

Management of Cats with Inappropriate Elimination

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Introduction

Cats showing inappropriate elimination behaviour are commonly presented to veterinary clinics and are at greatest risk of being relinquished to an animal shelter (Borchelt, 1991; Sung & Crowell-Davis, 2006). This has significant welfare implications since an estimated four million cats are euthanased in animal shelters each year (Patronek *et al.*, 1996). Inappropriate elimination is either a primary behavioural abnormality or a medical problem (characterised by various combinations of stranguria, hematuria and pollakiuria). When diagnostic tests do not reveal an underlying cause for these clinical signs, feline idiopathic cystitis (FIC), a condition with no effective long-term treatment, is diagnosed (Westropp *et al.*, 2006). Regardless of the cause, recent studies have shown that environmental modification is important in the management of cats exhibiting inappropriate elimination.

Discussion

It has been shown previously that factors including litter-box location, box size, litter substrate preference and frequency of litter-box cleaning are all potential causes of behaviour-based elimination problems (Halip *et al.*, 1992; Cooper, 1997). Sung & Crowell-Davis (2006) recently attempted to gain more insight into these factors by conducting a study into the placement of litter boxes and the behaviour patterns of cats during elimination. They used camcorders to record the behaviour of 40 cats before and during elimination over 72 hours. All the cats included in the study were clinically normal and lived in one-cat households, and half the cats had elimination behaviour problems.

Analysis of the video footage was undertaken to calculate the core area for each cat, which is the unique area individual cats use most frequently (Panaman, 1981). The position of the litter box within the core area was considered then compared between the two groups of cats. There was no significant difference in the placement of litter boxes between the problem and non-problem groups, suggesting that factors other than litter-box location are more important in the cause and management of elimination problems.

Sung & Crowell-Davis (2006) also noted that cats showing inappropriate elimination behaviour spent significantly less time digging in the litter box than normal cats. They proposed that this reflected the problem cats' preferences for a particular litter substrate that was not provided, or for greater litter-box cleanliness. However, although the study does provide some insight into the importance of factors that contribute to toileting problems, it is somewhat limited by its selection of cats from one-cat households. This is significant because social interactions among cats will often cause elimination problems (Neilson, 2004). Also, the study did not directly address how problem cats should be treated, so further studies are required to apply the current results to clinical situations.

One such study, by Cottam & Dodman (2007), examined the behaviour of cats in response to treatment for inappropriate elimination. A considerable component of treatment involves decreasing the odour of faeces and urine in the litter box, by regularly scooping or changing old litter (Crowell-Davis, 2001). Cottam & Dodman (2007) tested the effectiveness of a new spray called 'Zero Odor' in removing litter-box odour and therefore reducing the frequency of elimination outside the litter box.

Three studies were conducted. Study one involved providing 10 normal cats with two litter boxes each, one sprayed with Zero Odor. The number of urine and faecal clumps in each litter box was counted daily and compared. Study two involved 11 cats and compared the number of behaviours indicating litter box dissatisfaction before and after use of Zero Odor. Study three observed 26 cats diagnosed with behavioural elimination problems and compared the frequency of inappropriate elimination by them before and after use of Zero Odor.

Behaviours indicating dissatisfaction with the litter box include absence of digging or sniffing and failure to cover waste material (Griffith *et al.*, 2000). Cottam & Dodman (2007) showed that Zero Odor significantly reduced these behaviours and also decreased the frequency of undesirable elimination. In future, Zero Odor may be a useful addition to the standard treatment for inappropriate elimination. However, its effectiveness must be verified by further trials, as this study used relatively small numbers of cats and thus the repeatability of its results may be questioned.

The management of cats with either behaviour-based elimination problems or FIC is similar in that they both involve forms of environmental modification. Buffington *et al.* (2006) recruited 46 cats with FIC to test multimodal environmental modification (MEMO) aimed at reducing the clinical signs of cystitis by decreasing stress levels. Cats with FIC that are distressed have exacerbated clinical signs of disease (Westropp *et al.*, 2006). This may be due to their poor adaptation to indoor living, which can be frustratingly monotonous and predictable (Van Rooijen, 1991).

Stimuli used for MEMO included the provision of climbing structures, and supply of audio and visual sensory stimulation when the cat's owner was absent from the house. A significant decrease in the frequency of lower urinary tract signs was observed. However, the value of MEMO in treating FIC is questionable. Buffington *et al.* (2006) did not analyse a control group of cats, and cats participating in the study had considerable variation in the number and types of new stimulus provided to them. Also, some cats were concurrently treated with drugs, while others were not, which clearly must have influenced the accuracy of results. While it can be acknowledged that MEMO has a positive impact on cats with FIC, controlled clinical studies are needed to determine the value of this treatment. Furthermore, 25-30% of cats still had lower urinary tract signs after MEMO, possibly indicating that not all cats are receptive to this form of treatment.

Conclusion

Recent studies have shown that environmental modification plays a crucial role in the treatment of cats with inappropriate elimination due to primary behavioural abnormalities or idiopathic cystitis. Regardless of whether the treatment relies on adjusting litter-box features or decreasing stress responses in cats, stopping undesirable elimination will ultimately lead to happier cat owners and fewer cats being relinquished at animal shelters or euthanased.

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