



**Harper Adams  
University**

**THE EFFICACY OF PET REMEDY IN  
SUPPORTING FELINE RESPONSE TO  
VETERINARY CHECK-UPS**

Natalie Harris BSc (Hons), RVN

An Honours Research Project submitted in partial fulfilment  
of the requirements for the  
BSc (Honours) Degree in  
Veterinary Nursing and Practice Management

May 2019

## **About the author**

Natalie Harris graduated from Harper Adams University in September 2019 with a BSc (Hons) degree in Veterinary Nursing and Practice Management. During her degree she spent a year at Hillmans Vets completing her training and then returned as a RVN after qualifying.

## **Abstract**

### **Background to Research**

Cats can be affected by unfamiliar environments such as a veterinary practice, causing the cat to become stressed. This can affect the physiological parameters and behaviours (Pereira *et al.*, 2016). Stressed cats can be difficult to handle and treat, and this can impact on veterinary staff. Pet Remedy is a blend of calming essential oils which naturally tackles stress and anxiety (Pet Remedy, 2018). The objective of this study was to investigate the effect of Pet Remedy on feline behaviour during routine veterinary check-ups.

### **Methodology**

This study involved 22 cats that were booked in for routine appointments in a veterinary practice. The subjects were randomly allocated a wipe by veterinary staff, to be used on the consulting table during the appointment. The wipes were either Pet Remedy or placebo. The trial was double blinded; so veterinary staff and clients were not aware which wipe the patient was allocated. The wipe was wiped over the table before removing the cat from the carrier. The veterinary surgeons carried out the appointments as normal. The veterinary surgeons completed a questionnaire to record their opinions on the behaviour of the patients. The questionnaires contained a behaviour table that analysed the behaviour for six components - heart auscultation, ear check, eye check, mouth check, temperature check, and booster injection. The behaviours were adapted from Kessler and Turner (1997) and Rodan *et al.* (2011). Each behaviour option was defined in the questionnaire.

### **Conclusion**

The veterinary professionals' opinions on the feline's behaviour, indicates a positive response from the Pet Remedy wipe. For all aspects of the appointment, a higher frequency of patients who received the Pet Remedy wipe were relaxed.

When the data was collated, the bar charts indicated a positive response. The completed questionnaires indicated a higher frequency of cats were relaxed with the Pet Remedy wipe. All cats that received the Pet Remedy wipe were deemed to be in the relaxed or alert/weakly tense categories. No cat using the Pet Remedy wipe was deemed to be in the highly tense & anxious or very fearful categories. Therefore, this does suggest Pet Remedy may help calm feline patients and be a good support mechanism for cats when stressed during clinic visits. Further studies are required into the effect of Pet Remedy on feline behaviour in veterinary practice using larger sample sizes and especially with patients that are known to be stressed and anxious when visiting the veterinary practice.

## **Introduction**

The majority of felines visit a veterinary practice at some point in their lives. This can act as a stressor as it is an unfamiliar environment (Pereira *et al.*, 2016). Cats will react to this environment in different ways. There are many behavioural and stress scores available to categorise feline behaviour. A highly stressed feline patient may be difficult to handle and treat, potentially causing injuries to veterinary staff. Therefore, if the stress levels are reduced and the patient is calm the team can handle and treat the patient effectively (Cannon and Rodan, 2016a).

Pet Remedy is a blend of calming essential oils, including valerian and vetiver, which naturally tackles stress and anxiety. Pet Remedy mimics the animal's natural calming mechanisms to help calm without sedating. Pet Remedy is suitable for all mammals, birds and reptiles. Pet Remedy is already used by many veterinary practices, rescue centres and zoos around the world. Products available include plug diffuser, calming spray, wipe and battery operated atomiser (Pet Remedy, 2018).

Pet Remedy have already conducted clinical trials and continue to undertake research to deliver a high quality product range. This study aims to investigate the efficacy of Pet Remedy in supporting cats during the stress of a routine clinic visit.

## **Discussion on stress**

Stress is an emotional and physiological response to certain situations and stimuli (Mills, 2016). A stressor is an underlying cause that triggers distress. Stressors are experiences that can be perceived as negative. Stress has been identified as a significant factor of most common feline behavioural problems, and also some common diseases (International Cat Care, 2017).

Anxiety and fear can cause distress in cats and occurs when the cat is threatened. Anxiety can be defined as a reaction to anticipated danger or a threat (Lloyd, 2017). Fear is an emotional response due to the presence of a stimulus. A phobia is an abnormal fear response that occurs without the presence of a threat (Landsberg *et al.*, 2013).

Agoraphobic cats react to sounds, people, or other animals, a common stimulus is a visit to the vet. There are many causes of feline fears, anxiety, and phobias which include lack of socialisation, genetic influence, previous traumatic incident, anticipation of a stressful experience, old age, and owners reinforcement of fear.

Body posture gives the first indication of the intention of the cat (Rodan, 2010). Cats also use their ears, eyes and whiskers to communicate. However it is important to read facial signals alongside body language. An anxious or fearful cat will appear tense in a crouched body position. The pupils will be dilated, and the head and neck will be pulled in close. Ears will be flattened, and the tail will be tucked under the body. The cat will begin to move away from the stressor, and may try to hide. The cat will remain still and freeze (Bowen and Heath, 2005). If a cat cannot retreat from the perceived threat, they may start exhibiting defensive behaviours such as salivating, licking nose, vocalising, shaking, and rapid breathing. The cat may attempt to bite or scratch the stressor if freezing or hiding is not an option (Carney and Gourkow, 2016).

Stress can have an impact on physiological parameters leading to tachycardia, tachypnoea, hyperthermia, dilated pupils, stress related colitis, and raised blood pressure. It can have an impact on other physiological responses, but in this study the parameters assessed during a booster appointment include heart rate, respiratory rate and rectal temperature (Sparkes *et al.*, 2016; Quimby *et al.*, 2011).

## **Stress in the Veterinary Practice**

There are many stressors that can be associated with a visit to the vet (Endersby, 2018). Before the cat even gets to the practice it has already become anxious. The cat has to be placed in a carrier and possibly in a car for the journey to the practice. Once the cat has arrived at the practice, the environment and staff can impact on the behaviour of the cat. The reception area is the cat's and owner's first experience of the practice. Therefore, the practice must be designed to minimise stress.

The consulting room contains many potential stressors. There will be unfamiliar smells from the previous patient, disinfectant sprays, and alcohol hand rubs. The consulting table itself may be a stressor as it can be cold and slippery. However a few simple changes can turn the consulting room into a more comfortable and safe place for the cat and owner.

The consulting table should have a non-slip surface such as a mat.

Treats are an important part of the consulting room and can be used to encourage positive interactions between staff and the cat.

Vets should allow the cat to come out of the carrier on its own. Many cats will naturally want to explore the new environment and will step out to assess the room (Cannon and Rodan, 2016b). Landsberg *et al* (2013) suggest that examinations are best carried out when a towel is placed over the cat to allow it to hide, or just by lifting off the top of the carrier and examining the cat in the carrier. The cat should be greeted by avoiding direct eye contact, and loud, or sudden movements. It is important to remain calm and use a soft voice. The examination itself may require a prolonged restraint which can lead to stress. Excessive restraint such as scruffing may increase stress. Some practices and staff use alternative methods to scruffing including placing a towel on the consulting table and wrapping the cat in the towel. This allows the handler to have control of the cat without creating discomfort and a need to struggle. A 'less is more' approach is advised as cats respond better to minimal restraint (Endersby, 2018).

## **Methodology**

### **Objectives**

The objective of this study is to investigate how Pet Remedy wipes affect the behaviour of feline patients during a routine veterinary appointment. It is hypothesised that Pet Remedy wipes have a positive effect on feline behaviour, in helping them become more relaxed.

### **Study Design**

This study assesses feline patients' behaviour in response to either a Pet Remedy wipe or a placebo wipe during a routine veterinary appointment. The following components of the appointment were measured: temperature check, booster injection, heart auscultation,

mouth check, ear check, and eye check. The veterinary professional was asked to assess the cat's behaviour using a questionnaire. Questionnaires were used because it allows the collection of a large amount of data. Questionnaires can be more cost effective and quicker to analyse (Adams and Cox, 2008). However, questionnaires can miss out important information if the questionnaire design does not allow people to expand on their views. Focus groups or interviews allow for more in depth responses. These methods were not used because they are time consuming and often result in smaller sample sizes (Adams and Cox, 2008). It was decided that questionnaires were the most suitable option for this study. The results are presented in simple box graphs.

## **Experimental Protocol**

The subjects were feline patients visiting the practice for a routine appointment. The treatment was either Pet Remedy wipe or placebo wiped over the consult table prior to appointment. Subjects were selected from cats coming into the practice for a routine appointment. The treatment was randomly allocated to each subject. Neither client nor veterinary surgeon knew which wipe was allocated to prevent bias. The veterinary staff chose either wipe A or B randomly per appointment. A short questionnaire was completed after the appointment by the veterinary surgeon. The questionnaire was emailed to the veterinary staff for their comments prior to starting the study, to assess if any changes were needed. No major changes were suggested. The questionnaire was modified slightly to include more 'not applicable' boxes.

Any client booking their cat in for an appointment were given the opportunity to take part in the study. Clients were asked to read and agree to the consenting paragraph in the questionnaire.

Veterinary staff were instructed to wear disposable gloves and wipe the consulting table prior to removing the cat from the carrier. Care was taken not to contaminate clothing; an apron was worn by the nurse if necessary to prevent this. The identification letter (A or B) of the wipe was recorded in the appropriate section on the questionnaire. The wipe and gloves were disposed of in the domestic waste bin. The cat was removed from the carrier and the vet began the examination. This included heart auscultation, physical examination, and temperature check. The cat could be restrained as deemed appropriate by the veterinary team to ensure the safety of the animal, client and staff. After consultation, the cat was returned to the carrier. The vet was then asked to complete the questionnaire to assess how the cat behaved during the appointment.

Following the appointment, the consulting table was wiped down with Trigene. The completed questionnaires were stored at the practice, in a lockable cupboard, until collection.

## **Analysis**

The results from each questionnaire were compared to assess if the Pet Remedy wipe did have an effect on the feline's behaviour. The results determined if Pet Remedy wipes did affect the behaviour of the feline. Having a control group (the placebo wipe) allowed an appropriate measure of the effect of Pet Remedy wipes.

The veterinary professional opinions were cross-tabulated to identify the frequency of patients that were relaxed during each component of the appointment. These were all displayed as bar charts.

## **Ethical Considerations**

Consent was gained from the Practice Manager to allow two branches to take part in the study. Informed consent was gained from the client prior to the feline being included in the study. Clients were made aware they could pull out of the study at any time up until the questionnaire was handed into veterinary staff. The veterinary staff were able to use whatever restraint they required to keep the patient and staff safe. A risk assessment already existed at the veterinary practice with regards to handling animals.

Only felines already coming into the practice for their appointment were used. This study did not cause any harm to the cats so the aim was to collect as much data as possible over three months. The project was refined to minimise stress to the animal. The wipe was wiped on to the table not the animal.

The completed questionnaires were stored in a locked cupboard at the practice, away from clients view. The questionnaires did not ask for any personal information and all responses were anonymous. Ethics approval was granted by the ethics board at Harper Adams University prior to collecting data.

## **Results**

22 felines took part in this study. From random allocation ten felines received the Pet Remedy wipe and 12 felines received the placebo wipe. Two results from the placebo category had to be excluded from the veterinary surgeons comparison due to the questionnaire being incomplete.

## **Demographic Comparison**

The demographic data for the Pet Remedy group and the placebo group is similar. The average age of the cats in the Pet Remedy group was 5 years old and the average age in the placebo group was 7 years old. The majority of owners in the Pet Remedy group had owned their cat for less than one year whereas the majority of owners in the placebo group had owned their cat for one to two years. The history of cats in both groups with the majority being owned from a kitten or taken in as a stray. The known anxiety issues in each group were similar, with the most common being noise and travelling. Both groups had the same frequency of cats that had a dislike to being touched in a particular area.

## Results from the Veterinary Questionnaire

The effect of Pet Remedy on heart auscultation

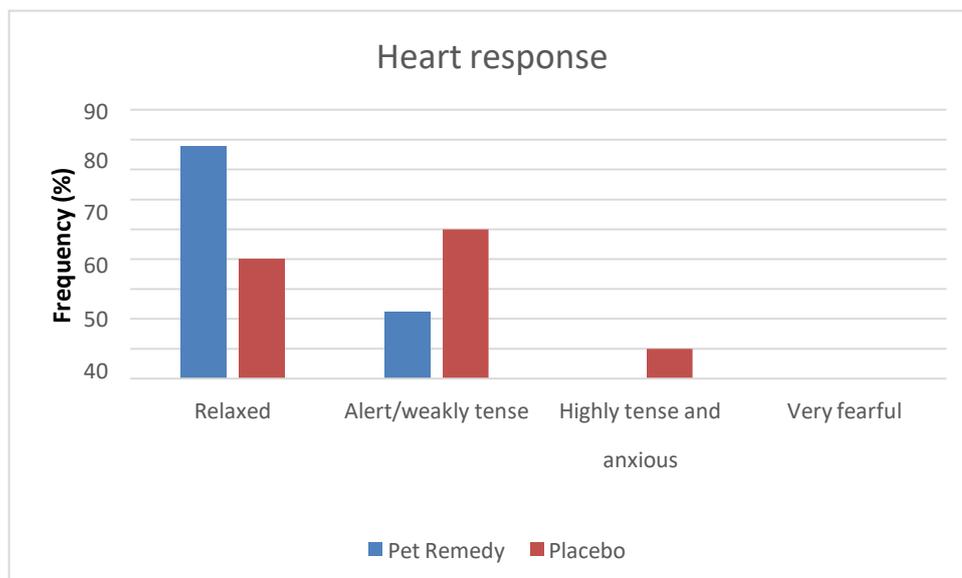


Figure 6.10 the veterinary surgeons opinion on the feline's behaviour during heart auscultation.

The veterinary professionals indicated more patients were relaxed during heart auscultation with Pet Remedy than with the placebo. The patients who received the Pet Remedy were relaxed or alert and weakly tense whereas some patients with placebo were highly tense and anxious. No cat that received Pet Remedy was observed to be in the 'Highly tense & anxious' or 'Very fearful' categories.

The effect of Pet Remedy on ear checking

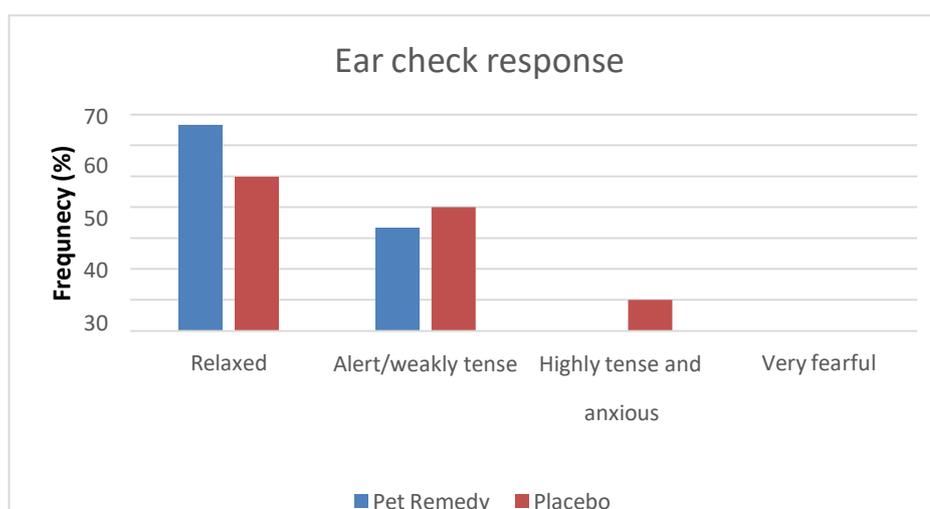


Figure 6.11 The veterinary surgeons opinion on feline's behaviour during an ear check. The veterinary professionals indicated more patients were relaxed during an ear check with Pet Remedy than with the placebo. The patients who received the Pet Remedy wipe were relaxed or alert and weakly tense whereas some patients with placebo were highly tense and anxious. No cat that received Pet Remedy was observed to be in the 'Highly tense & anxious' or 'Very fearful' categories.

#### The effect of Pet Remedy on eye checking

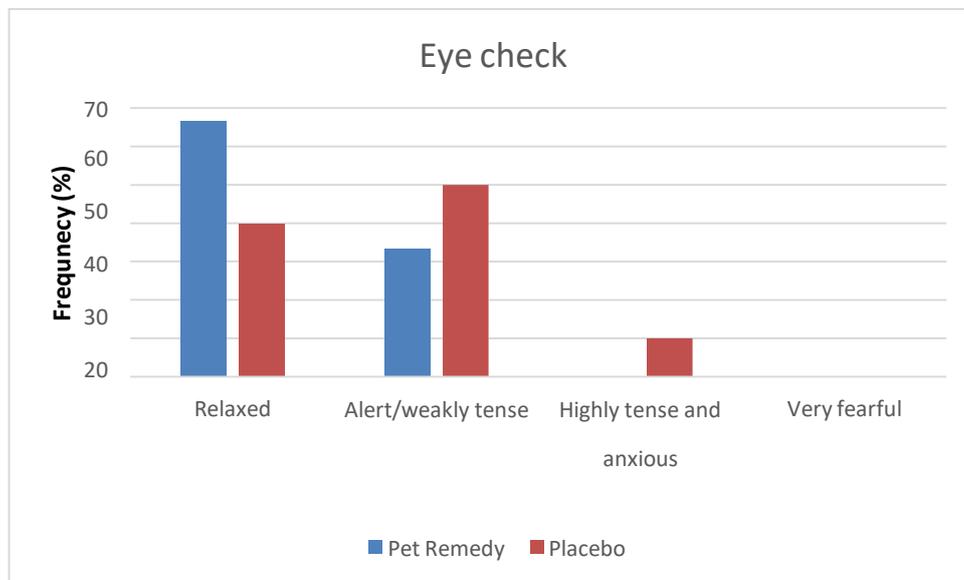


Figure 6.12 the veterinary surgeons opinion on feline behaviour during an eye check.

The veterinary professionals indicated a higher frequency of patients was relaxed during an eye check with Pet Remedy than with the placebo. The patients who received the Pet Remedy wipe were relaxed or alert and weakly tense whereas some patients with placebo were highly tense and anxious. No cat that received Pet Remedy was observed to be in the 'Highly tense & anxious' or 'Very fearful' categories.

#### The effect of Pet Remedy on mouth checking

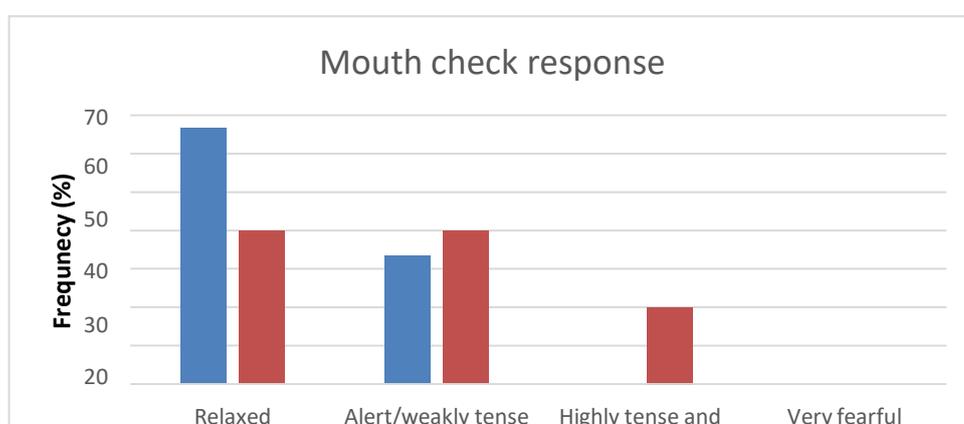


Figure 6.13 the veterinary surgeons opinion on feline behaviour during a mouth check

The veterinary professionals indicated more patients were relaxed during a mouth check with Pet Remedy than with the placebo. The patients who received the Pet Remedy wipe were relaxed or alert and weakly tense whereas some patients with placebo were highly tense and anxious. No cat that received Pet Remedy was observed to be in the 'Highly tense & anxious' or 'Very fearful' categories.

The effect of Pet Remedy on temperature checking

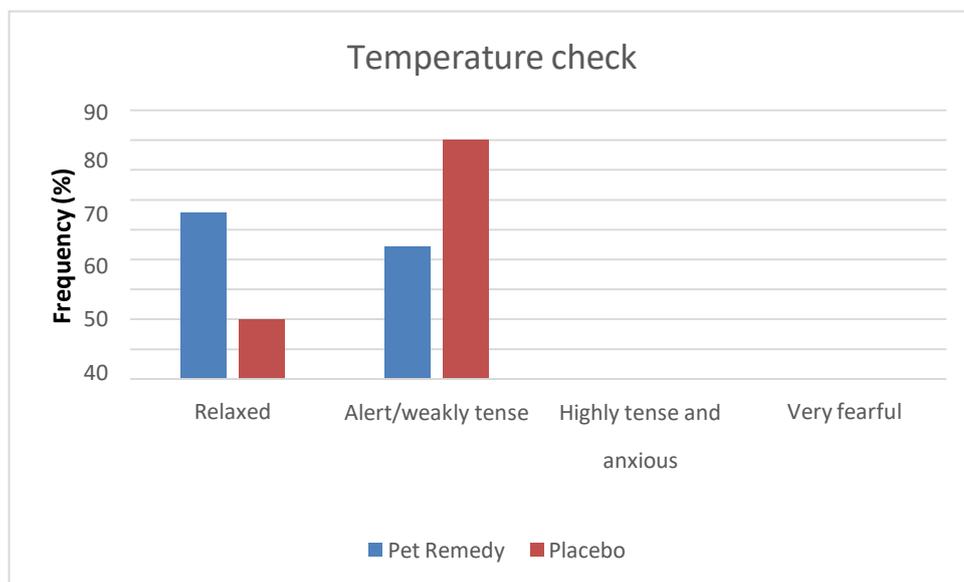


Figure 6.14 the veterinary surgeons opinion on feline behaviour during a temperature check.

The veterinary professionals indicated more patients were relaxed during a temperature check with Pet Remedy than with the placebo. Patients in both categories were either relaxed or alert and weakly tense. No cat that received Pet Remedy was observed to be in the 'Highly tense & anxious' or 'Very fearful' categories.

The effect of Pet Remedy on the booster injection

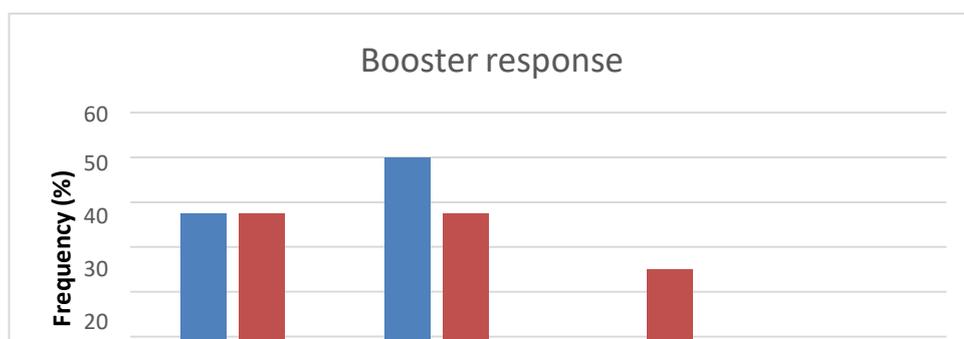


Figure 6.15 the veterinary surgeons opinion on feline behaviour during a booster injection.

The veterinary professionals indicate that the same frequency of patients was relaxed during the booster injection in both wipe categories. However, a higher frequency of patients in the Pet Remedy category was alert and weakly tense during the booster injection. The placebo wipe saw some patients become highly tense and anxious during the booster injection. No cat that received Pet Remedy was observed to be in the 'Highly tense & anxious' or 'Very fearful' categories.

### **Other Factors**

In the placebo category all cats were restrained using a light hold. In the Pet Remedy category 88.9% of cats were restrained using a light hold and 11.1% were restrained using a towel. No feline was restrained using sedation or scruffing.

### **Overall Results of Veterinary Surgeons' Responses**

The veterinary professionals' opinion on the feline behaviour, indicates a positive response to the Pet Remedy wipe. For all aspects of the appointment, a higher frequency of patients receiving the Pet Remedy wipe were relaxed. The veterinary surgeons reported a response of relaxed or alert and weakly tense for all components with the Pet Remedy wipe, whereas the placebo wipe reported responses of relaxed, alert and weakly, tense, and highly tense and anxious. No cat that received Pet Remedy was observed to be in the 'Highly tense & anxious' or 'Very fearful' categories. Therefore, this does indicate that the Pet Remedy wipe is effective on feline behaviour, helping to calm the patients. The booster injection had the same frequency of felines relaxed in both wipe categories; however a higher frequency of felines were alert and weakly tense with the Pet Remedy wipe. In the placebo group 25% of patients were highly tense and anxious during the booster injection. This may be expected as an injection can be uncomfortable, and the booster may be cold.

As an aside, it was found over half the clients involved in this study would like to see anxiety relief products routinely used during consults.

### **Study Design Analysis**

22 patients were involved in this study, and some questionnaires had to be omitted due to incompleteness or 'not applicable' boxes answered.

The trends identified by the graphs indicate a positive response to the Pet Remedy wipe.

The veterinary professional responses showed that more cats were relaxed with the Pet Remedy wipe, which indicates Pet Remedy has a positive effect on felines by helping make them calmer and less stressed.

The study was greatly advantaged by having the professional opinion of veterinary staff who are experienced in assessing cats during routine check-ups. Clinical professionals may have a more objective opinion than owners as they are less emotionally involved with the animal, and work with a wide spectrum of animals from which to draw comparisons.

## **Conclusion**

This research was carried out to check the efficacy of Pet Remedy in supporting cats during routine clinical procedures. The graphs suggest the use of Pet Remedy wipes does make felines calmer during appointments. The results of this study indicate that Pet Remedy could help make patients calmer in practice and may reduce the need for stronger handling techniques and sedation. All cats that received the Pet Remedy wipe were deemed to be in the relaxed or alert/weakly tense categories. No cat using the Pet Remedy wipe was deemed to be in the highly tense & anxious, or very fearful categories. Over half of the clients who took part in this study would like to see anxiety relief products routinely used in practice.

Further investigation could be conducted to determine if the vets' opinions of Pet Remedy changed throughout the study; and if vets believe Pet Remedy is something that should be routinely used in practice.