarding their cat's quality of life; rehoming; or are anxiously waiting for a missing cat.

Our Paws to Listen volunteers are formally trained in providing emotional support and understand that every loss is deeply personal and meaningful. They also understand that grief can often trigger other feelings or memories of previous loss, and will signpost to additional support as appropriate. They can give practical information on after-death options and ways to celebrate the life of a beloved cat.

A telephone support service is available on 0800 024 94 94 (Monday-Friday 9-5, excluding bank holidays) and if lines are busy callers may request a callback from us.

Alternatively, we have an email support service at **pawstolisten@cats.org.uk** and a social media support group coming soon.

We also offer further grief support resources at **www.cats.org.uk/grief**

To promote this service, we have produced a range of resources, which can be ordered free of charge. To order these materials, please visit our website at this address or email us at warehouse@cats.org.uk

Paws to listen
grief support service

Need to talk to someone?

Cats Protection understands just how much your cat means to you and what you may be going through if your pet is missing, had to be rehomed, nearing the end of their life or recently passed away. We have a large range of resources, information and support to help you at this difficult time, including ways to help celebrate the life of your cat.

If you're experiencing the loss of your cat, you can talk to us. Our volunteer listeners can provide emotional support and practical information.

Please get in touch, we're here and ready to listen:

T: 0800 024 9494 (9am-5pm, Mon-Fri) free & confidential

E: pawstolisten@cats.org.uk

W: www.cats.org.uk/grief

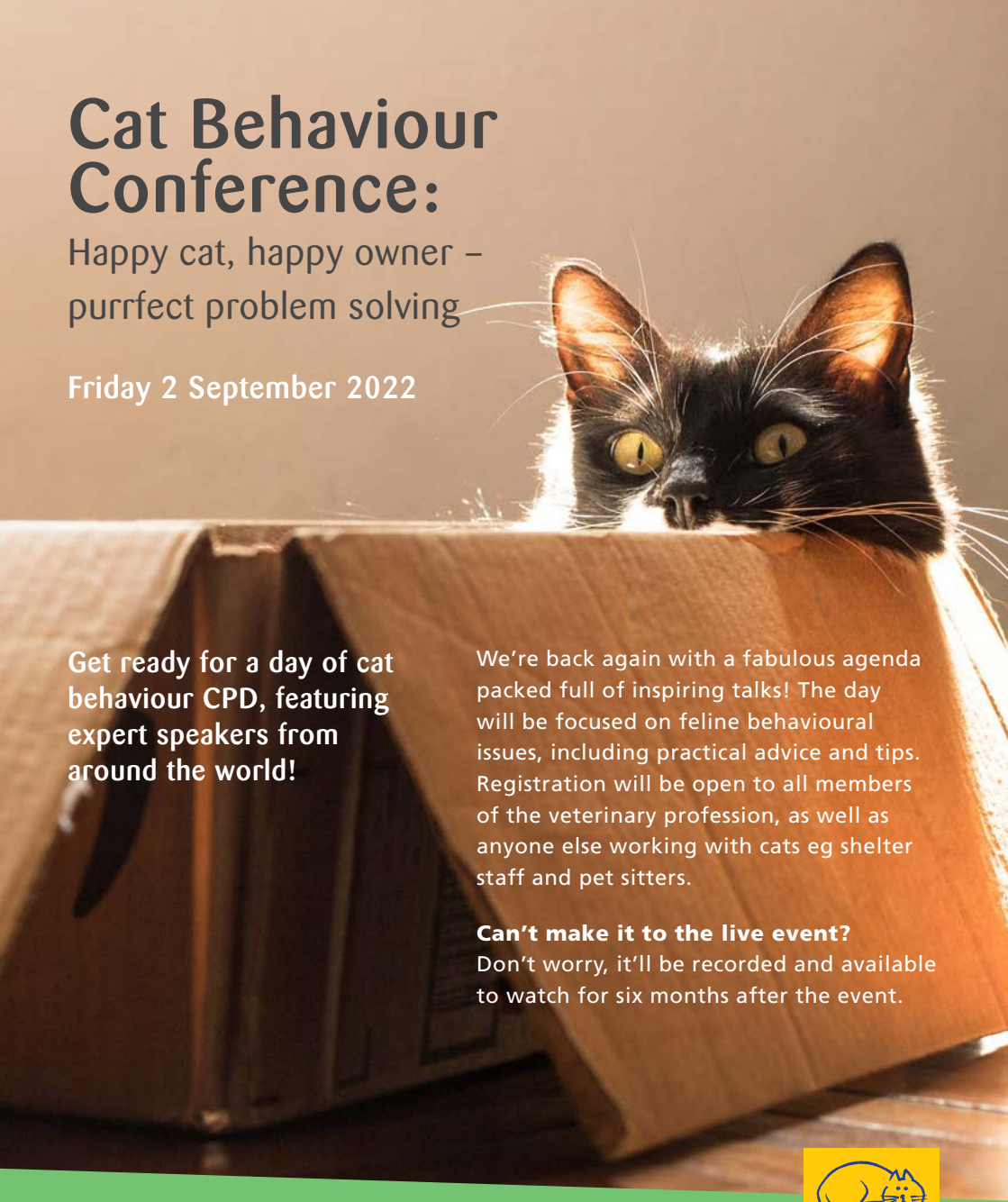
Paws to listen
grief support service

CATS PROTECTION

Cat Behaviour Conference:

Happy cat, happy owner – purrfect problem solving

Friday 2 September 2022



Get ready for a day of cat behaviour CPD, featuring expert speakers from around the world!

We're back again with a fabulous agenda packed full of inspiring talks! The day will be focused on feline behavioural issues, including practical advice and tips. Registration will be open to all members of the veterinary profession, as well as anyone else working with cats eg shelter staff and pet sitters.

Can't make it to the live event?
Don't worry, it'll be recorded and available to watch for six months after the event.

The conference will take place virtually. Please keep an eye on the '**For vets and nurses**' section of our website for further details.

www.cats.org.uk/cat-behaviour-conference

Free CPD with Cats Protection's CPD Academy hub!

If you enjoyed our article '*Treating pelvic fractures in first opinion practice – a pragmatic guide*', then why not take a look at the recorded webinar, hosted by the article's author Naomi Williams MRCVS? The webinar is available on Cats Protection's free CPD Academy online hub, which can be found on our main website **here**.

Our free online CPD courses are aimed at those working on a budget or with limited resources and require no login to access them. The hub is currently being expanded to contain webinars, videos, articles and podcasts that will offer practical solutions for your feline patients, particularly when referral isn't an option.

Please continue to monitor our CPD Academy, as new material will be added soon!

Download to read here

Read our **new Behaviour Guide**

This guide has been produced for those working with rescue cats to promote a better understanding of cat behaviour.

Write for Cats Protection's *Clinic* magazine!

We are on the lookout for contributors to provide articles or case reports for future editions of *Clinic* magazine.

We are looking for cat-based articles or case reports of no more than 1,000-1,500 words that would be helpful for the general practitioner. We are particularly interested in articles looking at treating cats on a limited budget or in a shelter environment using evidence-based medicine and surgery. We feature articles on feline medicine, surgery, welfare and behaviour and pay £250 for each article published.

If you would like further information, wish to submit an article, or would like to sign up to receive future copies of *Clinic* free of charge, please do not hesitate to get in touch via **CPClinic@cats.org.uk**

We'd love to hear from you!

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Experience the incredible sights and sounds of Indonesia on our brand-new international adventure!

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Join us next year for this once-in-a-lifetime challenge! To find out more or reserve a place:

- visit **www.cats.org.uk/sumatra23**
- email **events@cats.org.uk**
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This trip is being organised for Cats Protection (Reg Charity 203644 (England and Wales) and SC037711 (Scotland)) by Different Travel.
Cats Protection is acting is an agent for Different Travel.

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containing this year's Cats and Their Stats (CATS) Report UK 2022

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CATS PROTECTION

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The feline magazine from Cats Protection for veterinary professionals