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# Canine distress during hospitalisation: how can we help them?

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**ABSTRACT:** It is recognised that some dogs can suffer from stress when visiting veterinary practices. Manifestations start subtly, having the potential to progress if ignored, and whilst this can cause stress not just to the animal but also to the owner and the veterinary team, other deleterious effects, including delayed recovery, may arise. Therefore, despite working in busy practices where it may be challenging to find the time to observe the dog, and think how he/she might be feeling and what we could do to help, it is important to prevent, alleviate or stop distress as early as possible.

**Keywords:** distress; signs; hospitalisation dogs; measures

There are many definitions in the literature to describe the stress dogs can suffer when visiting veterinary practices. Hekman et al. (2014) believes stress can have different forms: physiologic stress, non – physiologic or psychogenic stress and distress. Physiologic stress can be experienced when exposed to physical systemic or environmental challenges that perturb the body's homeostasis, for example, systemic illness, trauma and surgery. Psychogenic stress is experienced when an animal is exposed to psychological or social challenges that result in disruption of their psychological well-being. Examples of negative psychogenic stress in the veterinary environment include separation from owners and exposure to a new environment. Both physiologic and psychogenic stress are present in everyday life, and a healthy body and mind should be able to cope and maintain a normal function. When the body cannot cope with overwhelming physiologic or psychogenic stress, distress can develop and have deleterious effects.

## Causes

The process of perceiving an event as stressful and developing the associated responses is different from dog to dog and will reflect not only their genetic influence and innate response to specific stimuli but also their own experiences. Those experiences are developed since they are puppies and will determine whether noises, objects, people or locations are “normal,” this being the

reason why failure to present puppies with certain stimuli may mean they are perceived as threatening when they are older, therefore socialisation and habituation during the first few months of a dogs' life are crucial (Bowen & Heath, 2005; Mills et al., 2013).

Veterinary environments can be unpredictable and unpleasant not allowing the animal to control and avoid situations they are not comfortable with (Lloyd, 2017). The “constant bombardment” by aural, visual and olfactory stimuli can lead animals to a state of distress, meaning that being in unknown surroundings with unknown smells, sounds, people and other animals, that may have secreted alarm hormones or be showing signs of stress themselves, are all contributing to distress (Hargrave, 2015; Heath, 2012; Mills et al., 2013). Another factor to consider is the anxiety related to separation from the owner, being restrained and having procedures done, all increase the stress level (Casey, 2010; Mills et al., 2013). Pain, either related to the cause of hospitalisation, or for examination and treatment, and illness can also develop a stress response and will influence the way the dog behaves (Hargrave, 2015; Pageat, 2007). We should also recognise that changes in daily activities or routines, where they cannot predict feeding and walking/toileting times, can lead to some degree of anxiety or frustration (Casey, 2010). Previous experiences will be remembered and negative ones will lead to a quicker stress response (Casey, 2010; Lloyd, 2017; Mills et al., 2013).



**Figure 1.** Example of a response of uncertainty, in which freezing, dilated pupils and alert, tense, not resting could be seen.

In addition we should consider that when a dog arrives at the practice he/she is not in a neutral state, their emotions or state of stress will be the result of the accumulated stressful episodes that he is been through during the day. For example, the stress of a late meal, the stress of the car journey, the stress of seeing the owner worried. This happens because the neurochemicals associated with stress are quickly released when the dog faces a stressor but they are very slowly broken down, which can mean hours or even days trying to process a stressful event, making their capacity to cope with every additional stressor more and more limited (Hargrave, 2015; Mills et al., 2013).

It is important to observe and “read” dogs as most of the times they will show signs that allow us to recognise that they feel uncomfortable or distressed. Very subtle signs will show in the beginning and lack of attention to these will, itself, contribute the stress level to rise and may lead to the presentation of behaviours from the “ladder of aggression.” On the other hand if we can transmit dogs the correct associations and reduce their stress, we may in turn make the visits or stays at the practice a more positive, stress-free experience (Hargrave, 2015; Heath, 2012; Mills et al., 2013).

## Signs

Distress effects can vary from elevation of physiologic parameters (heart rate, respiratory rate, body temperature and blood pressure) to more generalised systemic effects, like gastrointestinal disease (vomiting, diarrhoea, weight loss and inappetence) and immune system impairment, which can

lead to even more stress. Along with the above distress can also be shown through behaviours such as excessive salivation, panting, shaking, pacing, jumping, digging, hiding, low tail carriage, urination/defaecation, barking/whining, scratching and even aggressive behaviours (Pageat, 2007; Stilwell, 2019; Vine, 2019).

Casey (2010) divided these behaviours into: responses of uncertainty or “anxiety” and established responses to perceived threats or “fear responses.” Responses of uncertainty or “anxiety” include behaviours such as attempting different avoidance responses (e.g. switching between pulling away, vocalising and growling), freezing, signs of high levels of arousal and vigilance (e.g. alert, tense, noticing changes, not resting) and signs of activated peripheral stress response (e.g. panting, elevated heart rate, dilated pupils) (Figure 1). In established responses to perceived threats or “fear responses” signs like withdrawal (moving away from threat, e.g. hiding or pulling back to kennel), aggression (e.g. barking, growling, snapping, lunging), soliciting social attention (e.g. howling, whining) and appeasement behaviour (behavioural signs to diffuse social conflict, e.g. ears back, eyes averted, twisted muzzle) can be seen (Figure 2).

Dogs tend to focus their attention on the object of fear and can use one of the “four F’s” to reduce this sensation: fight, flight, freeze or fiddle about (self-appeasement behaviours). Depending on the situation, breed and species they will choose one (Bowen & Heath, 2005).

Separation related problems are more often seen in rescue dogs but all dogs can be

distressed by it when over-attached, usually, to one individual person. Signs start as this person gets away and can be seen as tremble, pace, pant and other signs of increasing anxiety. While this person is away the signs tend to persist and can increase, ceasing when the animal is tired but always remaining in a state of anxiety. Separation related vocalisation tends to show in a typical pattern as the dog will vocalise for a short period of time and listen for a reply, sometimes trying different barks and noises, giving up after a few minutes if there is no answer, while distress vocalisation is different and usually presents as extreme and disorganised over long periods of time without break. Separation anxiety problems need to be treated with the owner’s cooperation and usually start at home (Bowen & Heath, 2005).

Attention – seeking behaviours reveal lack in training and control, and can be shown as barking, stealing, incorrect elimination, pica, biting, destructiveness or any behaviour learnt as getting attention from people. Most of the time we reinforce these behaviours without realising, as any eye contact, touching or talking to the dog will mean that he/she has succeeded (Bowen & Heath, 2005).

It is also important to mention that some behaviours shown by dogs when distressed can be interpreted by veterinary professionals as a behaviour problem, when this can in fact be a coping strategy. Failure to understand the dog’s signs can lead to frustration and to raise the stress level (Hargrave, 2015; Heath, 2012). For example, dog growls can be interpreted by veterinary professionals as inappropriate behaviour but we should ask ourselves why is the dog feeling threatened and what can we do to stop this (Heath, 2012).

An analysis of how the dog behaves during hospitalisation on its own to conclude that he/she is stressed can be misleading, so we can objectively measure parameters associated with stress responses through cortisol measurement (plasma, salivary or urinary), salivary immunoglobulin (sIgA), neutrophil:lymphocyte (N:L) ratio, heart rate variability and other additional physiologic measures (Hekman et al., 2014). Overall (2013) suggested the use of the “assessment scale for stress” based on the dog’s presentation and behaviour (Lloyd, 2017; Turcanu & Papuc, 2016).

## How can we improve their experience in hospital?

Stilwell (2019) recommends that we should care for our hospitalised patients using the “HAPPY mnemonic”: H (health) – how is



**Figure 2.** Example of an established response to perceived threats, in which the dog is soliciting social attention by howling.

the patient feeling?, A (anticipation) – allow the patient to process what is happening and do not rush through procedures, P (perception) – be aware of how the patient perceives its surroundings, and minimise potentially frightening actions, P (peace) – provide opportunities for the patient to rest throughout its stay and Y (you) – your actions can significantly affect the patient’s hospitalisation experience.

There are several measures described in the literature we can put in place to try to prevent, alleviate or eliminate distress in our hospitalised dogs and these can include the following:

As the dog enters the practice - Try to limit the amount of people and animals they have to encounter and promote distance while in the waiting area. Also do not neglect the importance of loud noises or talking (Mills et al., 2013).

In the consult room – Let the animal investigate the space if interested in doing so, allowing them to initiate contact. In the occasion this is not likely to happen, we should do it indirectly, approaching the dog by his/her side, not looking in their eyes or leaning over them. While doing this, it is crucial to keep in mind that a dog should not be forced to face a fear when distressed (Bowen & Heath, 2005; Lloyd, 2017; Mills et al., 2013; Stilwell, 2019).

Kennels/bedding - Kennels are generally constructed for efficiency and cleanliness rather than animal’s comfort but the use of mats, towels and padded bedding can help reduce reflectivity and noise reverberation and create some comfort. Also as anxious, unsocialised dogs can feel threatened if face to face with dogs in an opposite kennel, covering the kennel with a towel can help (Vine, 2019). Floors must not be slippery (Mills et al., 2013).

Feeding - Patient’s food intake and stress are connected, thus it is important to try to provide a stress-free environment where feeding patterns can be as close to normal as possible. RER should be calculated for each individual patient, and weight should be taken and recorded every day, to ensure any variations in weight are easily noticed. Some ways to encourage eating may include: feeding strong-smelling foods, changing from dry to wet food and grooming/stroking while tempting them to eat. The use of puzzle feeders and feeding toys can also have a positive effect on boredom and distress (Lloyd, 2017; Vine, 2019).

Interaction - While hospitalised dogs should be given the opportunity to have moments of positive human interaction and it has been proven that providing short moments of attention throughout the day is more efficient than fewer long periods. This can be achieved by talking to them, giving them “fuss” or petting them and brushing/grooming (Casey, 2010, 2015; Pageat, 2007; Stilwell, 2019; Vine, 2019).

Sleep - This is a crucial factor for recovery, growth and homeostasis but can easily be disrupted in the hospital environment. Dogs usually need ten hours of sleep, mainly at night and we should ensure conditions for this to happen are provided, through promoting quiet times in the ward, grouping medications during night, turning lights down low and avoiding unnecessary noise (Vine, 2019).

Noise control - Noises from ventilators, monitors and other dogs are believed to have a negative impact on the dog’s experience while in the practice. Turning down warning sounds on fluid pumps and syringe drivers, placing noisy inpatients away from more sensitive or nervous ones and playing classical music are all easy steps we can take to avoid distress (Casey, 2010; Lloyd, 2017; Stilwell, 2019; Vine, 2019).

Walks/exercise - Unless not recommended by the veterinary professional in charge, all dogs should be given the opportunity to spend some time outside and stimulate their senses (Vine, 2019). When on restricted exercise some signs of frustration may be seen and interaction alongside exercises that engage the mind can be the solution for this (Casey, 2010).

Toys - In the hospital environment this can be used to fight boredom and keep animals busy for some time. Both chew toys or a toy with kibble or treats inside can be used (Stilwell, 2019). Objects with familiar smells can also be of benefit (Mills et al., 2013).

**Pheromone therapy** - The pheromone used for dogs is dog-appeasing pheromone (DAP) and its use to reduce stress during periods of hospitalisation is controversial within veterinary literature. Pageat (2007) believed: anticipation of stress by treating the dog with this pheromone during the day before the hospitalisation was very effective to increase the efficacy. However Casey (2010) said: its use is more likely to influence the perception of animals first entering a new context, rather than altering an existing fear response. Despite all the controversy, DAP is not known to have contra-indications and adverse reactions are rare, so using diffusers in practice is very unlikely to cause harm to any of the inpatients and may provide some positive effects (Crowell-Davies & Landsberg, 2010; Vine, 2019).

**Aromatherapy** - Dogs have a very strong sense of smell, therefore use of aromatherapy to stimulate relaxation or inhibit unwanted behaviours has been investigated. A study by Graham et al. (2005) concluded that using lavender or chamomile essential oils in bedding can help dogs relax, while rosemary and peppermint oils incite standing, moving or vocalisation (Lloyd, 2017). The use of lavender was also studied by Wells (2006) and showed a reduction in movement and vocalisation in dogs exposed to the ambient odour. It is also thought that this could work via distraction and, therefore, other strong odours can have similar effects (Lindley, 2010). In conclusion, although the use seems to be increasing, more studies are needed to assess the benefits of aromatherapy in dogs (Stilwell, 2019). Nevertheless, the use of essential oils has been reported to have toxic effects thus they should be used cautiously (Lloyd, 2017).

**Cleaning** - Regular cleaning and airing out spaces to eliminate any smells or messages left by other animals can also prevent stress escalation (Lloyd, 2017; Mills et al., 2013).

**“Fun”/“happy” visits** - Can be encouraged both in puppies and later in life, this will allow dogs to react to people and smells in a more relaxed environment being rewarded when appropriate in order to create positive experiences at the practice (Mills et al., 2013).

**Client education** - On how to recognise when their dogs may feel threatened and how to behave. Muzzle training at home should also be encouraged as when in pain even the friendliest dog can bite (Mills et al., 2013).

**Medications** - According to Crowell-Davies and Landsberg (2010) there are

several anxiolytic drugs that can be used in dogs, those can include: Fluoxetine, Fluvoxamine, Paroxetine, Amitriptyline, Clomipramine, Imipramine, Flurazepam, Lorazepam, Oxazepam, Alprazolam, Clonazepam, Clorazepate, Buspirone and Trazadone. Bowen and Heath (2005) add: Diazepam, Temazepam, Doxepin, Sertraline, Selegiline, Propranolol, Pindolol, Atenolol, Chlorphenamine and Trimeprazine to the list of drugs to be used in or to prevent states of stress and anxiety. All the benefits, contra-indications and adverse effects should be considered when choosing which drug to use (Casey, 2010; Crowell-Davies & Landsberg, 2010). Acepromazine and Medetomidine can help reduce signs of distress in the recovering patient, however in hospitalised dogs continuous use of these drugs can make improvement hard to notice (Vine, 2019). Use of Mianserin, can be helpful by stimulating appetite (Pageat, 2007). These medications require prescriptions from a veterinary surgeon, but is our duty, as veterinary nurses, to recognise situations when their use may be beneficial (Vine, 2019).

**Supplements** - The use of alpha-Casozepine is believed to have positive effects in controlling anxiety in dogs, however more studies on this are needed (Buckley, 2017; Crowell-Davies & Landsberg, 2010).

Other simple actions such as giving time to anxious animals to settle before performing the exams or procedures and doing it in a calm way, being aware of our body language, making our routine as predictable as possible, so that they learn what to expect, and having the same person(s) looking after them can also prove to be of some value to help the distressed patient (Casey, 2010, 2015; Lloyd, 2017; Mills et al., 2013; Stilwell, 2019). Also we must not forget that dogs are skilled at reading and interpreting human facial expressions, tone of voice and posture, which is why it is important to keep the kennel area as calm and relaxed as possible (Casey, 2010, 2015; Lloyd, 2017).

Acknowledging when frustration responses, such as whining and scratching the kennel door develop is also of great importance as this should not be given attention. Shouting at noisy dogs may initially give false sense of resolution but it will not work in the long term. Instead this can lead to dogs learning that these behaviours get some interaction, which may cause repeat or worsening, as they expect the same result. Thus we should ensure the dog realises that these behaviours do not result in attention and other behaviours such as sitting quietly get positive interaction. It is also good practice to speak with the hospitalised dogs when

passing by the kennel door and they are quiet, as this will give them some social contact and reduce the likelihood of them seeking attention (Casey, 2010, 2015). To avoid attention-seeking behaviours from repeating we can also turn our head away sharply saying “no” to show the dog his actions are being ignored. Any form of physical punishment should never be used as it will only increase anxiety and may lead to more unwanted attention-seeking behaviours, while verbal “punishment” should be sharp enough to make them stop the unwanted behaviour but not to promote fear (Bowen & Heath, 2005).

Veterinary surgeons and nurses play a key role in educating owners about proper socialisation while they are still puppies as this can prevent many problems in the future. Puppy parties and encourage owners to mimic medical exam gestures at home, like opening mouth, touching ears and eyes, using a rewarding system correctly to build positive associations are some examples (Casey, 2010, 2015; Mills et al., 2013; Turcanu & Papuc, 2016). Although, it should also be told that when rewards, usually food treats, are not given in the right timing, association of food with negative experiences or reinforcement of unwanted behaviours can occur (Heath, 2012).

Behavioural information should be gathered in the clinical record with each visit to the practice, the reason being that dogs tend to use strategies that were successful in the past when facing similar stressors, which may mean that if learnt that when showing aggressive behaviour the threat disappears (veterinary professional moves away) this behaviour may be seen in every visit to the practice. When the first problematic behaviour shows, measures should be taken and this may include desensitisation or counterconditioning to the practice and procedures (Casey, 2010; Mills et al., 2013).

Bowen and Heath (2005) claim: desensitisation relies on a large number of neutral presentations of the same stimulus to cease the production of a significant emotional effect and so can be used to reduce fearful and phobic reactions to stimuli. While counterconditioning is used to create a new and positive emotional response with the desensitised stimulus. After being counterconditioned the stimulus is paired with events that produce positive emotional responses that conflict with fear, may include food or play, with the aim of reducing the chance of resensitisation. It is also recognised that fears and phobias are best treated when broken down into several individual components. Ways of reducing the impact of the stimulus may

include: reducing sound intensity, production of smaller versions of the stimulus, presenting the stimulus in a different way or in an unusual context, placing the object of fear further away or partially obscuring vision of the object of fear using a fence or screen.

## Conclusion

Distress in dogs can have multiple causes and present in several forms that we should recognise and aim to prevent, alleviate or treat in the hospital environment. When this is not accomplished deleterious effects, such as elevation of physiological parameters, generalised systemic effects, immune system impairment and delayed recovery, can develop. Relaxation can be promoted using different strategies, like bedding, feeding, walks, noise control, offering appropriate time for interaction and sleeping, keeping routines, promoting “happy” visits, educating clients or by using pheromones, aromatherapy, drugs and supplements. Some approaches still need more research for its efficacy to be proven, while others are simple gestures we can implement on our daily routine but overall we should keep in mind the welfare of the hospitalised patient.

## Disclosure statement

No potential conflict of interest was reported by the author.

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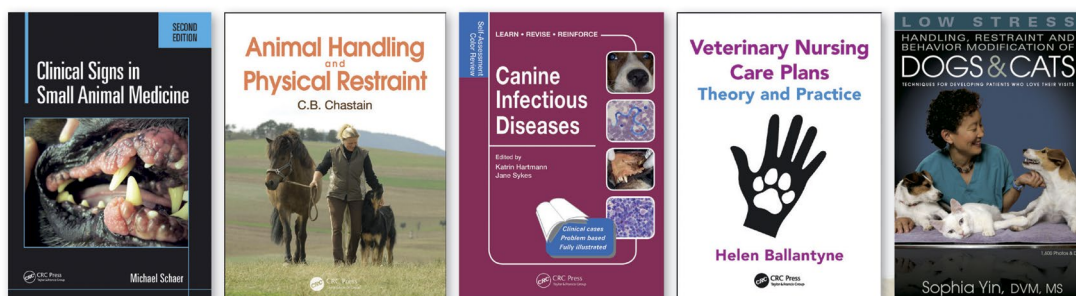
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