

# elimination in 12 month old UK pet cats



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**Background:** Inappropriate elimination ('house soiling') in pet cats has been associated with a significant increase risk of relinquishment to animal welfare organisations (Patronek *et al.*, 1996; Casey *et al.*, 2009) and is the most common behavioural problem for which cat seek professional advice.

There have been retrospective studies reporting variables associated with an increased risk of inappropriate elimination (multicat households, scented litter material, feline lower urinary tract disease), but we believe this is the first prospective study of this behaviour.

## Methodology:

- UK pet cats aged 8-16 weeks are being recruited (1<sup>st</sup> June -31<sup>st</sup> May 2013) to a long-term longitudinal study ([www.bristol.ac.uk/vetscience/cats](http://www.bristol.ac.uk/vetscience/cats)).
- Data are collected using owner-completed questionnaires (approximate ages: 2-4m, 6m, 12m, 18m and then annually).
- Data provided by owners of cats recruited between 1/5/10 and 2/7/12 were analysed using univariable and multivariable logistic regression to identify risk factors for inappropriate elimination in pet cats aged 12 months.
- **Outcome 1: Inappropriate urination (cat reported by the owner to urinate in the house, but outside the litter tray, always/usually/occasionally)**
- **Outcome 2: Inappropriate defecation (cat reported by the owner to defecate in the house, but outside the litter tray, always/usually/occasionally)**

**Inappropriate urination AND defecation displayed by 4.5% (24/538) of cats at 12 months**

**Inappropriate urination**  
10.4% (54/519) cats at 12 months of age  
14.2% (72/506) cats at 6 months of age

**Inappropriate defecation**  
8.4% (44/512) cats at 12 months of age  
14.8% (76/512) cats at 6 months of age

## MULTIVARIABLE LOGISTIC REGRESSION ANALYSIS RESULTS:

### Risk factors for inappropriate urination at 12 months (n=408)



**Inappropriate urination at six months**  
OR= 6.0 (95%CI 2.5-14.6)

**Pedigree cat**  
OR= 6.3 (95%CI 2.3-17.0)

**Kitten kept with other litters whilst with breeder**  
OR= 4.6 (95%CI 1.4-15.3)

**Inappropriate defecation at 12 months**  
OR= 26.3 (95%CI 8.6-80.1)

**Left without human company for 1-3 hrs/day**  
OR= 2.5 (95%CI 1.1-5.9)

**Hisses/spits at cats from other households entering home/garden**  
OR= 2.7 (95%CI 1.1-6.9)

**'Play' reaction to cats from other households entering home/garden**  
OR= 0.3 (95%CI 0.1-0.9)

Hosmer Lemeshow test statistic, P=0.13

### Risk factors for inappropriate defecation at 12 months (n=414)



**Inappropriate defecation at six months**  
OR=5.3 (95%CI 2.1-13.5)

**Inappropriate urination at 12 months**  
OR=26.5 (95%CI 9.9-71.2)

**Non-pedigree cat**  
OR= 8.9 (95%CI 1.6-48.5)

**Vet visit for sickness/diarrhoea in last six months**  
OR=4.3 (95%CI 1.1-17.3)

Hosmer Lemeshow test statistic, P=0.85

## Summary: 1 in 7 cats (72/504) displayed inappropriate elimination at 12 months of age.

- Cats showing inappropriate elimination behaviour at 6 months of age were likely to show the same behaviour at 12 months of age
- Inappropriate urination was most likely to be shown by pedigree cats and inappropriate defecation was most likely to be shown by non-pedigree cats.
- Some responses to stressful stimuli (e.g. cats from other households entering the study cat's garden) were predictors for inappropriate urination behaviour.

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**REFERENCES:** Patronek, G.J., Glickman, L.T., Beck, A.M., McCabe, G.P., Ecker, C. (1996) Risk factors for relinquishment of cats to an animal shelter. *JAVMA*, 209, 582-588. Casey, R.A., Vandenbussche, S., Bradshaw, J.W.S., Roberts, M.A. (2009). Reasons for relinquishment and return of domestic cats (*Felis silvestris catus*) to rescue shelters in the U.K. *Anthrozoos*, 22(4), 347-358.