



Bristol Cats Study Newsletter - Autumn 2014

Thank you for your help—the Bristol Cats owners and cats are helping to make a difference to our knowledge of factors affecting feline welfare.

The 'Bristol Cats' study is a pioneering study of cat health, welfare and behaviour run by vets, behaviourists and epidemiologists at the University of Bristol. THE AIM IS to improve knowledge of common diseases and behaviour problems of cats, for example (but not exclusively), unwanted elimination, obesity and hyperthyroidism. Findings from the study may be used by veterinary practitioners, cat breeders, owners and the cat community to improve the health and welfare of cats in the future.

Recruitment of C.L.A.W.S. cats boosts our numbers!

When we finished recruiting kittens to the Bristol Cats study at the end of 2013, we had recruited a total of **2215** kittens belonging to **1709** owners. Since this time, we have welcomed an additional **160** cats from the 'C.L.A.W.S.' study, which is a two-year study of cats that were adopted from UK rehoming organisations as kittens. Lizzie Rowe has been running the CLAWS study as part of her PhD and many of the questions used in the Bristol Cats and CLAWS studies are identical, hence the CLAWS cats can easily become Bristol Cats! We are still accepting CLAWS cats onto the Bristol Cats study and anticipate that our final total of Bristol Cats will be in the region of **2500**. For further details about the CLAWS study, please visit the website at <http://www.bristol.ac.uk/vetscience/research/projects/claws/>

Body condition score and oral health cards

As usual, over the Christmas period we will be sending all owners body condition score cards and oral health cards. Please remember to take these cards with you when it is time for your Bristol Cat's annual vaccination (or if your cat has another appointment at an equivalent time point if not being vaccinated). If you have mislaid your cards please get in touch and we will send you replacement cards.

The completed cards you send back to us are very useful for helping us to identify how lifestyle factors affect the body condition and oral health of cats so please help us to collect these data. As an extra incentive, we are now offering an **additional prize draw for 3 gift vouchers (£100, £50, £30)** selected randomly each January from all cats whose owners have returned completed body condition score and oral health cards during the previous calendar year.



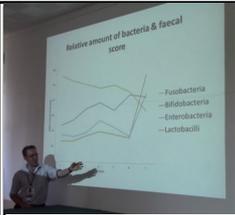
Prize winners will be notified by the end of January and gift vouchers can be selected from those available at www.highstreetvouchers.com

Prize draws:

In addition to the new prize draw for body condition score and oral health cards, we will still be running three other annual prize draws. Each draw is for 3 gift vouchers (£100, £50, £30) selected randomly each January from all cats whose owners have completed and returned:

- ◇ Questionnaires 1, 2, 3 and 4 (questionnaire 4 during the previous calendar year)
- ◇ Questionnaire 5
- ◇ Questionnaire 6

Good luck!



Bristol Cats 'open day' / conference



The Bristol Cats 'open day' was held on a very warm day in May. We welcomed owners of Bristol Cats, vets and vet nurses who had helped us advertise our study to their clients, representatives from feline charities (Cats Protection, International Cat Care) and a pet food manufacturer (Waltham). We were very grateful for the funding received from the Langford Trust for Animal Health & Welfare as this enabled us run the day at no cost to visitors. We have previously circulated the website addresses of video recordings of the presentations which are available on YouTube. Please get in touch with a member of the study team if you would like a reminder of the addresses. Feedback about the day and the video recordings was very positive and we look forward to organising a similar event in the future.

A true story about Bristol Cat 'Bella': Against The Odds... (written by Rebecca, her owner)



Despite their diminutive size, it's quite amazing how resilient and resourceful our feline friends can be. After 15 months apart, I was recently reunited with Bella (pictured), in remarkably excellent health for a small cat that had presumably been living wild all that time. Newsletter readers may remember that I wrote about her disappearance in early summer last year, after she broke out of a locked cat flap, so keen was she to continue her night's hunting. Despite days of searching and leafleting the neighbourhood, phone calls to the local vets and registering with Animal Search UK, I had given up hope of ever seeing her again after the start of last winter.

Fast forward to the middle of August this year, and I get a surprising phone call from the Westbury Veterinary Centre saying that she'd been found alive and well. They put me in touch with the kind people who'd taken her into the practice to be scanned for a microchip, which she is, and that's how they got my contact details. She'd been found about a mile and a half away from home, as the crow flies. That may not seem far, but would have meant crossing at least four busy roads and covers hundreds of acres of suburban landscape.

We can only guess at her adventures over the past year and a quarter. I've no doubt that she would have been capable of hunting for herself, as the aforementioned breakout on the night she disappeared would attest. And, although she was a little thinner than usual, her coat was glossy and eyes bright so perhaps she'd been looked after by someone for at least some of the time, rather than living rough.

As to why she disappeared in the first place, perhaps she was taken by someone either intentionally or accidentally in the back of a van, for example. Or, maybe she was scared and/or chased by something like a fox or dog until she got well and truly lost and unable to find her way home. We will just never know!

Most importantly, though, is that none of this would have been possible had she not been microchipped. I dread to think what fate might have befallen her had she not been. I hope anyone who has any doubts about microchipping will be encouraged by Bella's story and ensure all beloved pets are safeguarded in this way. I just wish we could have ones with tracking capabilities...

Thank you to Rebecca for writing this article and for this heart-warming story.

Ongoing study updates:

Lizzie Rowe has completed her analysis of data relating to factors that were associated with the body condition scores of 'Bristol Study Cats' at 12 months of age. Lizzie presented a poster summarizing her findings to the Society of Veterinary Epidemiology and Preventive Medicine in March 2014. A copy of her poster is provided below and the full results will be submitted to a peer-reviewed journal by the end of the year.



OVERWEIGHT/OBESE CATS ARE MORE LIKELY TO EAT DRY DIETS AND HAVE AN INDOOR LIFESTYLE

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BACKGROUND:

- ✦ The prevalence of UK pet cats that are overweight or obese has increased to an estimated 39% (Courcier et al. 2010).
- ✦ Being overweight/obese predisposes companion animals to a multitude of health problems and diseases, and may ultimately decrease lifespan.
- ✦ No previous study has used prospective data to identify risk factors for feline obesity in order to rule out reverse causality.

AIMS AND METHODOLOGY:

- ✦ The 'Bristol Cats' study (www.bristol.ac.uk/vetscience/cats) uses prospectively collected data to identify risk factors for problems such as obesity.
- ✦ Data are collected via owner-completed questionnaires when cats reach specific ages.
- ✦ Owner-reported body condition score (www.pfma.org.uk/cat-size-o-meter) of cats at 12.5-13 months of age were dichotomised to overweight/obese (BCS 4-5) and not overweight (BCS 1-3) and used as the outcome variable.
- ✦ Data relating to cat breed, neuter status, outdoor access (indoor only/restricted outdoor access (e.g. on lead or in outdoor run), unrestricted outdoor access (i.e. not restricted to lead or outdoor run)), type of diet fed and frequency of treats fed were extracted from questionnaires 1 (2-4 month old cats), 2 (6.5-7 month old cats) and 3 (12.5-13 month old cats) completed between March 2010 and August 2013 to be analysed as potential risk factors.
- ✦ Variables with $p < 0.1$ from univariable logistic regression models were included in the multivariable logistic regression models built using stepwise forward-selection. In order to take into account potential hierarchical clustering of data, logistic regression models were extended to two-level random intercept models. Wald tests were used to compare models.
- ✦ Analyses were conducted using MLwiN version 2.27.



OVERWEIGHT/OBESE CATS WERE MORE LIKELY TO HAVE NO OR RESTRICTED OUTDOOR ACCESS AND/OR BE FED DRY FOOD AS THE ONLY OR MAJOR (>50%) FOOD TYPE IN THEIR DIET



CATS NOT OVERWEIGHT WERE MORE LIKELY TO HAVE UNRESTRICTED OUTDOOR ACCESS AND/OR BE FED WET FOOD AS THE ONLY OR MAJOR (>50%) FOOD TYPE IN THEIR DIET, OR 50:50 DRY AND WET FOOD

RESULTS:

- ✦ 836 cats were included in the analysis.
- ✦ Clustering of cats in households had no impact on the analysis.
- ✦ Cats with restricted or no outdoor access at 12.5-13 months of age (questionnaire 3 completion) were more likely to be overweight/obese at 12.5-13 months of age: odds ratio 2.1, 95% confidence interval 1.6 -2.6.
- ✦ Cats fed a dry food diet at 6.5-7 months (questionnaire 2 completion) and 12.5-13 months of age were more likely to be overweight/obese at 12.5-13 months of age: odds ratio 2.0, 95% confidence interval 1.5 -2.5.

CONCLUSIONS:

- ✦ Cats which were fed a dry diet and/or had restricted or no outdoor access were twice as likely to become overweight/obese.
- ✦ Owners who choose to feed dry food and/or restrict their cat's outdoor access should pay careful attention to the amount of food they feed, provide increased opportunities for exercise for example through play, and monitor the body condition score of their cat closely, to prevent obesity from developing.

Ongoing study updates:

Sezan Ozgunay has now finished data collection for her 'social behaviour' MSc study, and would like to say a huge thank you to all of those who took part. A total of 128 cats and their owners were visited, of which 54 cats went on to learn and complete the cognitive bias test. Learning the task involved cats distinguishing between a bowl placed on one side of the room where it contained a treat (the cat runs fast to the bowl), and the bowl placed on the other side where it did not (the cat runs more slowly to the bowl). The average number of bowl visits it took for the cats to learn the task was 17. In addition to cognitive bias testing Sezan collected information regarding the relationships between cats in multi-cat households which she will also be using in her analysis. Sezan is now writing up the results of this project, a summary of which will be made available later in the year.



Victoria Crossley

Victoria is coming to the end of her 12 months post at the University of Bristol as the Zoetis Feline Fellow. As part of her research, she used the information supplied by Bristol Cats owners for a presentation that she gave at the 2014 British Small Animal Veterinary Association (BSAVA) congress. A summary of this presentation is given below:

Owner-reported mortality and common clinical problems in a cohort of young UK pet cats

Data related to mortality and common clinical problems are usually derived from veterinary practice records and therefore may under-report the prevalence of certain conditions and causes of mortality. The aim of this longitudinal study was to use owner-reported data to provide information on common clinical problems and causes of death in pet cats from time of ownership to 12 months of age.

This study reports data collected on 949 cats that were recruited as part of an on-going longitudinal study of UK pet cats, with initial enrolment at 2-4 months of age. Owner-reported data were collected using questionnaires when cats reached approximately 6.5 and 12.5 months of age and details regarding common clinical problems were recorded at these times. Clinical problems were categorised under headings that included: abscess/cat bite, cat flu, ear problems, skin problems, eye problems, dental/tooth/mouth problems, and vomiting and/or diarrhoea. Owners could also use free text to describe any other clinical problems. Causes of mortality were reported by owners at any time.

Between ownership and 12.5 months of age, 3.8% of cats were reported to have died and a further 0.5% cats were reported missing. The most common reasons for mortality were RTAs 2.0% and Feline Infectious Peritonitis 0.3% , with a further 0.8% reported to have died from other causes. Fifteen cats (1.6%) left the study before 12.5 months of age due to having been rehomed.

Owner-reported data for 949 cats revealed that between time of ownership and 12.5 months of age, 5.6% were believed to have had cat flu (n=53), 8.0% eye problems (n=75) and 48.0% vomiting and/or diarrhoea (n=452). The proportion of cats that were taken to a veterinary practice for the reported problem varied between 80.0% (12/15) for cat flu, 46.5% (20/43) for eye problems and 39.3% (66/168) for vomiting and/or diarrhoea. These results suggest that some disease prevalence estimates based on veterinary practice data may be under-estimated and the extent of this might be associated with the clinical signs of the disease. To our knowledge, this is also the first time that owner-reported mortality data has been reported from a longitudinal study of pet cats.

Lori Peacock and Tristan Cogan

Thanks to all the 'Bristol Cats' owners who kindly agreed to send a faecal sample from their cat(s) for our research project. So far, we have sent out 1214 packs and received 683 back, which is an amazing response rate of 56%! (The response rate from a study on dogs was only 30%!)

Briefly, this project investigates the intestinal microbiota of cats to see if certain factors affect the kind of bacteria they carry. Not much is known about the causes and development of gastrointestinal disease, diarrhea and constipation in cats but it is known that gut microbes play a crucial role in the stimulation of the immune system and aid in the defence against pathogens.

We scored the consistency of the faeces using the Nestle Purina Faecal Scoring System (<http://www.foothillpethospital.com/images/fecal-scoring.jpg>), as consistency can be an indicator of gastrointestinal health, and compared this score with the various microbes investigated in the project. An initial emphasis of this study was the probiotic bacteria *Lactobacillus* and *Bifidobacterium*. We found that almost a third of cats had no detectable level of these bacteria, while a third had both and the remaining third had only one of them. Additionally the looser (and hence more diarrhetic) the faeces was scored, the significantly higher relative number of these probiotic bacteria that was detected. Conversely the more firm the faeces was scored, the significantly higher relative number of *Fusobacterium* was detected, which may indicate a potential beneficial role of this bacterium in maintaining a healthy gut. Corroborating this, there were significantly more 'Bristol Cats' faecal samples that had *Fusobacterium* and significantly less with *Lactobacillus* as compared to diagnostic faecal samples from sick cats received by the Langford Veterinary Services.

We are still receiving some faecal samples that will be processed and included in our final analysis, the results of which will be written up for publication. Thank you all again for your help in this project, it is very much appreciated.

(Drs) Lori Peacock, Tristan Cogan and Jane Murray

2014 Christmas card:

Once again, we will be producing a Christmas card based on a selection of photos submitted by our owners. If you would like your cat to have a chance of being selected for the 2014 Christmas card, then please email or send in a photo to us, using the contact details below. Please only send ONE photo per cat. Please send in your photos no later than 10th October.



Potential funding for Bristol Cats.....

We are delighted to pass on the good news that we are currently in the process of drawing up a contract with a funder. Further details will be available once contracts are signed.....

This funding will enable us to pay for an administrative assistant for 4 days/week for 3 years, and will enable us to spend more time collecting data from the vets of the Bristol Cats. **If you are happy for us to access the vet records for your cat(s) - e.g. for details of vaccination, illness, treatment, but have not filled in a form to give us permission, please get in touch with Emma Gale (contact details below) and she will send you a form to complete. Thank you!**

Moving house / changed your email address / need to contact us?

It is really important that the contact details we have for you are up to date so we can send you questionnaires and other information. If you have changed email address, moved house or have a new contact number it is easy to update these online by visiting the website:

<http://www.survey.bris.ac.uk/smvsfa/update> and following the instructions. Alternatively you can get in touch using our contact details below:

Tel/text: 07827 981412

Email: cat-study@bristol.ac.uk